



SURVEY INFORMATION - 2024-2025

1. INFORMATION OF THE INSTITUTION

1.1. Part A - Basic Information			
1.1.1. Name of the Institution		Al Azhar Medical College & Super Specialty Hospital	
1.1.2. Year Established	2014	1.1.3. Number of years in existence	9
1.1.4. Institution Type	College	1.1.5. Affiliating University	Kerala University of Health Sciences
1.1.6. Management Type	Self Financing-Private Sector	1.1.7. Name of the management	NOORUL ISLAM TRUST
1.1.8. Specialization	Medical	Specialization Sub-type	
1.1.9. Institution Type By Gender	Co-education	1.1.10. AISHE ID	C-51350
1.1.11. Institution Email id	info@aamc.org.in		
1.1.12. Institution Website	www.aamc.org.in	1.1.13. Address of Institution	Al Azhar Medical College & Super Specialty Hospital Ezhalloor P.O, Thodupuzha 685605 District : Idukki
1.1.14. Contact Details			
Type of Contact	Name	Designation	Contact Details
Head of Institution	Dr. Jose Joseph	Principal / Director	principal@aamc.org.in 9496224504
Nodal Officer	Mr. Ravindranathan V B		officeadmin@aamc.org.in 8547874381
1.2. Part B - Miscellaneous Information			
1.2.1. Taluk	Thodupuzha	1.2.2. Local Body Type	Panchayath
1.2.3. Village	Kumaramangalam (Part)		
1.2.4. Geographical Referencing			
Latitude	9.90001	Longitude	76.72001
1.2.5. Geographic Terrain	Mid Land	1.2.6. Location / Economic Zone	Rural
1.2.7. Total Area In hectares	11.043871	1.2.8. Total Constructed Area In sq.m	547038.0
1.3. Part C - Recognitions / Affiliations			
1.3.1. Details of UGC Recognitions			
Section	Date	Remarks	
Section 2f of UGC	2024-06-04		
1.3.2. Recognitions by other Statutory Bodies / Authorities			
Authority	Valid from	Valid to	Remarks
Medical Council of India (MCI)	2019-06-04	2024-08-16	
1.3.3. Accreditation Details			
1.3.3.1. NAAC/SAAC/Others			
Accredited By	Grade	Year	Remarks
1.3.3.2. NBA Accreditation			
Year	# of programs	Remarks	
0	0	0	
1.3.4. Is the institution recognized by			
1.3.4.1. By UGC as a institution with Potential for Excellence (CPE)	YES	Date of Recognition	
1.3.4.2. For its performance by any other Government agency (Max3)	YES	Date of Recognition	Agency name: NMC for Medical Qualification Date: 2019-06-19
1.3.5. Rank/Star Details			
Agency Name	Year	Rank/Star	

2. STAFF DETAILS

2.1. Part A - Department / Centres

S/no	Department	Faculty - Sanctioned Posts	Faculty - Permanent	Faculty - Contract/Temporary
1	ANATOMY	21	21	
2	PHYSIOLOGY	18	18	
3	BIOCHEMISTRY	16	16	
4	PHARMACOLOGY	18	18	
5	PATHOLOGY	20	20	
6	MICROBIOLOGY	17	17	
7	FORENSIC MEDICINE	15	15	
8	COMMUNITY MEDICINE	20	20	
9	GENERAL MEDICINE	24	24	
10	PEDIATRICS	13	13	
11	DERMATOLOGY	5	5	
12	PSYCHIATRY	6	6	
13	GENERAL SURGERY	24	24	
14	ORTHOPEDICS	13	13	
15	OTORHINOLARYNGIOLOGY(ENT)	9	9	
16	OBSTETRICS & GYNECOLOGY	15	15	
17	ANESTHESIOLOGY	17	17	
18	RADIO DIAGNOSIS	9	9	
19	DENTISTRY	4	4	
20	OPHTHALMOLOGY	9	9	
21	Administrative Block	74	74	

2.2. Part B - Details of Academic Staff

S/no	Department	Type	Name	Gender	Designation	Year of Entry	Details
1	Administrative Block	Others	Sinseena Sherief	Female	Others	2014	Details
2	Administrative Block	Others	ABIN IYPE	Male	Others	6	Details
3	Administrative Block	Others	NEENU P KURIAN	Female	Others	5	Details
4	Administrative Block	Others	SUDHEENA BEEVI T S	Female	Others	8	Details
5	Administrative Block	Others	VISHNU K V	Male	Others	6	Details
6	Administrative Block	Others	JUBIN SIBY	Male	Others	0	Details

2.3. Part C - Non-Teaching Staff Details

Type of Staff	Male #	Female #	Transgender #	GEN #	SC #	ST #	SEBC #	EWS #	PWD #	Total #
Administrative Staff	3	16		15	2	2				19
Library Staff	2	5		2	3	2				7
Others	110	266		223	25	15		112		376

2.4. Part D - Miscellaneous Information-Academic Staff

2.4.1. No. of Faculty who are recipients of CMNPF/ Kairali Research Award	
2.4.2. No. of Faculty who have Contributed to e-content Development	
2.4.3. Number of Research Supervisors	2
2.4.3. Number of Teachers Trained in KSHEC-FDP Programmes/LMS Programme	15

3. COURSES

3.1. Part A - Programme Details

Department	Level	Name of Programme	Subject	Duration in months	Sanctioned Intake	Actual Intake	Supernumerary Seats
OBSTETRICS & GYNECOLOGY	PG	MS Obstetrics & Gynecology		36	2	2	
PEDIATRICS	PG	MD Paediatrics		36	1	1	
	UG	MBBS		60	150	150	
ORTHOPEDICS	PG	M.D.S Orthodontics		36	2	2	
GENERAL MEDICINE	PG	MD General Medicine		36	2	2	
	PG	MD Respiratory Medicine		36	1	1	
	PG	MS Otorhinolaryngology (ENT)		36	2	2	
ANESTHESIOLOGY	PG	MD Anesthesiology		36	2	2	
GENERAL SURGERY	PG	MS General Surgery		36	2	2	

3.2. Part B - Student Enrolment (1st, 2nd, 3rd, 4th, 5th years) in the Current Academic Year
3.2.1. Total Students in the institution across all programmes in the current survey year

Department	Programme	# Male	# Female	# Transgender	# General	# SC	# ST	# SEBC	# EBFC	# PWD	Total (# Male/Female/Trans)
OBSTETRICS & GYNECOLOGY	MS Obstetrics & Gynecology	0	2	0	1	1	0	0	0	0	2
PEDIATRICS	MD Paediatrics	0	1	0	0	1	0	0	0	0	1
	MBBS	0	0	0	0	0	0	0	0	0	0
ORTHOPEDICS	M.D.S Orthodontics	2	0	0	1	0	0	0	0	0	2
GENERAL MEDICINE	MD General Medicine	1	1	0	1	0	0	0	0	0	2
	MD Respiratory Medicine	1	0	0	1	0	0	0	0	0	1
	MS Otorhinolaryngology (ENT)	0	2	0	1	1	0	0	0	0	2
ANESTHESIOLOGY	MD Anesthesiology		2	0	2	0	0	0	0	0	2
GENERAL SURGERY	MS General Surgery	1	1	0	1	0	0	1	0	0	2

3.2.2. Enrolment Summary

Mode	# of Male Students Enrolled	# of Female Students Enrolled	# of Transgender Students Enrolled
Regular	5	9	0

3.2.3. No. of students enrolled for online courses which have credits transferred to transcript

Name of Portal	# of Male Students Enrolled	# of Female Students Enrolled	# of Transgender Students Enrolled
SWAYAM	0	0	0
SWAYAM Plus	0	0	0
NPTEL	0	0	0
Coursera	0	0	0
Udacity	0	0	0

Others	0	0	0							
3.3. Miscellaneous – Student Enrolment Information										
3.3.1. No. of students from other Countries enrolled in the institution		0								
3.3.2. No. of students from other states enrolled in the institution		80								
3.3.3. No. of First Generation Learners(FGL) in the institution		0								
(FGL – First Generation Learners (FGL) refer to the children who are the first in their family to go to college or whose parents have not gone to college.)										
3.4. Part C - Examination Results										
3.4.1. Out-Turn Of Students										
Department	Program me	Number of Students Appeared					Number of Students passed			
		#Male	#Female	#Transge nder	#SC	#ST	#Male	#Female	#Transge nder	#SC
OBSTERI CS & GY NECOLO GY	MS Obstetric s & Gene cology	0	0	0	0	0	0	0	0	0
PEDIATRI CS	MD Paedi atrics	0	1	0	0	0	0	1	0	0
	MBBS	55	145	0	19	3	30	76	0	19
ORTHOP EDICS	M.D.S Ort hodontics	0	0	0	0	0	0	0	0	0
GENERA L MEDICIN E	MD General Medicine	0	0	0	0	0	0	0	0	0
	MD Respi ratory Medicine	0	0	0	0	0	0	0	0	0
	MS Otorhi nolaryng ology (ENT)	0	0	0	0	0	0	0	0	0
ANESTHE SIOLOGY	MD Anest hesiology	0	0	0	0	0	0	0	0	0
GENERA L SURGER Y	MS General Surgery	0	0	0	0	0	0	0	0	0
3.4.2. Examination Result Summary										
Appeared	Total Male	Total Female	Total Transgender	Total SC	Total ST					
	55	146	0	19	3					
Passed	Total Male	Total Female	Total Transgender	Total SC	Total ST					
	30	77	0	19	3					
3.5. Part D - Student Information										
Type	Number of Students enrolled									
	#Male	#Female	#Transgender							
NSS Scheme	0	0	0							
NCC Unit	0	0	0							
3.6. Part E - Student Accomplishments										
Type	Number of students participated									
	#Male	#Female	#Transgender							
Sports - University level	33	14	0							

Sports - University level			
Sports - National level	1	0	0
Sports - International level	0	0	0
Arts - University level	9	7	0
Arts - National level	0	0	0
Arts - International level	0	0	0

4. INFRASTRUCTURE INFORMATION

S/no	Infrastructure type	Availability	Details	Value
4.1. Academic Infrastructure				
4.1.1	Class rooms	Yes	Number of classrooms	04
4.1.2	Smart Classrooms	Yes	Number of classrooms	04
4.1.3	Laboratory	Yes	Number of laboratory	08
4.1.4	Auditorium	Yes	Number of seats	250
4.1.5	Seminar/Conference Hall	Yes	Number of halls	04
4.1.6	Computer Center	Yes	Number of computers	55
4.1.7	Studio	Yes	Area in sq.ft.	300
4.1.8	e-Content Development Centre	Yes		
4.1.9	Radio Station	No	Area in sq.ft.	
4.1.10	Video Channel for Institution	No		
4.1.11	Theatre	No	Number of seats	
4.2. Library and Learning Resources				
4.2.1	Library	Yes		
4.2.1.1	Number of Books			11613
4.2.2	Subscription To			
4.2.2.1	e-books	Yes	Number of e-books	"
4.2.2.2	Other e resources subscribed to	No	Number of e-Resource Books	
4.2.3	Whether a member of One Nation One Subscription(ONOS)?	No		
4.3. Knowledge Dissemination and Publications				
4.3.1	Subscription to			
4.3.1.1	Higher Education for the Future(KSHEC)	No		
4.3.1.2	Higher Education Matters (KSHEC)	No		
4.3.2	In House Publications			
4.3.2.1	News letters	Yes	Number of publications in this academic year	10
4.3.2.2	Magazine	Yes	Number of magazines in this academic year	1
4.3.2.3	Academic Journals	Yes	Number of journals in this academic year	100
4.4. Student and Staff Amenities				
4.4.1	Health Center	Yes		
4.4.2	Gymnasium/ Fitness center	Yes		
4.4.3	Amenity Center	Yes		
4.4.4	Common Room for Ladies/Womens Amenity Centre	Yes		
4.4.5	Creche	Yes		
4.4.6	Cafeteria/Canteen	Yes		
4.4.7	Staff Quarters	Yes	Number of quarters	64
4.4.8	Hostel - Men	Yes	Number of Seats	60000
4.4.9	Hostel - Ladies	Yes	Number of Seats	90000
4.4.10	Guest House	No		
4.5. Sports and Recreation Facilities				
4.5.1	Indoor stadium	Yes	Area in sq.ft.	8000
4.5.2	Play ground	Yes	Total area in sq.m	6154.55
4.6. Green and Sustainable Infrastructure				
4.6.1	Solar Power generation	No	Capacity in KW	
4.6.2	Water Harvesting Units	Yes	No: of Units	1
4.7. Divyanggan Friendly Facilities				
4.7.1	Toilets	No	Number	
4.7.2	Ramps Attached to Classrooms/Library	Yes	Number	1
4.8. Others				
4.8.1	Anti Ragging Cell	Yes		

5. FINANCIAL INFORMATION

5.1. Scholarships

Type of Scholarship	Scholarship name	Type	Number of students receiving scholarships		
			#Male	#Female	#Transgender
State	CH MOHAMME DKOYA SCHOLARSHIP	General	4	7	0
		Scheduled Caste	0	0	0
		Scheduled Tribe	0	0	0
		SEBC	23	59	0
		EWS	0	0	0
		PWD	0	0	0
State	E-GRANTZ	General	0	0	0
		Scheduled Caste	10	12	0
		Scheduled Tribe	3	2	0
		SEBC	0	0	0
		EWS	0	0	0
		PWD	0	0	0

5.2. Freeships/Endowments by Institutions

Endowment details	Type	Number of students received endowments		
		#Male	#Female	#Transgender
E GRANTS & FISHERIES	General	4	1	0
	Scheduled Caste	0	0	0
	Scheduled Tribe	0	1	0
	SEBC	0	2	0
	EWS	2	9	0
	PWD	0	0	0
	General	0	0	0
	Scheduled Caste	0	0	0
	Scheduled Tribe	0	0	0
	SEBC	0	0	0
	EWS	0	0	0
	PWD	0	0	0

5.3. Education Loans

Category	Number of students availing education loans		
	#Male	#Female	#Transgender
General	30	90	0
Scheduled Caste	5	6	0
Scheduled Tribe	0	0	0
SEBC	25	25	0
EWS	0	0	0
PWD	0	0	0

5.4. Income

Sino	Items	Amount (In Rupees)	Amount in Words
1	Grants received from		
(i)	University Grants Commission		Rupees Zero only
(ii)	Distance Education Council		Rupees Zero only
(iii)	Other Central Government Departments		Rupees Zero only
2	Amount Received from RUSA/PM-USHA Fund		Rupees Zero only
3	Grants Received From State Government		Rupees Zero only
4	Grants Received From Local Bodies		Rupees Zero only
5	Donations		Rupees Zero only
6	Tuition Fees	598736672	Rupees Fifty Nine Crore Eighty Seven Lakh Thirty Six Thousand Six Hundred Seventy Two only
7	Exam Fees	2100000	Rupees Twenty One Lakh only
8	Other Fees	45679738	Rupees Four Crore Fifty Six Lakh Seventy Nine Thousand Seven Hundred Thirty Eight only
9	Other Income	1762500	Rupees Seventeen Lakh Sixty Two Thousand Five Hundred only

10	Total	648278910	Rupees Sixty Four Crore Eighty Two Lakh Seventy Eight Thousand Nine Hundred Ten only
5.5. Expenditure			
Sino	Items	Amount (In Rupees)	Amount in Words
1	Salary, Allowances & Retirement Benefits	236864111	Rupees Twenty Three Crore Sixty Eight Lakh Sixty Four Thousand One Hundred Eleven only
2	Buildings (Construction & Maintenance)	39817791	Rupees Three Crore Ninety Eight Lakh Seventeen Thousand Seven Hundred Ninety One only
3	Library & Laboratory	19545438	Rupees One Crore Ninety Five Lakh Forty Five Thousand Four Hundred Thirty Eight only
4	Research Activities	1907308	Rupees Nineteen Lakh Seven Thousand Three Hundred Eight only
5	Scholarships	18951828	Rupees One Crore Eighty Nine Lakh Fifty One Thousand Eight Hundred Twenty Eight only
6	Grants to Colleges		Rupees Zero only
7	Utilisation of RUSA/PM-USHA		Rupees Zero only
9	Other Expenses	605333943	Rupees Sixty Crore Fifty Three Lakh Thirty Three Thousand Nine Hundred Forty Three only
10	Total	922420419	Rupees Ninety Two Crore Twenty Four Lakh Twenty Thousand Four Hundred Nineteen only

6. IMPLEMENTATION REFORMS

6.1. Curriculum Development	
6.1.1. Has your institution adopted the Four Year Under Graduate Programme?	No
6.1.2. Has your institution registered on Academic Bank of Credits (ABC) ?	No
6.1.3. Has your institution adopted the SWAYAM Regulations/Courses?	No
6.1.4. Number of Online Courses Offered through	
Swayam	
NPTEL	
MOOC	
6.1.5. Has your institution contributed/ developed to the preparation of a question bank?	No
6.2. Academic and Research Collaboration	
6.2.1. Whether your institution has collaborated with other institutes for Dual Program ?	No
6.2.2. Number of Collaboration with institutions	
Indian	
International	
6.2.3. Does your institution have an Internship Cell?	Yes
6.2.4. Does your institution have an Apprenticeship Cell?	No
6.3. Research and Innovation	
6.3.1. Does your Institution have Research Departments?	Yes
6.3.2. Does your institution have a Research and Development Cell?	Yes
6.3.3. How many active MoUs does your institution have for research collaboration?	
6.3.4. How many government-sponsored research projects are there?	
6.3.5. How many industry-sponsored research projects are there?	
6.3.6. How many patents are granted?	
6.3.7. How many research publications have been published in publications in peer reviewed journals ?	97
6.3.8. How many start-ups have been initiated by your institution?	
6.3.9. Whether your institution has adopted and Published Institutional Development Plan ?	Yes
6.3.10. Does your institution have Entrepreneurship and Innovation Cell?	Yes

6.3.11. Has your institution developed / adopted the Regulation on Ethics?	Yes
6.4. Industry-Institute Linkage	
6.4.1. How many MoUs have been signed with industries?	
6.4.2. Does your institution have Centers for Skill Development Courses and Career Planning (CSDCCP) ?	No
6.4.3. Whether your institution offers industry ready skill course in collaboration with industry?	No
6.4.4. Whether your institution offers internship degree programme ?	No
6.5. Student Exchange Programmes	
6.5.1. Number of Student Exchange Programmes	
6.5.2. Number of MoUs signed for Student Exchange Programmes	
6.5.3. Name of Centres of Excellence (Enter Name(s) of Institution separated by comma)	
6.6. IT Infrastructure	
6.6.1. Does the institution have a dedicated IT Centre?	Yes
6.6.2. Is there campus-wide Wi-Fi coverage?	Yes
If Yes, Who are the service providers?	BSNL
6.6.3. How does the institution provide remote access to IT resources?	VPN
6.6.4. What cloud platforms are currently in use?	Other
If Other, Provide Details	
6.6.5. What Learning Management System (LMS) is used?	Google Classroom
6.6.6. Name the student information system or ERP solution/ software in your institution.	Other
If Other, Provide Details	
6.6.7. Licensed Software for academic and administrative use	Other
If Other, Provide Details	
6.6.8. Does the institution utilize smart campus solutions?	IoT-enabled Smart Classrooms
6.6.9. Which of the following initiatives your institution is part of?	Let's go Digital Digicol, KALNET
6.6.10. Write a brief note on the IT Infrastructure Facilities (Not more than 200 words)	
<p>IT Infrastructure Facilities of a Medical College</p> <p>A Medical College requires robust IT infrastructure to support academic, administrative, and hospital functions. The core facilities include a Campus-wide Local Area Network (LAN) with high-speed internet connectivity through leased lines or optical fibre, ensuring seamless access to online resources, e-learning platforms, and hospital information systems. Computer laboratories with adequate systems enable students and faculty to access digital learning materials, simulation software, and research databases.</p> <p>A Learning Management System (LMS) is implemented for e-content delivery, online assignments, and assessments. The library is digitized with access to e-books, e-journals, and medical databases like PubMed and Clinical Key. The Hospital Information System (HIS) integrates patient registration, diagnostics, billing, and electronic medical records for efficient clinical management.</p> <p>The administrative departments are computerised for accounts, payroll, student records, and communication. Wi-Fi is provided across classrooms, hostels, and faculty areas to ensure continuous digital connectivity. Smart classrooms, video conferencing, and telemedicine facilities support modern teaching and remote consultations.</p> <p>Regular data backup, cyber security measures, and technical support ensure reliability and safety of information systems. Altogether, a well-developed IT infrastructure enhances teaching-learning, research, and healthcare delivery in the Medical College.</p>	
6.6.11. Write a brief summary on Digital Policy followed by the Institution(Not more than 200 words)	
<p>The Institution follows a well-defined Digital Policy to promote technology-driven education, research, and administration in line with national digital initiatives. As a private medical college, it ensures the effective use of digital tools to enhance teaching-learning, clinical training, and institutional management. Smart classrooms, simulation labs, and Learning Management Systems (LMS) are used for interactive and blended learning. The policy emphasizes maintaining digital records of students, faculty, patients, and administrative processes through secure management systems to ensure transparency and efficiency. E-governance practices are adopted for communication, attendance, examination management, and academic monitoring. Faculty members are encouraged to develop e-content and participate in online academic programs to strengthen digital competence. The Institution ensures safe internet access, cyber security, and data privacy across all digital platforms. Regular training programs are conducted for students and staff to enhance digital literacy. The Digital Policy supports the vision of a paperless, efficient, and technologically advanced medical institution aligned with the National Medical Commission guidelines and the Digital India mission.</p>	

7. DECLARATION

I hereby declare that this institution has actively participated in the survey, and the information and details submitted are true to the best of my knowledge.

Date : 07-Nov-2025

Principal/Head of the Institution

Teaching Faculties

1.2.4 Teaching Staff (Excluding Visiting Faculty) –Male

2024-25	2023-24	2022-23
207	133	128

1.2.5 Teaching Staff (Excluding Visiting Faculty) –Female

2024-25	2023-24	2022-23
188	121	126

1.2.7 Non-Teaching Staff-Male

2024-25	2023-24	2022-23
466	482	463

1.2.8 Non-Teaching Staff- Female

2024-25	2023-24	2022-23
513	497	516

1.3 Faculty Qualification and Experience (FQE)

1.3.1 Number of Regular faculty with Ph.D : 04

1.3.2 No. of faculty with experience upto 8 years : 312

1.3.3 No. of faculty with 8 to 15 Years' experience: 45

1.3.4 No. of faculty with more than 15 years' experience: 38

4.5(i). 1 Faculty in SC Category

2024-25	2023-24	2022-23
07	09	11

4.5(i). 2 Faculties in ST Category

2024-25	2023-24	2022-23
01	02	01

4.5(i). 1 Faculty in OBC Category

2024-25	2023-24	2022-23
54	57	61

4.5(i). 7 No. of non-teaching Staff in SC Category

2024-25	2023-24	2022-23
57	63	49

4.5(i). 8 No. of non-Teaching Staff in ST Category

2024-25	2023-24	2022-23
04	06	09

4.5(i). 9 No. of non- Teaching Staff in OBC Category

2024-25	2023-24	2022-23
117	111	97

1.6(i) Financial Resources and their Utilization (FRU)- Annual Expenditure on academic activities

1.6(i).1 Amounts utilized for Libraries (in Rupees)

2024-25	2023-24	2022-23
40,02,039	36,83,423	35,22,110

1.6(i).2 Amounts utilized for Laboratory Equipment's (in Rupees)

2024-25	2023-24	2022-23
1,38,21,554	1,27,21,163	1,21,64,050

1.6(i).3 Amounts utilized for other Equipment's purchased for academic activities (in Rupees)

2024-25	2023-24	2022-23
17,21,855	15,84,772	15,15,369

1.6(ii) Financial Resources and their Utilization (FRU)- Annual Operational expenditure for operational activities.

1.6(ii)1 Amounts utilized for Salaries (Teaching and Non-Teaching Staff) (in Rupees)

2024-25	2023-24	2022-23
23,68,64,111	21,80,06,545	20,84,59,117

1.6(ii) 2 Amounts utilized for maintenance of academic, infrastructure or consumable (excluding maintenance of hostels and allied services) (in Rupees)

2024-25	2023-24	2022-23
3,67,26,768	3,38,02,284	3,23,22,455

1.6(ii) 3 Amounts utilized for Seminars/Conferences/Workshops (in Rupees)

2024-25	2023-24	2022-23
2,07,149	1,90,657	1,82,307

Criteria: 02 –Knowledge Dissemination and Research Excellence (KDRE)

Research Productivity (RP)- Name of Department: (Number of Publications)

Sl.No.	Department	2024-25				2023-24				2022-23				CME/Work Shop/Medical Camps			
		Web of Science	Scopus	H-Index	Web of Science	Scopus	H-Index	Web of Science	Scopus	Web of Science	Scopus	H-Index	2024-25	2023-24	2024-25	2023-24	2022-23
1	Anatomy	0	0	01	0	0	04	0	0	0	01	02	0	0	0	0	0
2	Physiology	0	02	05	05	03	02	0	0	0	0	02	0	0	0	0	0
3	Biochemistry	03	1	0	02	-	0	0	0	0	02	0	0	0	0	0	0
4	Pathology	01	0	08	0	06	05	02	02	02	02	01	0	0	0	0	0
5	Forensic	0	0	03	0	0	01	0	0	0	02	04	0	0	0	0	0
6	Pharmacology	01	03	04	0	01	03	0	01	0	01	02	0	0	0	0	0
7	Microbiology	0	03	03	0	02	03	0	0	0	0	0	0	01	0	0	0
8	C/Medicine	0	01	01	01	02	08	0	02	0	02	02	05	0	0	0	0
9	General Medicine	0	0	06	0	0	03	0	0	0	0	03	02	03	02	03	01
10	General Surgery	06	0	03	0	0	07	0	0	0	0	06	0	0	0	0	0
11	OBG	0	0	03	0	01	02	0	01	0	0	03	10	01	0	0	02
12	Orthopedics	0	0	06	0	0	02	0	0	0	0	04	0	0	0	0	0
13	Radiology	02	02	01	0	0	02	0	0	0	0	0	0	0	0	0	0
14	Dermatology	0	0	01	0	0	05	0	0	0	0	09	0	0	0	0	0
15	Psychiatry	0	0	0	0	0	0	0	0	0	0	0	06	01	0	0	03
16	Pediatrics	0	01	01	0	0	03	0	0	01	01	0	09	06	0	0	02
17	ENT	0	03	03	0	03	02	0	03	0	03	01	04	03	0	0	01
18	Pulmonology	0	0	10	0	0	07	0	0	0	0	02	08	02	0	0	04
19	Ophthalmology	0	0	0	02	0	0	0	0	0	0	0	13	10	0	0	05
20	Anesthesia	0	0	09	0	0	07	0	0	0	0	02	0	0	0	0	0
21	Emergency Medicine	0	0	0	0	0	02	0	0	0	0	0	1/20/2	0	0	0	0
	Total	13	16	68	10	18	68	02	14	02	14	43	80	27	80	27	18

Role of Hematological Parameters in Diagnosis of Neonatal Sepsis

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Abstract: **Introduction:** Neonatal sepsis is one of the major causes of morbidity and mortality in the newborn, more so in the developing countries. The incidence of neonatal sepsis has been reported to be 30/1000 live births according to National Neonatal Perinatal Database. Certain neonatal characteristics are predictive of Early Onset Neonatal Sepsis (EOS). The objectives of this study were to perform haematological tests for detection of neonatal sepsis and to evaluate the validity of single and combined haematological parameters in case of proven septicaemia. **Methods:** 95 neonates admitted to NICU with signs suggestive of sepsis or who developed signs of sepsis while in the ward, were included in the present study. The neonatal sepsis screen included Total Leukocyte Count (TLC), raised micro-ESR, CRP, I/T Ratio >0.2, remained significant markers for early diagnosis of culture positive EOS (P<0.5). **Results:** Out of 95 newborns presenting with EOS, 46(48.4%) had positive blood culture. EOS was seen predominantly in preterm, males, LBW neonates. Among the various neonatal haematological parameters raised Micro-ESR, I/T Ratio >0.2 significant markers for early diagnosis of culture positive EOS (p<0.5). **Conclusion:** It is critical to diagnose sepsis early on and to rule out sepsis to avoid unnecessary antibiotic use. In predicting early onset newborn sepsis, a high index of suspicion combined with simple, cost-effective haematological screening measures is a sensitive and satisfactory approach.

Keywords: EOS, Haematological parameters, neonatal sepsis.

INTRODUCTION

Neonatal septicemia is a leading cause of mortality and morbidity during the neonatal period¹. By definition neonatal sepsis is defined as a clinical syndrome of bacteraemia with systemic signs and symptoms of infection in the first weeks of life. Illness can rapidly progressive so timely diagnosis of septicaemia is critical.² In developing countries, total neonatal deaths account for about 30% to 50%. Overall incidence of sepsis is 1-5 /1000 live births and mortality of untreated sepsis can be as high as 50%. In India incidence of sepsis is 38 per 1000 live births in tertiary care institutes and it contributes to 36% of deaths in hospitals³. According to Neonatal Perinatal Database (NNPD), incidence of neonatal sepsis is 30/1000 live births.¹

Common causes of neonatal septicaemia is Group B Streptococcal Disease in Europe and North America. In developing countries and tropical, Gram Negative organism is most common cause. In India according to NNPD Klebsiella pneumonia followed by Staphylococcus aureus is the most frequent causes.⁴

Immaturity of both cellular and humoral immune systems at birth leads to susceptibility of new born to infection. Particularly this feature is evident in preterm neonates.

Infection can be acquired from mother through transplacental route, ascending infection, during passage through an infected birth canal, or exposure to infected blood at delivery⁵.

Initial diagnosis of neonatal sepsis based on clinical signs and symptoms which are non specific as other non infective conditions like aspiration, asphyxia, and metabolic disorders⁶.

Neonatal sepsis is classified into Early onset neonatal sepsis (EONS) and Late onset neonatal sepsis (LONS). EONS is defined as onset of signs and symptoms within first 72 hours of life. LONS defined as clinical signs and symptoms occur after 72 hours of life. Before the diagnosis is confirmed, antibiotics therapy is commenced soon after onset of symptoms.⁶ The early initiation of appropriate antibiotics therapy results in successful outcome of bacterial infection.⁷

Neonatal sepsis can be of two types according to National Neonatology forum.¹

^A. Proven sepsis: newborn with clinical symptoms suggestive of sepsis and isolation of pathogens from blood, CSF



Isolation, Characterization & Antibigram of Enterococcus Species from Various Clinical Specimens.

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Abstract: **Background:** Enterococci are relatively avirulent in healthy individuals but pathogenic in hospitalized patients. Because of their resistance to multiple drugs resulted in serious super infections among hospitalized patients. The present study was undertaken for isolation, identification & speciation of enterococci and determines antibiotic susceptibility patterns in various clinical specimens. **Methods:** Identification & Speciation of 100 isolates were done by standard conventional methods from various clinical samples like urine, pus, blood, wound swab etc & Antibacterial susceptibility pattern determined by Kirby-Bauer disc diffusion method. **Results:** Among 100 isolates, enterococcus spp isolated more from female patients (21-40yrs). *E. faecalis*, isolated in 60% of cases followed by *E. faecium* (36%), *E. durans* (3%), *E. avium* (1%). Enterococcal spp. isolated from Urine (59%), followed by blood (18%), pus (13%), wound swab (8%) & CSF (2%). Enterococcus shows resistance to antibiotics like penicillin, ampicillin followed by ciprofloxacin, erythromycin, tetracycline, high level gentamicin & 100% sensitive to Linezolid followed by teichoplanin & vancomycin. The resistance pattern of enterococci in urinary isolates is only 33.89%. **Conclusion:** The most common isolate in our study is *E. faecalis*. There is an increase in isolation rate of *E. faecium* and other non faecalis species of enterococci. The study revealed the prevalence of multidrug resistant HLAR strains of *E. faecalis* & *E. faecium*. Therefore, a periodic surveillance is required to monitor these rapid changing patterns of Enterococcal infections for effective treatment.

Keywords: Enterococci, identification, resistant, sensitive, HLAR,

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INTRODUCTION

Enterococci, an indigenous flora of the intestinal tract, oral cavity, vagina etc are known to be relatively avirulent in healthy individuals but pathogenic in hospitalized patients^{1,2}. Among Enterococcal spp. *E. faecalis* & *E. faecium* are the two major human pathogens accounting for 85-89% & 10-15% of all enterococcal infections respectively. Recently there is an increase in the rate of isolation of *E. faecium* & other spp. from clinical specimens². The most common nosocomial

Nuclear morphometric study of malignant breast lesions with histopathological correlation in South Indian population

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Abstract:

Background: nuclear morphometric measurements like major axis, minor axis, nuclear area and nuclear perimeter vary according to malignant grades of breast carcinoma. **Materials and methods:** Diagnosis of malignant cases was done in 31 patients by correlation of clinical history, radiological findings, adequacy of smear, predominant patterns and individual cell cytomorphology. Morphometric values like major axis of nucleus, minor axis of nucleus, nuclear area and nuclear perimeter were measured using ProgresR capture pro 2.9.0.1 software. **Result:** 16 cases (51.61%) were diagnosed as grade 1, eight (25.80%) cases were grade 2, seven (22.58%) cases were grade 3 using Robinson's cytological grading. One-way ANOVA test showed that these cytodiagnostic categories are significantly different from each other for the nuclear parameters. (p value < 0.01). **Conclusion:** as there is grey area in diagnosing breast lesions from FNAC, nuclear morphometry can be pivotal in prompt diagnosis and also improvement in mortality of patients with malignant breast carcinoma.

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Introduction

Breast cancer is the second most common cancer among women in India and accounts for 7% of global burden of breast cancer and one-fifth of all cancers among women in India.¹ A definitive cancer diagnosis is given in approximately two-thirds of screen detected cancers by fine needle aspiration cytology as a part of triple diagnosis. The other one- third requires further investigation to give the go-ahead for more extensive definitive surgery. The reason may be due to discordance with radiological findings, doubts about invasion, or a relatively bland cytology as in low-grade cancers, mainly lobular carcinoma of classic type and tubular carcinoma.²

ORIGINAL ARTICLE

Stature Prediction from Anthropometric Measurements of Palm and Finger in South Indian Population

Amjad Dastageer Mirzanaik¹, Samreen Panjakash², Karikalan T³

ABSTRACT

INTRODUCTION:

AIM: To establish correlation between stature and palm lengths and individual finger length of both the hands in both males and females separately in South Indian population.

SETTINGS AND DESIGN: The present study was set up in the department of anatomy of Al Ameen Medical College, Bijapur. Among the volunteers, 300 healthy adults of age group 18 -30 years were selected for the study.

MATERIALS AND METHODS: Stature was measured using Standard Stadiometer and palm and finger length were measured using Vernier caliper.

STATISTICAL ANALYSIS USED: Pearson's correlation coefficient and Regression equation formulas for stature estimation were calculated for all the parameters using trial version of SPSS software. Result: all the parameters displayed positive and significant correlation with stature in given population. Regression equations were calculated to estimate stature from given palm length or finger lengths.

CONCLUSION: There exists a definite correlation between stature with palm and finger length in both males and females included in the study.

KEYWORDS: Stature; Correlation; Regression equation

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INTRODUCTION

As the world is developing, modern technology is at its pinnacle, with it came wars, mass disasters, natural disasters, terrorist attacks, etc creating a need to handle such situations with great efficacy. The onus lies on the law agencies and medico legal experts to solve the problems of identification which arises under these scenarios where multiple victims are involved.

Determining the stature of an individual from the dismembered body parts is one of the vital duties of a medico legal expert to aid in identification of an individual.

In forensic investigations, stature can be calculated by using either anatomical method or mathematical method. The anatomical method involves measuring and adding together the lengths or heights of a series of contiguous

Sensory nerve conduction parameters in patients with hypothyroidism

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Abstract: *Background:* Early determination of sensory nerve dysfunction in hypothyroidism can play a significant role in medical management of neuropathies. *Objectives:* To find out the sensory nerve conduction status of peripheral nerves to evaluate presence of sensory nerve dysfunction in hypothyroid patients. *Materials and Method:* 32 females and 8 males with hypothyroidism and 40 control groups were selected. Sensory nerve conduction parameters of ulnar, median and sural nerve in the hypothyroid group were compared to that of the control group. The relationship of age, sex and BMI with alterations in sensory nerve function was also determined in the hypothyroid group. *Result:* Among the 32 female patients 15 (46.88%) had altered sensory nerve conduction parameters. Only 2 (25%) out of the 8 male patients had altered sensory nerve conduction parameters. Though females were more affected than males the difference was not statistically significant ($p>0.05$). *Conclusion:* There was significant alteration in the sensory nerve conduction parameters in hypothyroid patients. Among the altered parameters, prolonged sensory distal latency and decreased sensory nerve conduction velocity in median nerve was the most common finding.

Keywords: hypothyroid, neuropathy, Nerve conduction velocity.

Introduction

According to the Indian Thyroid Society (ITS), around 42 million people in India suffer from diseases related to thyroid gland, hypothyroidism being the most prevalent disorder affecting one in every eight women [1]. The prevalence of neurological complications have been reported to be around 79% in hypothyroidism [2].

Sensory symptoms are usually the presenting features of neuropathy. Nerve conduction studies assess the shape, amplitude, latency, and conduction velocity of an electrical signal conducted over the tested nerve. They can help determine whether the neuropathy is the result of damage to the axons (axonal neuropathy) or the myelin (demyelinating neuropathy), or both (mixed)[3]. The sensory nerve conduction studies are more sensitive in detecting early or mild disorders of peripheral nerves when compared to the motor nerve conduction studies [4].

This study has been designed to find out the sensory nerve conduction status of peripheral nerves in order to evaluate the presence of sensory nerve dysfunction in hypothyroid patients. The study also aims to find out the association between age, gender and body mass index with the presence of neurological deficits in hypothyroid patients.

This peripheral polyneuropathy, a progressive nerve disorder, can become chronic disability if undetected. Studies show that this neuropathy is reversible. Hence nerve conduction study can be used to estimate the response of peripheral nerve dysfunction to L-Thyroxine replacement therapy. There fore early electrophysiological determination of sensory nerve dysfunction in hypothyroid patients can play a significant role in the medical management of entrapment neuropathies before switching on to surgical modalities of treatment.

ORIGINAL ARTICLE

Association Between Gestational Diabetes Mellitus and Single Nucleotide Polymorphism of rs10830963 in the Melatonin Receptor (MTNR1B) Loci - A Prospective Case-Control Study in South Indian Population

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ABSTRACT

Gestational diabetes mellitus (GDM) is any glucose intolerance with onset or first recognition during pregnancy. A case-control study was performed to analyze the relationship between GDM and Melatonin receptor 1B genetic variability of rs10830963 in the Melatonin receptor 1B (MTNR1B) locus in the case and control population. Melatonin is a hormone secreted into the circulation by the pineal gland. It regulates both seasonal and circadian rhythms. The polymorphisms of MTNR1B are linked with increased fasting plasma glucose levels, impaired insulin production, and the development of type 2 diabetes, supported by solid evidence from genome-wide association studies. Allele frequencies of the Indian control population are not well established as only a few studies were conducted in the Indian population that looked into the association between the MTNR1B gene and GDM. This study evaluated the association between GDM and the single nucleotide polymorphism of rs10830963 in the MTNR1B loci. The MTNR1B polymorphism (rs10830963) analysis in the present study showed G allele as a significant allele in category GDM. In contrast, the control population's allele proportions showed G allele as a minor allele. The inheritance models showed the G allele with a higher odds ratio than the C allele, where the G allele is a possible risk factor for GDM and BMI in our population. SNP analysis in the GDM group showed the SNP rs10830963 CG and GG genotypes as potential risk factors for developing GDM in the study population. In contrast, the control population showed higher frequencies of CC Genotype.

Keywords; Gestational diabetes mellitus, Melatonin receptor 1B polymorphism, Melatonin, SNP Analysis, Insulin resistance

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INTRODUCTION

Gestational diabetes mellitus is any glucose intolerance that develops or is initially diagnosed during pregnancy [1]. GDM causes a substantial impact on the mother and the infant's pregnancy outcomes. Even though it may have a detrimental influence on the lives of pregnant women, it continues to be a contentious issue with contradictory management and treatment guidelines. The Asian population has a greater-than-normal risk of getting type 2 diabetes. It has been demonstrated that lifestyle changes, namely decreased physical activity and increased sedentary behavior, substantially contribute to the incidence of GDM. According to the Diabetes Atlas Survey, 88 million people in Southeast Asia live with diabetes. This number is anticipated to reach 115 million by 2030 and 153 million by 2045, a 74% increase. Maintaining a healthy weight and diet is crucial, and children born to moms with gestational diabetes have a 1.8-fold greater chance of acquiring type 1 diabetes in adulthood [2]. This will make a substantial contribution toward

RESEARCH ARTICLE

Histological alterations of the placenta in gestational diabetes mellitus: Implications for fetoplacental transport and fetal outcome

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ABSTRACT

Background: The placenta is a pivotal medium for physiological exchanges between the maternal and fetal circulations. However, diabetic insults early in gestation can influence the placental barrier, potentially impacting fetal development and outcomes. This study sought to understand the histological changes in the placentae of gestational diabetes mellitus (GDM) cases, highlighting the significance of these alterations on fetal health. **Aims and Objectives:** The primary aim of this research was to elucidate the histological changes present in the placentae of women diagnosed with GDM. Furthermore, the study sought to determine the implications of these changes on the standard placental anatomy and its associated functionalities, thereby assessing potential impacts on fetal development and outcomes. **Materials and Methods:** A case-control study was conducted at MES Medical College, Perinthalmanna, Kerala, from October 2014 to December 2018. Inclusion criteria considered pregnant women aged 19–38 years diagnosed with GDM, among other factors. Exclusion criteria weeded out pre-diagnosed diabetes cases, unclear glycemic statuses, and a range of pregnancy complications. Placentae samples underwent meticulous histological and histochemical analyses, focusing on key histological features, including syncytiotrophoblastic knots, vasculosyncytial membranes, and chorangiosis. **Results:** Significant histological variations were observed in GDM cases compared to controls. Notably, there was an increased formation of syncytial knots and reduced vasculosyncytial membranes in GDM placentae. In addition, chorangiosis was more prevalent, suggesting potential chronic prenatal hypoxia. Marked thickening of the syncytiotrophoblast basement membrane, villous edema, and fibrinoid necrosis were other pertinent findings in GDM cases, each with statistical significance ($P < 0.001$). **Conclusion:** The findings underscore the profound histological changes in the placenta associated with GDM, emphasizing the need for comprehensive maternal care and monitoring. These alterations can compromise fetoplacental transport and may have long-term implications on fetal health, highlighting the critical role of timely GDM diagnosis and intervention.

KEY WORDS: Gestational Diabetes Mellitus; Placental Histology; Syncytial Knots; Vasculosyncytial Membrane; Chorangiosis; Placental Anomalies; Fetal Outcomes

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INTRODUCTION

Gestational diabetes mellitus (GDM) is characterized by glucose intolerance diagnosed during pregnancy.^[1] As a common metabolic disorder affecting pregnant women, GDM raises concerns due to its potential impact on maternal and fetal health outcomes. The placenta, a crucial

National Journal of Physiology, Pharmacy and Pharmacology Online 2024. © 2024 Geena Augustine, et al. This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

RESEARCH ARTICLE

Assessment of maternal and cord blood hematological alterations in mothers with gestational diabetes mellitus: A comparative study with healthy pregnant women and their newborns

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ABSTRACT

Background: Gestational diabetes mellitus (GDM) is a prevalent condition with potential repercussions on glucose metabolism and possibly on various hematological parameters. Exploring these alterations provides insights into the systemic manifestations and implications for maternal and neonatal health. **Aims and Objectives:** The primary aim of this study was to assess the hematological variations observed in maternal and cord blood between GDM mothers and non-GDM counterparts. Furthermore, based on these hematological markers, we sought to evaluate the potential ramifications of GDM on maternal and neonatal health. Another goal was to contrast the hematological features in newborns born to GDM mothers with those born to non-GDM mothers. **Materials and Methods:** A case-control study was conducted at MES Medical College, Central Research Department in Perinthalmanna, Kerala. Pregnant women from the Malappuram district admitted to the labor ward and met the inclusion criteria were involved. The study enrolled 100 GDM pregnant women as cases and 50 healthy pregnant women as controls. Hematological analysis was performed on maternal venous blood samples and cord blood samples, evaluated at the Central Laboratory of MES Medical College. Statistical analysis was performed using IBM SPSS version 20. **Results:** Significant hematological variations were observed between the two groups. Maternal blood of GDM patients showed a higher red blood cell (RBC) count and differences in mean corpuscular volume (MCV) and mean corpuscular hemoglobin (MCH) compared to controls. Cord blood samples from GDM neonates reflected elevated RBC, MCV, and MCH levels, with a pronounced white blood cells count higher than non-GDM neonates. Several parameters, including hemoglobin, MCH concentration, and platelet counts, remained consistent across groups. **Conclusion:** ???.

KEY WORDS: Gestational Diabetes Mellitus; Hematological Parameters; Maternal Health; Neonatal Health; Pro-inflammatory State; Intrauterine Metabolic Environment

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INTRODUCTION

Gestational diabetes mellitus (GDM), a form of glucose intolerance emerging during pregnancy, has long been a significant concern in obstetric medicine.^[1] Globally, it is estimated that about 7% of pregnancies are complicated by GDM, with varying prevalence based on geographical,

National Journal of Physiology, Pharmacy and Pharmacology Online 2024. © 2024 Geena Augustine, *et al.* This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

ORIGINAL RESEARCH ARTICLE

Association of sRAGE with Inflammatory Markers and Insulin Resistance across A Spectrum of T2DM Mellitus, Prediabetes, and Healthy Controls

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ABSTRACT

Background: Recent research on type 2 diabetes (T2DM) has linked the mediation of receptors for advanced glycation end products (RAGE) to underlying inflammation. However, studies regarding the role of soluble RAGE (sRAGE) in prediabetes and diabetes remain sparse.

Aim: To compare serum sRAGE, interleukin-6 (IL-6), and high-sensitivity C-reactive protein (hsCRP) levels in T2DM, prediabetes, and controls and to correlate sRAGE with inflammatory markers and insulin resistance.

Materials and methods: Based on fasting plasma glucose and HbA1c values, 105 subjects aged 25–55 years were categorized into T2DM, prediabetes, and control groups. Serum sRAGE, IL-6, and hsCRP levels were estimated using sandwich enzyme-linked immunosorbent assay (ELISA), and insulin resistance was computed using the HOMA2-IR calculator. Statistical analysis was performed in SPSS version 20 employing ANOVA for intergroup mean comparisons and Pearson's correlation for correlation analysis.

Results: Serum sRAGE levels were significantly decreased in T2DM (4.45 ± 1.06 ng/mL; $p < 0.001$) as compared to controls (5.65 ± 1.32 ng/mL). IL-6 and hsCRP were increased in the diabetes and prediabetes groups ($p < 0.05$). Soluble RAGE correlated inversely with inflammatory markers, insulin resistance, and glycemic indices in the diabetes and prediabetes groups ($p < 0.05$).

Conclusion: Soluble RAGE is generally considered protective against diseases originating from RAGE activation. Thus, its decreased levels in diabetics could be associated with disease progression. Soluble RAGE levels correlated inversely with the inflammatory markers and IR suggesting its possible role as marker of vascular inflammation in diabetes. Elevated levels of cardiovascular disease (CVD) risk markers, like IL-6 and hsCRP, and their strong correlation of these inflammatory markers with glycemic indices and IR even at the preclinical stage predisposes them to an increased risk of CVD.

Clinical significance: Elevated CVD risk markers highlight an increased risk of CVD even at the preclinical stage of diabetes. The strong correlation between sRAGE and inflammatory markers in our study highlights its role as a novel biomarker for vascular inflammation.

Keywords: High-sensitivity C-reactive protein, Inflammation, Insulin resistance, Interleukin-6, Prediabetes, sRAGE, Type 2 diabetes mellitus.

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INTRODUCTION

Rapid urbanization, coupled with a sedentary lifestyle, has directed us to an increased prevalence of metabolic disorders like type 2 diabetes mellitus (T2DM).¹ Cardiovascular complications are one of the leading cause of mortality in T2DM. Amid the ongoing research on diabetes mellitus, a void exists on the exact pathophysiology.

Chronic inflammation has been hypothesized as the cause behind endothelial dysfunction, insulin resistance, and atherosclerosis, which lead to the development of cardiovascular complications.² People with prediabetes have the same cardiovascular risk factors as that of T2DM thus putting them at a modest risk for cardiovascular events.³

Literature search has often associated underlying inflammation to β -cell dysfunction from chronic hyperglycemia in diabetes; however, this aspect has not been well studied in prediabetes. Nakamura et al. attributed the increased expression of inflammatory markers, such as interleukin-6 (IL-6), in endothelial cells to the advanced glycation end product (AGE) – signaling by receptors for advanced glycation end products (RAGE).⁴

Advanced glycation end products and the stimulation of their receptors can cause chronic inflammation and oxidative stress, which are responsible for progression to diabetes-related complications. Literature survey has shown that AGE–RAGE

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linkage induces inflammation in the vessels, thus accelerating atherosclerosis in a diabetes patient.⁴ A novel soluble form of RAGE (sRAGE), that is circulating in the plasma, can reduce RAGE

Correlation of Serum Uric Acid levels with Blood Pressure and Glycated Hemoglobin in Prediabetes and Diabetes Patients

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ABSTRACT

Background: Increased serum uric acid (SUA) through a series of pathophysiological sequelae like oxidative strain, inflammation and endothelial vascular impairment causes different diseases.

Aim: Evaluate association between serum uric acid levels and hypertension, blood sugar and glycated hemoglobin in prediabetes, diabetes and healthy control.

Methods: Cross sectional study conducted in 120 subjects, divided equally into three groups: 40 prediabetes, 40 type 2 Diabetes (T2DM) and 40 healthy controls. Data was collected using a proforma, covering particulars related to hypertension, fasting blood sugar (FBG), glycated hemoglobin (HbA1c) and the levels of SUA. SPSS software was used for analysing the data.

Results: The age- and sex-matched prediabetic and diabetic groups had significantly higher systolic and diastolic blood pressures compared to control group. Diabetes markers FBG and HbA1c were recorded highest in the T2DM group, which shows a significant difference in mean compared to prediabetes and the control group. SUA levels were highest in diabetes but found an insignificant difference with prediabetes, whereas the control group showed significant differences (4.4 ± 0.5 , $p < 0.05$) with prediabetes (7.1 ± 2.4) and diabetes (7.6 ± 1.5). A significant and positive correlation was recorded between SUA and blood pressure, FBG and HbA1c in the diabetes group. In prediabetes, SUA was found to have a positive association with only systolic blood pressure (SBP) and FBG.

Conclusion: Severity of disease progression in patients with hypertension and diabetes, SUA can probably be used as an early biochemical marker. So, assessment of serum uric acid as a routine investigation may be recommended for evaluating disease progress.

Keywords: diabetes, oxidative stress, prediabetes, uric acid



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PREVALENCE OF THYROID DYSFUNCTION IN NAMAKKAL DISTRICT -A HOSPITAL-BASED STUDY.

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ABSTRACT

Introduction: Thyroid disorders are most common endocrine disorder in India but the prevalence studies on these dysfunction is limited.

Materials and method: All subjects who visited the hospital for a period of four months to have thyroid function tests (TFTs) on their first outpatient visit were included in the study.

Results: Thyroid disorders were present in 22.11 % of the total 2510 subjects . The prevalence rate was higher in females (64.8%) than males (35.2%) with (p=0.0003).

The prevalence of hypothyroidism in the study population was 64.32 % (n = 357). In our study those with primary hypothyroidism were predominant (55.18 %, 197 out of 357) and 43.1 % (154 out of 357) were having sub clinical hypothyroidism and 6 of 357 were having secondary hypothyroidism. The prevalence rate of hyperthyroidism was 52.6 % (n=188) . The majority were subclinical hyperthyroidism (65.90 % , 124 out of 188) ,30.8 % (58 out of 188) had primary hyperthyroidism and 3% (6 out of 188) had secondary hyperthyroidism

Conclusion: In our study thyroid function abnormalities were noted in 15.73 % of all subjects. Thyroid disorders were common in age of >20 years than 20-40 ,40-60 and and >60 year categories. The prevalence of primary hypothyroidism was found to be higher than subclinical hypothyroidism, while in hyperthyroidism subclinical condition was predominant compared to primary hyperthyroidism.

Keywords: Prevalence, thyroid dysfunction, Hypothyroidism, Hyperthyroidism, Subclinical Hypothyroidism, Subclinical Hyperthyroidism, secondary hypothyroidism

INTRODUCTION

Thyroid is a small, butterfly-shaped gland located in the mid-line of the neck, anterior to the trachea and inferior to the larynx (1). Thyroid disorders are one of the most common endocrine disorders world wide and its prevalence diverges widely on the basis of geographic distribution (2). Previous studies reveal that almost 42 million Indians suffer from thyroid disorders.(3) .A recent study across 8 major cities of India revealed the prevalence of thyroid disorders as 11 % in the urban population compared with only 2% in the UK and 4.6% in the USA , with women being three



IMPACT OF POLYCYSTIC OVARIAN SYNDROME ON QUALITY OF LIFE AMONG STUDENT POPULATION

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ABSTRACT

Poly cystic ovarian syndrome (PCOS) is endocrine disorder of uncertain aetiology and complicated pathophysiology affecting at least 5-10% of female population worldwide. In this study, we aimed to evaluate the impact of PCOS and quality of life of students suffering from PCOS. A cross-sectional study was conducted on 76 students with PCOS using a Polycystic Ovarian Syndrome Quality of Life (PCOSQ) questionnaire to determine the quality of life. In our study the prevalence of PCOS was 21.92 \pm 4.25 of average age group of 22.3 (\pm 2.8) years. Menstrual irregularities had severe negative impact, while the major domains emotion, body hair, weight gain, and infertility had a moderate impact on the quality of life. A significant association was observed among sleeping habits and infertility problems ($p = 0.014$), physical activity, weight ($p = 0.032$), and menstrual problems ($p = 0.042$). Menstrual problems had a severe impact on the quality of life of students with PCOS. Most of the students had insufficient knowledge and non-compliant to the therapy. An awareness on the symptoms, and impact of PCOS on their cognitive functions need to be educated to improve their quality of life.

Key words. Poly cystic ovarian syndrome, quality of life, endocrine disorder.

INTRODUCTION

Polycystic ovarian syndrome (PCOS) is a complex endocrine and heterogeneous disorder affecting at least 5-10% of female population worldwide. The data on the prevalence of PCOS in India are scarce. According to National Health Portal of India, its prevalence in India is 10% with an incidence of 9.13% in south Indian population [1]. PCOS is a syndrome of uncertain aetiology and complicated pathophysiology with signs of hyperandrogenism, menstrual irregularity with anovulatory infertility. Women with PCOS have chronic inflammation often associated with obesity, altered hormone profile and insulin resistance leading to endothelial dysfunction, cardiovascular diseases and diabetes [2].

The World Health Organization (WHO) data suggests that approximately 116 million women (3.4%) are affected by PCOS globally. The global prevalence of PCOS varies from 5 to 18%, with an average prevalence of 276.4 cases per 100 000 people in Europe. Around 50% of women are not aware that they have PCOS or they have a delayed diagnosis. [3].



CYTOGENETIC BIO MONITORING USING MICRONUCLEI ASSAY IN PETROL PUMP WORKERS USING RAPID PAP STAINING TECHNIQUE-AN OBSERVATIONAL STUDY

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Abstract

The screening and monitoring the petroleum related cytotoxicity in petrol pump workers can be a useful tool to detect initial cellular damage. Aim of our study is to assess the micronuclei frequency in buccal epithelial cells of petrol pump workers. In 80 exposed petrol pump workers, micronuclei frequency (MN) was assessed using PAP stain and compared with unexposed workers of age 21-60 years. Statistical analysis was done using SPSS version 25.0. The Mann whitney U test was used to compare the mean MNC between the control and exposed group. MN of exposed population with habits of smoking and tobacco chewing showed significantly high frequency than the exposed group without habits. The MN was significantly higher in workers with longer duration of exposure. The micronuclei assay of exposed petrol pump workers paves a simple and easy method to identify patients with early genomic damage.

Keywords: Micronuclei frequency, genotoxicity, buccal mucosa, PAP stain

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THE EFFECT OF FRACTIONS OF *INDIGOFERA ASPALATHOIDES* LEAF EXTRACT ON EXTEND OF LIPID PEROXIDATION AND ANTIOXIDANT STATUS IN DMBA INDUCED HAMSTER BUCCAL POUCH CARCINOMA.

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Keywords:

Oral cancer, *Indigofera aspalathoides*, lipid peroxidation, Total antioxidant capacity, DMBA

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ABSTRACT: Oral cancer is the sixth leading cancer globally and the leading carcinoma in the Indian subcontinent. The relatively high incidence is due to usage of tobacco, and exposure to carcinogens are frontrunners of oxidative stress-induced DNA damage. The practice of chemopreventive agents is considered to be alternative oral carcinoma. A study on novel natural chemo preventive agent-*Indigofera Aspalathoides* was undertaken to evaluate its preventive chemo effect. Male Syrian Golden hamsters aged 10-12 weeks and weighing about 80-100 g were selected. Group I were control; Group II hamsters were given Intragastric administration of ethanolic fraction of IA; Groups III had Intragastric administration of chloroform fraction of IA, Group IV had Intragastric administration of E IA + DMBA, Group V had DMBA + Intragastric administration of CIA, and Group VI with DMBA alone. Total antioxidant power and extend of lipid peroxidation was measured by gold standard methods. Our study suggests that both EIA and CIA had a significant anticancer and preventive chemo effect against squamous cell carcinoma. Elevation in the extent of lipid peroxidation and the decrease in the levels of antioxidants were observed in the plasma of DMBA alone treated animals. This study suggests that elevation in the extent of lipid peroxidation and the decrease in the levels of antioxidants were observed in the plasma of DMBA alone treated animals.

INTRODUCTION: Oral cancer refers to a subgroup of head and neck malignancies that develop at the lips, tongue, salivary gland, gingiva, floor of the mouth, oropharynx, buccal surfaces and

other intra-oral locations¹. Oral cancer is estimated by World Health Organisation to be the sixth most cancer worldwide. In India and other Asian countries, oral and oropharyngeal carcinoma comprises up to half of all malignancies. The predictability of oral cancer in all ages has been projected to increase by 2030.

Challenges focus on the most critical initiator and a risk factor for the development of oral cancer alcohol consumption in males and tobacco chewing. Although drinking and smoking are

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

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Original Article

Comparison of whole blood potentiometry using arterial blood gas analyser at the intensive care unit with laboratory-based serum sodium and potassium estimation in critically ill patients

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Show more  Share  Cite<https://doi.org/10.1016/j.mjafi.2023.12.007> [Get rights and content](#) 

Abstract

Background

Electrolyte measurement in critically ill patients is a crucial investigation guiding the management of the patients. Accuracy of the results and rapid turnaround time are hence very important in the analysis of electrolytes. In our study, we aim to compare two methods of electrolyte concentration measurement by direct ion-selective electrodes (direct ISEs) using patient whole blood sample in the intensive care unit

Serum levels of ceruloplasmin and magnesium in polycystic ovarian syndrome: a cross sectional study

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Abstract

Aim: Polycystic ovarian syndrome (PCOS) is the most common endocrine condition, affecting 5–7% of reproductive-age women worldwide. It is associated with low-grade chronic inflammation, insulin resistance, and metabolic syndrome. Studies have shown ceruloplasmin (Cp) as an independent risk factor for metabolic syndrome and magnesium (Mg), which is required for proper glucose utilization. This study aimed to compare the serum Mg and Cp in PCOS and healthy women and correlate their levels with changes in biochemical, hormonal, and gynaecological aspects of PCOS.

Methods: The study comprised 98 women diagnosed with PCOS using the Rotterdam criteria and 75 age-matched healthy control subjects. The level of serum Cp and Mg were determined using Somani Ambade colorimetric method and methylthymol blue method respectively.

Results: Serum Cp was higher and Mg levels were lower significantly in PCOS patients in comparison with controls. Mg was inversely correlated with fasting blood glucose and directly correlated with follicle-stimulating hormone (FSH). Cp was inversely correlated with prolactin and thyroid-stimulating hormone. Multiple regression analysis revealed that Cp correlates with both the level of luteinizing hormone (LH) and LH/FSH ratio, whereas serum Mg did not have a significant correlation with any of the clinical variables. Logistic regression analysis revealed elevated Cp, antral follicle count (AFC), body mass index (BMI), weight, and irregular menses increase the risk of developing PCOS, whereas Mg was not a risk factor. However, high LH and LH/FSH ratios were risk factors for hypomagnesemia. In conclusion, serum Cp levels in PCOS may be evaluated as an additional risk factor in association with AFC, BMI, weight, and irregular menses.

Conclusions: Mg deficiency and high Cp play an important etiological role in PCOS pathogenesis. Thus, research evaluating dietary interventions and supplementation is warranted.

Keywords

Polycystic ovary syndrome, magnesium, ceruloplasmin

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MEGALOBLASTIC ANAEMIA THE COMMONEST CAUSE OF PANCYTOPENIA IN ADULT POPULATION, A DESCRIPTIVE STUDY IN A TERTIARY CARE CENTER

Dr. Simi Sidharthan
Dr. Shameem Ummer Ali
Dr. Prabhalakshmi

Keywords

Megaloblastic anaemia, pancytopenia, peripheral smear, bone marrow aspiration, trephine biopsy

Abstract

Background

Pancytopenia is defined as reduction of all three formed elements blood like Rbcs, Wbcs and platelets below the normal reference ranges. It is the manifestation of a number of disease processes affecting the bone marrow. Aim to identify the various causes of pancytopenia in adult population by bone marrow examination, then the most common cause of pancytopenia and to find the frequency the most common cause of pancytopenia in relation to age and sex. This is two years description study.

Methods

Peripheral smears, buffy coat smears, marrow aspiration smears and trephine biopsies of thirty six cases were studied. Special stain done for suspicious cases of leukemia and lymphoma. Relevant clinical history and investigations were collected. Pediatric cases and patients on chemotherapy were excluded from this study.

Results

Megaloblastic anaemia was the most common cause of Pancytopenia followed by Aplastic anaemia. Female are more common than male. Common among elderly population in their sixth decade. Peripheral smear showed characteristic features like macrocytes, macroovalocytes and hypersegmented neutrophils. Erythroid hyperplasia was seen in 18 cases of megaloblastic anaemia. Both peripheral smear and bone marrow findings were statistically significant.

Conclusion

Bone marrow aspiration and trephine biopsy are mandatory for the diagnosis of the various causes of pancytopenia. Macroovalocytes and hypersegmented neutrophils in peripheral smear, erythroid hyperplasia with megaloblastic maturation helps in definitive diagnosis of Megaloblastic anaemia. Comprehensive clinical and hematological study on pancytopenia cases is needed to identify the cause with certainty.

Pulmonary Tuberculous Lesions: An Autopsy Study in Central Kerala, India

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Abstract

Introduction: Tuberculosis (TB) is a leading cause of mortality and morbidity in India. While India is moving towards ending TB, estimating the TB burden is still a challenge. This study aims to assess the prevalence of pathologically active TB in the lungs of deceased persons undergoing autopsy.

Methods: The study group consisted of all cases undergoing autopsy during the study period (May 2021-October 2022). Tissue bits from the apex of both lungs were collected during the autopsy. Gross pathological examination of both lungs and microscopy of tissue bits were done. Proportion and 95% confidence intervals were estimated for the prevalence of pathologically active TB. A chi-square test was applied to determine the factors associated with pathologically active TB.

Results: A total of 311 subjects were included in the study, of which 244 were male (78%), and the mean age was 51.32 (± 15.9) years. The most frequent cause of autopsy was road traffic accidents, followed by death due to hanging. The proportion of pathologically active TB was estimated to be 2.89% (95%CI: 1.53%-5.41%). Nucleic Acid Amplification Test (NAAT) testing was done for a subset of 51 specimens, in which *Mycobacterium tuberculosis* was detected in only one case (1.96% (95%CI: 0.05%-10.45%)). Factors associated with the detection of lesions of TB were smoking, alcohol use, and prior history of TB.

Categories: Forensic Medicine, Pathology, Infectious Disease

Keywords: forensic autopsy, "granuloma", kerala, prevalence study, tuberculosis

Introduction

Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis* (MTB). Globally, for a long time, TB was among the top 10 causes of death; however, it is now placed outside the top 10 for both the World Health Organisation (WHO) and Global Burden of Disease (GBD) estimates [1,2]. In addition to mortality, TB is also a leading cause of morbidity, being ranked ninth in the WHO list of top 10 causes of disability-adjusted life years (DALYs) for 2019 [3].

India is the top TB burden country in the world, with more than a quarter of the global incidence and global deaths due to TB occurring in India [4]. As per the Global TB Report 2023, an estimated 2.83 million people developed TB in India in 2022. As per the National TB Prevalence Survey of India, the highest estimate of prevalence is 534 per 100,000 population in Delhi, and the lowest is 115 per 100,000 in Kerala [5].

The End TB strategy is a highly ambitious program that aims at ending the global TB epidemic [6]. To achieve this, TB programs would have to diagnose and treat a very high proportion of cases. It is also necessary to have good estimates of the TB burden in the community. WHO has standardized TB prevalence study methodologies. However, these studies are time-consuming and costly [7]. The prevalence of TB infection in a community is estimated by doing tuberculin skin tests (TSTs) or Interferon Gamma Release Assays (IGRAs), which detect latent TB infection, and by conducting national population-based surveys or TB prevalence surveys [8].

It is estimated that Kerala has had a decline in the incidence of TB by 47% from 2015 to 2021 [9]. However, there is a lack of objective measures to show the decline. The state has not been able to take up state-specific prevalence studies to estimate the prevalence of TB so far, and the only data available is from the national TB prevalence study. In this context, it is hypothesized that the burden of pulmonary TB in Kerala could be estimated by the examination of lung samples obtained during autopsy, which is feasible and inexpensive.

Materials And Methods

This cross-sectional study was conducted in the Department of Forensic Medicine and the Department of

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Histopathological Profile of Lung Lesions- An Autopsy Study at a Tertiary Care Centre, Kerala, India

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ABSTRACT

Introduction: Autopsy plays a crucial role in understanding and identifying pulmonary pathology, encompassing non neoplastic lesions, neoplastic conditions and the secondary implications of the lungs in terminal events of cardiovascular diseases. Pathological analysis confirms diagnosis and identifies the prevalence of lesions, contributing significantly to medical understanding and patient care.

Aim: To estimate the prevalence of lung pathology in autopsy specimens through Histopathological Examination (HPE).

Materials and Methods: A cross-sectional one-year study was conducted to determine the histopathological alterations in 132 lung autopsy specimens from Medicolegal autopsies received in the Department of Pathology at a tertiary care centre in Government Medical College, Cochin, Kerala, India from January 2021 to December 2021. Autopsy specimens of the lung were fixed in 10% formalin. Following gross examination, tissue sections were processed with paraffin and subjected to staining, with microscopy findings recorded. The data was numerically coded and entered into a Microsoft Excel spreadsheet. Statistical Package for Social Sciences (SPSS) version 21.0 was used for descriptive statistics and graphical representations of findings.

Results: The mean age of the study population, comprising 132 autopsy cases, was 49.41 ± 52.12 years and the male-to-female ratio was 3.71:1. Most cases 97/132 (73.50%) involved sudden deaths where the cause remained unknown. Significant microscopic findings found in 117 (88.63%) cases were as follows: Pulmonary oedema and congestion: 61 (46.21%), Pneumonia: 17 (12.87%), Diffuse Alveolar Damage (DAD): 12 (9.09%), Chronic venous congestion: 8 (6.06%), Tuberculosis: 7 (5.30%), Emphysema: 7 (5.30%), Pulmonary fibrosis: 1 (0.75%), Fat embolism: 1 (0.75%) and Pulmonary arterial hypertension: 1 (0.75%). Neoplastic lesions were identified in 7 (5.30%) cases, with primary lung cancers accounting for 3 (2.27%) cases. There were 10 cases of Real-time Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR), positive Coronavirus Disease 2019 (COVID-19) autopsies, of which 6 (60%) exhibited DAD, while 4 (40%) showed changes of bronchopneumonia.

Conclusion: Non neoplastic lesions such as pulmonary oedema, DAD and infections contributed to mortality in most cases. DAD was the most common lung finding in more than half of COVID-19 deaths. The prevalence of pulmonary neoplastic lesions in autopsies underscores their epidemiological significance in a particular geographical area.

Keywords: Coronavirus disease 2019, Diffuse alveolar damage, Lung autopsy, Pneumonia, Tuberculosis

INTRODUCTION

Autopsy is considered the definitive diagnostic test, maintaining its status as the gold standard for determining the cause of death. Autopsy pathologists are tasked with investigating a broad spectrum of sudden, unexpected and clinically unexplained deaths stemming from various natural causes [1]. Diagnosing lung diseases can pose a significant challenge to clinicians, even with access to advanced diagnostic techniques. Timely pathological diagnosis, complemented by clinical and radiological observations, are vital for enhancing patient survival [2]. The rapid progression of the disease results in less time for diagnosis; many lesions remain unidentified until after the patient has died and an autopsy has been performed [3].

Examining the lungs during an autopsy provides crucial insights into various patterns of lung injury, including DAD, stages of fibrosis, stages of interstitial pneumonitis, infectious processes and other specific pathologies. Through gross examination, valuable information is obtained about pleural lesions, the presence of collapsed or hyperinflated lungs, scarring, fibrosis, bullae, consolidation, nodules, infarction, all of which offer hints to establish a diagnosis [4]. The patterns of injury indicate damage to lung structures such as the alveolocapillary membrane, airways and blood vessels, either individually or in combination. Histologically, many diseases with distinct causes show similar tissue reactions, aiding in compiling a comprehensive list of potential diagnosis. Additionally, different disease

states can affect various combinations of pulmonary microanatomy simultaneously, with conditions primarily targeting the pulmonary interstitium often also damaging small airways and vice versa [4].

Postmortem analysis of lung specimens provides valuable insights into the diverse factors contributing to prevalent respiratory infections such as bronchitis, bronchopneumonia and other types of pneumonia [5]. Some cases of active tuberculosis are not identified until after the patient has died and an autopsy has been performed [6]. Pulmonary oedema arises from fluid accumulation in the interstitium and alveoli of the lungs, which can be caused by inherent lung issues or systemic factors. It is traditionally categorised into two types: cardiogenic, resulting from acute left ventricular failure and manifesting as high-pressure oedema typically triggered by events like myocardial infarction; and non cardiogenic, characterised by low-pressure fluid build-up and arising from acute lung injury or conditions such as Acute Respiratory Distress Syndrome (ARDS) [7].

The COVID-19 infection leads to either localised or widespread inflammation in the alveoli and interstitial spaces of the lungs, causing respiratory failure primarily due to DAD and severe capillary congestion, which is the main cause of mortality [7]. Bronchopneumonia and organising pneumonia frequently manifest in patients with prolonged COVID-19 illness duration [8]. The features of COVID-19 infection include the presence of fibrinous exudates, hyaline membrane deposition, hyperplasia of type II pneumocytes and the infiltration of lymphocytes, indicative of a transition from



THE SPECTRUM OF GALLBLADDER PATHOLOGY AT A TERTIARY CARE HOSPITAL : A RETROSPECTIVE STUDY

Histopathology

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ABSTRACT

Background: Gallstones are the commonest biliary pathology, the incidence ranging from 10% to 20% of the world population. Majority of biliary tract disease is attributable to cholelithiasis over 95%. Gallbladder stones are known to produce various histopathological changes in the gallbladder. **Aim:** To study spectrum of gallbladder diseases in cholecystectomy specimens and the incidence of various neoplastic and non neoplastic lesions occurring in gallbladder. **Materials and Methods:** The study was conducted from January 2020 to January 2023 in the Department of Pathology in our institution. A total of 200 cases of cholecystectomy specimens were evaluated. **Results:** Gallstones and associated diseases were more common in women within 4th to 5th decade, with a maximum number of patients being 41 to 50 years. Histopathologically the most common diagnosis was chronic cholecystitis followed by acute or chronic cholecystitis. There were 6 cases of acute cholecystitis, 5 cases of cholelithiasis, 3 cases of choledochal cysts and one case of carcinoma. In chronic cholecystitis and cholelithiasis female preponderance was observed while in all the other lesions male predominance was seen. Gallstones were present in 132 cases and significantly associated with various lesions. Pigment stones were most common. The present study carried out in our institution showed gallbladder malignancy was uncommon and was seen only in one case. **Conclusion:** Majority of the gallbladder lesions are inflammatory in origin, of which the most common disease being chronic cholecystitis in female of 30–40 years presenting with abdominal pain. Pigmented gall stones were found to be the most common etiology of chronic cholecystitis and malignancy of the gallbladder in this population is a rare occurrence.

KEYWORDS

Gallbladder, Carcinoma, Histopathology

INTRODUCTION

Gallstone disease is a common health problem worldwide. It is affected by variety of non neoplastic and neoplastic lesions.¹ Over 95% of biliary tract disease is attributable to cholelithiasis (gallstones). Cholelithiasis produces a variety of histopathological changes in gallbladder mucosa such as acute inflammation, chronic inflammation, cholelithiasis, hyperplasia and carcinoma.² It is also one of the predisposing factors for the development of cancer of the gallbladder. Most of the times it is commonly diagnosed as an incidental histological finding following cholecystectomy for gallstone disease.³ It is important to analyze the histopathological changes associated with the gallbladder disorders in order to identify the incidence, prevalence, distribution as well as the histomorphological features. This study is directed with these objectives.

MATERIALS AND METHODS

The present histopathological study was a prospective study which includes a detailed analysis of all cholecystectomy specimens presenting at the Department of Pathology, between January 2020 and January 2023. The cases were drawn from Clinical Department of the hospital attached to Medical College. The age and sex of the patient, site of biopsy and other relevant clinical data were recorded. Patients of all ages were considered for the present study.

Statistical Analysis

Data regarding various etiologies of gallbladder lesions was collected and analyzed using statistical tools. Chi-square test will find association between spectrums of lesions. SPSS will be used for statistical analysis.

RESULTS

Total 200 cholecystectomy specimens were studied for a period of 3 years. Gallstones and associated diseases were more common in women within 4th to 5th decade as compared to men. The age of patients varied from 17 to 83 years, with a maximum number of patients being 41 to 50 years. (Figure 1)

In chronic cholecystitis and cholelithiasis female preponderance was observed while in all the other lesions male predominance was seen. Gallstones were present in 132 cases and significantly associated with various lesions. Pigment stones were most common, followed by cholesterol and mixed stones. Histopathologically, (Table 1) the most common diagnosis was chronic cholecystitis followed by acute or

chronic cholecystitis. There were 6 cases of acute cholecystitis, 5 cases of cholelithiasis, 3 cases of choledochal cysts and one case of carcinoma. The present study carried out in our institution showed gallbladder malignancy was uncommon and was seen only in one case which was diagnosed as adenocarcinoma. (Figure 2)



Figure-1; Bar diagram showing gender distribution in age groups

Table-1; Spectrum of gallbladder lesions

HP lesions	Present study
Acute cholecystitis	3.5%
Chronic cholecystitis	82%
Acute on chronic cholecystitis	10%
Choledochal cysts	1.5%
Cholelithiasis	2.5%
Carcinoma	0.5%

DISCUSSION

The term cholecystitis refers to a group of disorders that vary in clinical, pathogenetic and pathological characteristics. Characterization of inflammatory pattern helps the pathologists to confirm the diagnosis. Out of 200 cases, 199 cases were non-neoplastic or inflammatory lesions and one case was malignant lesions. In all 82% of the cases were chronic cholecystitis. Most of the cases of chronic cholecystitis were associated with cholelithiasis. Chronic acalculous cholecystitis was much less common in our study. In the present study of 200 cases, there were 93 (46.5%) men and 107 (53.5%) women, which was consistent with Narendra et al.,⁴ Selvi et al.,⁵ and Memon et al.⁶ Out of 200 cases 77% patients were complaining of pain in the epigastrium, followed by pain and vomiting (32%). None of the

The Histopathological Spectrum of Gastrointestinal Endoscopic Biopsies in a Tertiary Care Hospital

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ABSTRACT

Background

Gastrointestinal tract disorders are one of the most commonly encountered problems in the clinical practice. A variety of disorders can affect the gastrointestinal tract. For making the exact diagnosis, and for further management, along with biopsy, endoscopy plays an important role.

Aim

To determine the spectrum of histopathological lesions of gastrointestinal tract. Materials and Methods

A retrospective study was conducted in the Department of Pathology, from January 2020 to January 2023 (3 years).

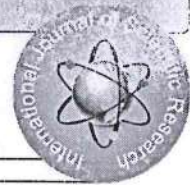
Results

A total 278 endoscopic biopsies were evaluated. Out of which, 18 were from esophagus, 232 cases were from gastric, 12 were from duodenum and 16 were colorectal biopsies. Among 18 cases of esophageal biopsies, 12 cases were of non-neoplastic and 6 cases were of neoplastic nature. Among the gastric biopsies, 229 cases were non-neoplastic and 3 cases were of neoplastic nature. Among 12 cases of duodenum biopsies, all cases were non-neoplastic, of which chronic non-specific duodenitis (66.66%) was the commonest. Among colorectal biopsies, the most common were non-neoplastic lesions and the most common malignancy was adenocarcinoma.

Conclusion

Correlation of endoscopy and histopathological examination of biopsy play an important role in diagnosis and management of gastrointestinal tract disorders. Histopathology is the gold standard for the diagnosis of endoscopically detected lesions of the GI tract.

Keywords: Endoscopy, Histopathology, GIT.



HISTOPATHOLOGICAL SPECTRUM OF LESIONS IN FALLOPIAN TUBE – A RETROSPECTIVE STUDY

Pathology

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ABSTRACT

Background – Fallopian tubes are one of the most common surgical specimen received in a Pathology laboratory. As the most extra uterine high grade serous carcinomas arise in tube increased attention has been received in fallopian tube histopathology. The aim of this study to study various spectrum of histopathological lesions in surgically resected specimens of fallopian tube and to identify the prevalence of lesions in various age groups. **Materials & Methods** – About 184 specimens of fallopian tubes were studied retrospectively which were received in our department either as tubectomy specimens or along with hysterectomy specimens. **Results** – Ectopic pregnancy (19.6%) was the most common pathology seen followed by acute salpingitis (13.1%). One case of tubal adenocarcinoma and one case of metastatic carcinoma was present in our study. **Conclusion** – Even though most of the findings are clinically not significant, careful examination of fallopian tube is necessary in patient care and accurate diagnosis is critically important.

KEYWORDS

Fallopian tube, Carcinoma, Histopathology

INTRODUCTION

Even from the embryological development fallopian tube has a very complex anatomy, starting from its vascular structure to its ciliated microstructure. The fallopian tube is a tubular hollow structure which measures about 11–12 cm in length. It runs throughout the apex of the broad ligament and spans the distance between the uterine cornus and the ovary. The fallopian tubes are one of the most common specimen received in the pathology laboratory. It can be examined either as salpingectomy specimen or along with hysterectomy or oophorectomy specimen. A wide range of disorders can be ruled out in this which has to be examined carefully.

MATERIALS AND METHODS

The data was collected retrospectively from the specimens and the histopathological slide sections that has been send and examined in our Pathology department during the period of January 2021 to October 2022. A total of 184 specimens were examined which were either salpingectomy specimen or along with hysterectomy or oophorectomy specimen. Gross and microscopic evaluation with Haematoxylin and Eosin stain were conducted in all the specimens and was correlated with other parameters.

Table 1. Spectrum of lesions

Fallopian tube Pathologies	Number of cases
Normal	70
Ectopic Pregnancy	36
Acute Salpingitis	24
Chronic Salpingitis	15
Paratubal cyst	17
Hydrosalpinx	13
Haematosalpinx	02
Endometriosis	03
Tumours	
Benign - Cystadenoma	02
Malignant –	
Primary carcinoma	01
Metastatic carcinoma	01
Total	184

RESULTS

A total of 184 specimens consisting of various gynecological lesions were studied thoroughly. The clinical diagnosis was uterine fibroid in majority of the cases followed by ovarian diseases. Most common age group of tubal lesions was 31–40 years in which 31.6% cases were

seen followed by 41–50 years of age group in which 28.9% cases were seen.

Abnormal pathological findings of the fallopian tube comprised of ectopic pregnancy, acute and chronic salpingitis, hydrosalpinx, hematosalpinx, endometriosis, paratubal cyst, cystadenoma and tumors (Table 1). In 38.2% cases, fallopian tubes were unremarkable.

Maximum cases were that of ectopic pregnancy (Fig 1) which comprised of 19.6% (36/184) cases. The majority of the cases were seen in the age group of 31–40 years. All cases of ectopic pregnancy was associated with chronic salpingitis in the same tube.

The next major pathology observed was acute salpingitis, constituting 13.1% (24/184) of cases. The majority of the cases of acute salpingitis were seen in the age group of 41–50 years. Chronic salpingitis was observed in 8.1 % (15/184) of cases. In majority of cases, acute salpingitis was found as an incidental finding in tubes removed along with other gynecological surgical procedures for treating various gynecological disorders.

The next major group was of paratubal cysts, constituting 9.3% (17/184) of cases. The majority of the cases were seen in the age group of 41–50 years.

Hydrosalpinx was seen in 13 cases followed by haematosalpinx and endometriosis in 2 and 3 cases respectively. 2 cases of cystadenoma was also observed.

One case each of primary fallopian tube adenocarcinoma (Fig 2) and a metastatic carcinoma (poorly differentiated endometrial carcinoma) (Fig 3) was seen in our study which was diagnosed in a 58 year old and 60 year old each respectively.

DISCUSSION

In this study, 70 (38.2%) cases were reported unremarkable and 114 (61.7%) cases were reported having tubal pathology. In our study, tubes with pathology has outnumbered the cases with unremarkable tubes which was correlating with studies done by Gon et al¹, Lakshmi et al² and Arora et al³.

The most common histopathological finding in this study is ectopic pregnancy (19.6%). The incidence of ectopic pregnancy was higher in this study. Bagwan et al.⁴ observed almost similar incidence of ectopic pregnancy (11.79%). Most of the patients in this study were in the age group of 31–40 years, with 36 cases, which was more when compared with the study by Dahiya et al.⁵ in which, most of the cases were between the age group of 25 and 29 years.

Correlation of Clinico- Histopathological Subtypes of Leprosy with Quantification of Langerhans Cells in Skin Lesion by Immunostaining

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Abstract: **Introduction:** Leprosy is a leading cause of physical disability due to weakness of muscles and loss of sensation. Due to the difference in immune response in the various forms of leprosy, Langerhans cells (antigen presenting cells) in the skin show a graded number in the various forms of leprosy patients. **Materials and methods:** a total of 44 cases were considered analysed by categorising according to Ridley and Joplin criteria. Paraffin blocks sections were stained with CD1A antibody using green coloured chromogen. Immuno - histochemistry studies were done using UltraVision LP detection system made by ThermoFisher Scientific. The number of epidermal, dermal and hair follicle Langerhans cells were counted. **Result:** There was no statistical significance between leprosy types on comparing with the dermal LC score. Whereas Mean value of epidermal LC score was significantly less in lepromatous leprosy (LL) (1.78) and was gradually increasing from borderline lepromatous type (BL) (2.44), borderline tuberculoid type (BT) (5.25) to tuberculoid leprosy (TT) (5.50). There was a statistically significant difference in number of Langerhans cells between BL and BT and between LL and TT ($p=0.000$). **Conclusion:** Progressive reduction in the number of Langerhans cells from tuberculoid subtype to lepromatous subtype was noted. Atrophy, epithelioid cells, giant cells, and nerve changes were seen more in tuberculoid pole than lepromatous pole. There is a statistically difference in the number of Langerhans cells between BL and BT and between LL and TT.

Keywords: leprosy, CD1a, immunohistochemistry, Langerhans cells

INTRODUCTION

Infection by intracellular organism *Mycobacterium leprae* leads to host immune response which ranges from apparently none to severe manifestations resulting in a spectrum of clinical pathological manifestations in leprosy. The most common method of infection appears to be direct or indirect contact with infective patients of leprosy. In skin, although infections may possibly take place through respiratory and alimentary routes.¹ The transmission of leprosy is not yet fully understood.

After the anti-leprosy work in the country has been intensified, especially in the post-independence years after 1948 and particularly after the initiation of the National leprosy eradication program in 1955 by the Govt of India, the estimated number of cases has been rising. The main reason for the increase in the estimated number of cases is increased activity in the case finding program. A contributory factor in this respect is that, because of availability of the potent drugs for the treatment of the disease, an increase number of patients are voluntarily seeking treatment.

With various intervention introduced under NLEP in the last few years, number of new leprosy cases detected have come down to 75,294 in 2021-22 from 1,25,785 in 2014-15, accounting for 3.6% of global new leprosy cases.²

Though Leprosy is eliminated from India in a statistical point of view but from disease point of view it is still a challenge there are no active case finding strategies as it still depends on self-reporting or case detection at common health facility. There is a delay in self-reporting due to financial constraints and social stigma associated with the disease which can lead to hiding the disease. Sometimes ignorance about the disease can also lead to undetected cases in the rural setup.

Langerhans cells are important in pathogenesis of leprosy.³ Langerhans cells represent unique dendritic antigen presenting cells populating epidermis. They are important contributors to the ongoing immune response through cellular and humoral interactions.^{4,5} Langerhans cells make use of CD1a proteins to induce cellular immune response. There is marked variation in clinical, histological and immunological features of leprosy from tuberculoid pole

Fine-Needle Aspiration Cytopathology Correlation Study of Thyroid Nodule with the Postoperative Histopathological Reporting in a Rural Medical Setup

Rufus K. Sam Vargis, Tony Joe Peechatt, C. R. Raghuveer¹, M. S. Sharada, Arun Mathew Chacko², Arya Vijayan³

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Abstract

Background: Fine-needle aspiration cytology (FNAC) is the examination of cells that are obtained through a fine needle under vacuum. Due to the superior diagnostic reliability and cost-effectiveness of FNAC, American thyroid association had setup some guidelines stating that FNAC must be used as a diagnostic test initially before the ultrasonography and thyroid scintigraphy. This present study was undertaken to categorize and correlate all the thyroid FNAC samples according to the Bethesda system and for assessing the efficacy of the Bethesda reporting system in the preoperative evaluation of thyroid lesions. The major aim of study is to identify the nodules which require surgery and those benign nodules that can be observed clinically, thereby reducing the overall rate of thyroidectomy among patients with benign disorders. **Materials and Methods:** The present prospective study was conducted among 428 patients with thyroid lesions at a tertiary care rural medical set up. All the specimens were fixed in 10% formalin, and detailed gross examination was done. 3–10 tissue bits were selected from representative areas and all the bits were processed and stained with H and E stain. Cytological diagnoses were correlated with histopathology and the efficacy of The Bethesda System for Reporting Thyroid Cytopathology for reporting FNAC was estimated. **Discussion:** Out of 428 patients with thyroid lesions, 96 cases of histopathological specimens were collected. The histopathology lesions were divided into benign nonneoplastic, benign neoplastic, and malignant to study the gender, age group affected with these lesions and to calculate the association of malignancy with gender and age. The result showed that diagnostic tests are not significantly different with respect to sensitivity. Hence, FNAC is a reliable test for histopathology in diagnosis of thyroid lesions. In the present study, although the malignancy rate was higher among males, no association of gender and malignancy was not significant ($P > 0.05$). **Conclusion:** The Bethesda standardized system for reporting cytopathology improved the communication between pathologists and clinician promoting an interlaboratory agreement.

Keywords: Cytopathology and Bethesda system, fine needle aspiration cytology, histopathology

INTRODUCTION

The nodules of thyroid are the usual clinical findings, having a reported prevalence of around 4%–7% of the adult population with a 3–4 times higher prevalence in females.^[1] Thyroid nodules are clinically palpable when their size reaches more than 1 cm and those nodules which are clinically impalpable could be detected on ultrasonography or during the surgery.^[2] Most of the nodules are nonneoplastic, out of which only 5%–30% are malignant. Fine-needle aspiration cytology (FNAC),

which is the examination of cells that are obtained through a fine-needle under vacuum,^[3] FNAC is a safer, simpler, faster, cost-effective, and minimally invasive procedure, which is a worthy asset in the preoperative screening to readily diagnose and distinguish thyroid nodules as neoplastic and nonneoplastic lesions. The thyroid gland is enclosed by dense connective

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Nuclear morphometric study of malignant breast lesions with histopathological correlation in South Indian population

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Abstract:

Background: nuclear morphometric measurements like major axis, minor axis, nuclear area and nuclear perimeter vary according to malignant grades of breast carcinoma. **Materials and methods:** Diagnosis of malignant cases was done in 31 patients by correlation of clinical history, radiological findings, adequacy of smear, predominant patterns and individual cell cytomorphology. Morphometric values like major axis of nucleus, minor axis of nucleus, nuclear area and nuclear perimeter were measured using ProgresR capture pro 2.9.0.1 software. **Result:** 16 cases (51.61%) were diagnosed as grade 1, eight (25.80%) cases were grade 2, seven (22.58%) cases were grade 3 using Robinson's cytological grading. One-way ANOVA test showed that these cytodagnostic categories are significantly different from each other for the nuclear parameters. (p value < 0.01). **Conclusion:** as there is grey area in diagnosing breast lesions from FNAC, nuclear morphometry can be pivotal in prompt diagnosis and also improvement in mortality of patients with malignant breast carcinoma.

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Introduction

Breast cancer is the second most common cancer among women in India and accounts for 7% of global burden of breast cancer and one-fifth of all cancers among women in India.¹

A definitive cancer diagnosis is given in approximately two-thirds of screen detected cancers by fine needle aspiration cytology as a part of triple diagnosis. The other one-third requires further investigation to give the go-ahead for more extensive definitive surgery. The reason may be due to discordance with radiological findings, doubts about invasion, or a relatively bland cytology as in low-grade cancers, mainly lobular carcinoma of classic type and tubular carcinoma.²

Fine-Needle Aspiration Cytopathology Correlation Study of Thyroid Nodule with the Postoperative Histopathological Reporting in a Rural Medical Setup

Rufus K. Sam Vargis, Tony Joe Peechatt, C. R. Raghuvver¹, M. S. Sharada, Arun Mathew Chacko², Arya Vijayan³

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Clinicopathological Study of Fungal Infections at a Tertiary Hospital in Mangalore

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Abstract:

Background: Histopathological examination remains a vital diagnostic tool in mycology, particularly for rapid identification of fungal infections. This study focuses on the clinicopathological aspects of fungal infections in a tertiary care hospital, emphasizing the need for timely and accurate diagnostic techniques.

Aims and Objectives: The study aimed to determine the distribution of fungal infections based on age, sex, and organ involvement, and to assess the prevalence and characteristics of these infections within the patient population.

Methodology: Conducted over four years (2010-2013), the study analyzed 60 histopathological specimens, including clinically suspected and incidentally detected cases. Specimens were processed with standard procedures and special stains for improved identification of fungal elements. Clinical details were collected to aid in demographic and clinical analysis.

Results: Fungal infections were more prevalent in males (65%) compared to females (35%), with the 41-50 age group most commonly affected. The nasal cavity and sinuses were the primary sites of infection, followed by the hand and foot. Candida (23%) and Rhinosporidiosis (22%) were the most frequently identified pathogens. The study highlights significant gender disparities and age-related susceptibility.

Discussion: The results underscore the need for improved diagnostic methods and surveillance programs. The higher incidence of fungal infections in males and specific age groups suggests demographic factors play a crucial role. Advanced molecular diagnostics and serological assays are recommended to enhance early detection and treatment, especially in immunocompromised patients.

Fine-Needle Aspiration Cytopathology Correlation Study of Thyroid Nodule with the Postoperative Histopathological Reporting in a Rural Medical Setup

Rufus K. Sam Vargis, Tony Joe Peechatt, C. R. Raghuvier¹, M. S. Sharada, Arun Mathew Chacko², Arya Vijayan³

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Abstract

Background: Fine-needle aspiration cytology (FNAC) is the examination of cells that are obtained through a fine needle under vacuum. Due to the superior diagnostic reliability and cost-effectiveness of FNAC, American thyroid association had setup some guidelines stating that FNAC must be used as a diagnostic test initially before the ultrasonography and thyroid scintigraphy. This present study was undertaken to categorize and correlate all the thyroid FNAC samples according to the Bethesda system and for assessing the efficacy of the Bethesda reporting system in the preoperative evaluation of thyroid lesions. The major aim of study is to identify the nodules which require surgery and those benign nodules that can be observed clinically, thereby reducing the overall rate of thyroidectomy among patients with benign disorders. **Materials and Methods:** The present prospective study was conducted among 428 patients with thyroid lesions at a tertiary care rural medical set up. All the specimens were fixed in 10% formalin, and detailed gross examination was done. 3–10 tissue bits were selected from representative areas and all the bits were processed and stained with H and E stain. Cytological diagnoses were correlated with histopathology and the efficacy of The Bethesda System for Reporting Thyroid Cytopathology for reporting FNAC was estimated. **Discussion:** Out of 428 patients with thyroid lesions, 96 cases of histopathological specimens were collected. The histopathology lesions were divided into benign nonneoplastic, benign neoplastic, and malignant to study the gender, age group affected with these lesions and to calculate the association of malignancy with gender and age. The result showed that diagnostic tests are not significantly different with respect to sensitivity. Hence, FNAC is a reliable test for histopathology in diagnosis of thyroid lesions. In the present study, although the malignancy rate was higher among males, no association of gender and malignancy was not significant ($P > 0.05$). **Conclusion:** The Bethesda standardized system for reporting cytopathology improved the communication between pathologists and clinician promoting an interlaboratory agreement.

Keywords: Cytopathology and Bethesda system, fine needle aspiration cytology, histopathology

INTRODUCTION

The nodules of thyroid are the usual clinical findings, having a reported prevalence of around 4%–7% of the adult population with a 3–4 times higher prevalence in females.^[1] Thyroid nodules are clinically palpable when their size reaches more than 1 cm and those nodules which are clinically impalpable could be detected on ultrasonography or during the surgery.^[2] Most of the nodules are nonneoplastic, out of which only 5%–30% are malignant. Fine-needle aspiration cytology (FNAC),

which is the examination of cells that are obtained through a fine-needle under vacuum.^[3] FNAC is a safer, simpler, faster, cost-effective, and minimally invasive procedure, which is a worthy asset in the preoperative screening to readily diagnose and distinguish thyroid nodules as neoplastic and nonneoplastic lesions. The thyroid gland is enclosed by dense connective

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Nuclear morphometric study and its correlation in various breast lesions using FNAC

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Abstract

Background: Early detection through screening, effective investigative pathways and appropriate treatment have the ability to lessen breast cancer mortality rates. Thus the present study was undertaken to assess the role of morphometry on fine needle aspirates in accurate diagnosis of benign and malignant breast lesions. **Materials and methods:** 120 cases of Fine needle aspirates of breast lesions done at the Department of Pathology, Adichunchanagiri Institute of Medical sciences were take for nuclear morphometric study. Nuclear Morphometric parameters were measured using ProgresR capture pro 2.9.0.1 software. Data was expressed as mean values and percentage comparison between groups were done by unpaired t test and one way ANOVA test. **Results:** Nuclear parameters were significantly higher in malignant groups comparing benign ones (P value<.001) also between various cytodiagnostic categories (P value<.001). The Standard Deviation of these parameters is a quantitative measurement of nuclear pleomorphism, which was significantly lower in benign cases. **Conclusion:** Morphometric analysis of nuclear parameters can be used as an adjunct to FNAC for diagnosis of benign and malignant lesions, differentiating various cytodiagnostic categories and malignant grades of breast with precision and accuracy.

Key words: Nuclear parameters, breast lesions, FNAC, nuclear pleomorphism.

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Introduction

Breast carcinoma is one of the most common malignancies in the female population and it also accounts for the major cause of cancer mortality among Indian woman. Early detection through screening, effective investigative pathways and appropriate treatment have the ability to lessen breast cancer mortality rates.

FNAC of the breast is very effective for the diagnosis of breast lesions but it is largely subjective and in a minority of cases an unequivocal diagnosis cannot be achieved due to the existence of grey zone between benign and malignant lesions. Lesions in gray zone are generally categorized as probably benign with atypia and probably malignant.¹

Nuclear morphometric study of malignant breast lesions with histopathological correlation in South Indian population

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Abstract:

Background: nuclear morphometric measurements like major axis, minor axis, nuclear area and nuclear perimeter vary according to malignant grades of breast carcinoma. **Materials and methods:** Diagnosis of malignant cases was done in 31 patients by correlation of clinical history, radiological findings, adequacy of smear, predominant patterns and individual cell cytomorphology. Morphometric values like major axis of nucleus, minor axis of nucleus, nuclear area and nuclear perimeter were measured using ProgresR capture pro 2.9.0.1 software. **Result:** 16 cases (51.61%) were diagnosed as grade 1, eight (25.80%) cases were grade 2, seven (22.58%) cases were grade 3 using Robinson's cytological grading. One-way ANOVA test showed that these cytodiagnostic categories are significantly different from each other for the nuclear parameters. (p value < 0.01). **Conclusion:** as there is grey area in diagnosing breast lesions from FNAC, nuclear morphometry can be pivotal in prompt diagnosis and also improvement in mortality of patients with malignant breast carcinoma.

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Introduction

Breast cancer is the second most common cancer among women in India and accounts for 7% of global burden of breast cancer and one-fifth of all cancers among women in India.¹

A definitive cancer diagnosis is given in approximately two-thirds of screen detected cancers by fine needle aspiration cytology as a part of triple diagnosis. The other one-third requires further investigation to give the go-ahead for more extensive definitive surgery. The reason may be due to discordance with radiological findings, doubts about invasion, or a relatively bland cytology as in low-grade cancers, mainly lobular carcinoma of classic type and tubular carcinoma.²



Acceptance Letter

Date: 04/08/2023

To,
Corresponding Author,
Dr Amjad Dastageer Mirzanaik, Al Azhar Medical College and Superspecialty Hospital,
Ezhalloor road, Thodupuzha, Idukki district, Kerala 685605, India.

Dear Doctor, I am happy to inform you, that your article title "**Nuclear morphometric study and its correlation in various breast lesions using FNAC**" has been accepted to be published in the coming **VOL 14, ISSUE 07, 2023.**

Journal is indexed in **Embase.**

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Dr Amjad Dastageer Mirzanaik, Associate Professor, Department of Forensic Medicine, Al Azhar Medical College, Thodupuzha, Kerala, India.

I once again congratulate you and hoping a nice association.

Editor in Chief

Yujie Zhu, MD, PhD

Department of Medicine/Cardiology University of Alabama at Birmingham
USA

- System generated letter, hence no signature required.

Fine-Needle Aspiration Cytopathology Correlation Study of Thyroid Nodule with the Postoperative Histopathological Reporting in a Rural Medical Setup

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Background: Fine-needle aspiration cytology (FNAC) is the examination of cells that are obtained through a fine needle under vacuum. Due to the superior diagnostic reliability and cost-effectiveness of FNAC, American thyroid association had setup some guidelines stating that FNAC must be used as a diagnostic test initially before the ultrasonography and thyroid scintigraphy. This present study was undertaken to categorize and correlate all the thyroid FNAC samples according to the Bethesda system and for assessing the efficacy of the Bethesda reporting system in the preoperative evaluation of thyroid lesions. The major aim of study is to identify the nodules which require surgery and those benign nodules that can be observed clinically, thereby reducing the overall rate of thyroidectomy among patients with benign disorders. **Materials and Methods:** The present prospective study was conducted among 428 patients with thyroid lesions at a tertiary care rural medical set up. All the specimens were fixed in 10% formalin, and detailed gross examination was done. 3–10 tissue bits were selected from representative areas and all the bits were processed and stained with H and E stain. Cytological diagnoses were correlated with histopathology and the efficacy of The Bethesda System for Reporting Thyroid Cytopathology for reporting FNAC was estimated. **Discussion:** Out of 428 patients with thyroid lesions, 96 cases of histopathological specimens were collected. The histopathology lesions were divided into benign nonneoplastic, benign neoplastic, and malignant to study the gender, age group affected with these lesions and to calculate the association of malignancy with gender and age. The result showed that diagnostic tests are not significantly different with respect to sensitivity. Hence, FNAC is a reliable test for histopathology in diagnosis of thyroid lesions. In the present study, although the malignancy rate was higher among males, no association of gender and malignancy was not significant ($P > 0.05$). **Conclusion:** The Bethesda standardized system for reporting cytopathology improved the communication between pathologists and clinician promoting an interlaboratory agreement.

Keywords: Cytopathology and Bethesda system, fine needle aspiration cytology, histopathology

INTRODUCTION

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Correlation of Clinico- Histopathological Subtypes of Leprosy with Quantification of Langerhans Cells in Skin Lesion by Immunostaining

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Abstract: **Introduction:** Leprosy is a leading cause of physical disability due to weakness of muscles and loss of sensation. Due to the difference in immune response in the various forms of leprosy, Langerhans cells (antigen presenting cells) in the skin show a graded number in the various forms of leprosy patients. **Materials and methods:** a total of 44 cases were considered analysed by categorising according to Ridley and Joplin criteria. Paraffin blocks sections were stained with CD1A antibody using green coloured chromogen. Immuno - histochemistry studies were done using UltraVision LP detection system made by ThermoFisher Scientific. The number of epidermal, dermal and hair follicle Langerhans cells were counted. **Result:** There was no statistical significance between leprosy types on comparing with the dermal LC score. Whereas Mean value of epidermal LC score was significantly less in lepromatous leprosy (LL) (1.78) and was gradually increasing from borderline lepromatous type (BL) (2.44), borderline tuberculoid type (BT) (5.25) to tuberculoid leprosy (TT) (5.50). There was a statistically significant difference in number of Langerhans cells between BL and BT and between LL and TT ($p=0.000$). **Conclusion:** Progressive reduction in the number of Langerhans cells from tuberculoid subtype to lepromatous subtype was noted. Atrophy, epithelioid cells, giant cells, and nerve changes was seen more in tuberculoid pole than lepromatous pole. There is a statistically difference in the number of Langerhans cells between BL and BT and between LL and LT.

Keywords: leprosy, CD1a, immunohisto chemistry, Langerhans cells

INTRODUCTION

Infection by intracellular organism *Mycobacterium leprae* leads to host immune response which ranges from apparently none to severe manifestations resulting in a spectrum of clinical pathological manifestations in leprosy. The most common method of infection appears to be direct or indirect contact with infective patients of leprosy. In skin, although infections may possibly take place through respiratory and alimentary routes.¹ The transmission of leprosy is not yet fully understood.

After the anti-leprosy work in the country has been intensified, especially in the post-independence years after 1948 and particularly after the initiation of the National leprosy eradication program in 1955 by the Govt of India, the estimated number of cases has been rising. The main reason for the increase in the estimated number of cases is increased activity in the case finding program. A contributory factor in this respect is that, because of availability of the potent drugs for the treatment of the disease, an increase number of patients are voluntarily seeking treatment.

With various intervention introduced under NLEP in the last few years, number of new leprosy cases detected have come down to 75,394 in 2021-22 from 1,25,785 in 2014-15, accounting for 53.6% of global new leprosy cases.²

Though Leprosy is eliminated from India in a statistical point of view but from disease point of view it is still a challenge there are no active case finding strategies as it still depends on self-reporting or case detection at common health facility. There is a delay in self-reporting due to financial constraints and social stigma associated with the disease which can lead to hiding the disease. Sometimes ignorance about the disease can also lead to undetected cases in the rural setup.

Langerhans cells are important in pathogenesis of leprosy.³ Langerhans cells represent unique dendritic antigen presenting cell populating epidermis. They are important contributors to the ongoing immune response through cellular and humoral interactions.^{4,5} Langerhans cells make use of CD1a proteins to induce cellular immune response. There is marked variation in clinical, histological and immunological features of leprosy from tuberculoid pole

A Comparative Study of Hematology Parameters Determined by Manual and Automated Method in the Diagnosis of Anemia

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Abstract: **Introduction:** Manual methods are low cost but labor intensive and peripheral smear examination alone carries disadvantages of interobserver variation and increased turnaround time. Hence it is important to compare the values generated by the automated method with findings of peripheral smear which will supplement each other in the diagnosis of anemia. **Objectives:** To compare the hematology parameters determined by manual and automated method in the diagnosis of anemia. **Materials and Methods:** First 200 EDTA blood samples with Hb < 12 gm/dl by automated method were included in the study population. After morphological categorization of anemia by peripheral smear, it was compared with values generated by automated hematology analyser Sysmex XS Series. The values generated by manual and automated method were then compared. **Results:** On Automated analysis 44 cases were Microcytic hypochromic, of which 42 cases (95.5%) were microcytic on peripheral smear and 2 cases (4.5%) were normocytic. Out of 14 macrocytic anemia by automated method, all were macrocytic in peripheral smear also. On statistical analysis p value was found to be less than 0.0001 according to chi square test implying significant association between parameters obtained by manual and automated method. Kappa Measure of Agreement between manual and automated method was 0.87 with a p value < 0.0001. So, there was statistically almost perfect agreement. **Conclusion:** Our study showed a significant association between the values generated by automated method and peripheral smear with an almost perfect agreement between two methods. Thus, the values generated by automated method is useful for the initial diagnosis of anemia and can be used as a screening tool for large population.

Keywords: anemia, peripheral smear, automated analysis.

INTRODUCTION

Anemia has now become a public health problem worldwide. A study among rural population in India showed that anemia was highest among young adults and elderly (42%) and lowest among children (8.69%)¹. Anemia is also a major threat among antenatal population. It can lead to many complications like premature birth and low birth weight. Anemia is a morbid condition that affects people of all age groups and iron deficiency remains as a major threat to global health.

Manual methods are generally low cost but they are labour intensive. In spite of the high capital cost, automated methods ensure rapid performance rates and

also permits testing of large volume of samples with a small number of laboratory workers. Hemoglobin concentration may be estimated by colourimetric method, specific gravity, iron content or by oxygen combining capacity. The packed cell volume (PCV) can be used as a simple screening test for anaemia, as a reference method for calibrating automated blood count systems, and as a rough guide to the accuracy of haemoglobin measurements. Morphology of RBC can be assessed by examining peripheral smear which helps in the morphologic classification of anemia as normocytic normochromic, macrocytic, microcytic hypochromic and dimorphic.²

Now these parameters are determined by electronic cell

An Immuno-Histochemical Study on Expression of ER - Beta in Colorectal Carcinoma in A Tertiary Care Centre in Thiruvananthapuram

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Abstract: **Introduction:** Evidence from preclinical studies indicates that expression of the ER beta demonstrates an inverse relationship with the presence of colorectal polyps and stage of tumors, and can mediate a protective response. Studies have shown that targeted activation of ER beta may represent a novel clinical approach for management of colorectal adenomatous polyps and prevention of colorectal carcinoma in patients at risk for this condition. The present study aims to estimate the proportion of negative ER-beta expression in colorectal carcinoma specimens received in the south Indian population. **Materials and methods:** 50 colectomy specimens with histopathological proven diagnosis of colorectal carcinoma were included in the present study. H&E sections were studied and tumor characteristics like histopathological type, invasion, differentiation, metastatic node were recorded. Formalin fixed paraffin embedded blocks of tumor were used for IHC staining using primary antibody - ERb. Data was collected using structured proforma and analysis done using appropriate statistical software (SPSS). **Results:** IHC of 64 cases had been done and were statistically analyzed. Majority of patients were in the age group of 50 to 75 years. Female sex predominated with 57.6% cases. Maximum cases were confined to rectum at 39%. 89% cases were adenocarcinomas among the histological subtypes, which had no significant association with loss of ERb expression. **Conclusion:** The study concludes that most of the CRC case occurs in the age group of 50 to 75 years, with rectum being the most common site and female preponderance. Moderately differentiated adenocarcinoma being the commonest subtype among the cases included in the present study. 71.9% cases had loss or decreased expression of ERb in their tumor tissue when compared to adjacent normal tissue and 28.1% cases had no loss of expression. There is no significant loss of ERb expression with histological subtype, degree of differentiation and advancing stage.

Keywords: Colorectal carcinoma, ER beta.

INTRODUCTION

Colorectal cancer (CRC) is the third most common cancer in men (663,000 cases, 10.0% of the total cancers) and the second in women (570,000 cases, 9.4% of the total cancers) worldwide. The annual incidence of CRC in India is about 4/100,000 and in Kerala it is about 5.5/100,000.¹ This increased incidence in Kerala is postulated to be due to the increased consumption of red meat in the state which is an established risk factor along with age, environmental factors- diet, smoking, sedentary lifestyle and genetic factors- FAP, Lynch syndrome and related non polyposis associated hereditary conditions. About 6% of all CRC are caused by the inheritance of mutated genes with high penetrance.² Gastrointestinal tumors can be divided into 4 major categories of carcinoma viz, adenocarcinoma, neuroendocrine tumor, neuroendocrine carcinoma and mixed neuroendocrine - non neuroendocrine tumor.

ER β is the predominant estrogen receptor expressed in normal colonic epithelium, with limited or no expression of ER α observed in the colon.³ ER β is thought to have a prominent role in the biological mechanisms of sex steroid action on colorectal tissue.⁴ ER β is the predominant estrogen receptor expressed in both normal and malignant colonic epithelium. However, during colon cancer progression, ER β expression is lost, suggesting that estrogen signaling may play a role in disease progression. ER β is also expressed in CRC although the expression is reduced during colonic tumor genesis as compared to normal tissue. ER β expression is associated with stage and grade of disease, and an inverse relationship between ER β expression and tumor progression has been reported in cell lines and clinical samples.^{5,6}

In post-menopausal women on hormone replacement

Role of Hematological Parameters in Diagnosis of Neonatal Sepsis

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Abstract: **Introduction:** Neonatal sepsis is one of the major causes of morbidity and mortality in the newborn, more so in the developing countries. The incidence of neonatal sepsis has been reported to be 30/1000 live births according to National Neonatal Perinatal Database. Certain neonatal characteristics are predictive of Early Onset Neonatal Sepsis (EOS). The objectives of this study were to perform haematological tests for detection of neonatal sepsis and to evaluate the validity of single and combined haematological parameters in case of proven septicaemia. **Methods:** 95 neonates admitted to NICU with signs suggestive of sepsis or who developed signs of sepsis while in the ward, were included in the present study. The neonatal sepsis screen included Total Leukocyte Count (TLC), raised micro-ESR, CRP, I/T Ratio >0.2, remained significant markers for early diagnosis of culture positive EOS (P<0.5). **Results:** Out of 95 newborns presenting with EOS, 46(48.4%) had positive blood culture. EOS was seen predominantly in preterm, males, LBW neonates. Among the various neonatal haematological parameters raised Micro-ESR, I/T Ratio >0.2 significant markers for early diagnosis of culture positive EOS (p<0.5). **Conclusion:** It is critical to diagnose sepsis early on and to rule out sepsis to avoid unnecessary antibiotic use. In predicting early onset newborn sepsis, a high index of suspicion combined with simple, cost-effective haematological screening measures is a sensitive and satisfactory approach.

Keywords: EOS, Haematological parameters, neonatal sepsis.

INTRODUCTION

Neonatal septicemia is a leading cause of mortality and morbidity during the neonatal period¹. By definition neonatal sepsis is defined as a clinical syndrome of bacteraemia with systemic signs and symptoms of infection in the first weeks of life. Illness can rapidly progressive so timely diagnosis of septicaemia is critical.² In developing countries, total neonatal deaths account for about 30% to 50%. Overall incidence of sepsis is 1-5 /1000 live births and mortality of untreated sepsis can be as high as 50%. In India incidence of sepsis is 38 per 1000 live births in tertiary care institutes and it contributes to 36% of deaths in hospitals³. According to Neonatal Perinatal Database (NNPD), incidence of neonatal sepsis is 30/1000 live births.¹

Common causes of neonatal septicaemia is Group B Streptococcal Disease in Europe and North America. In developing countries and tropical, Gram Negative organism is most common cause. In India according to NNPD Klebsiella pneumonia followed by Staphylococcus aureus is the most frequent causes.⁴

Immaturity of both cellular and humoral immune systems at birth leads to susceptibility of new born to infection. Particularly this feature is evident in preterm neonates.

Infection can be acquired from mother through transplacental route, ascending infection, during passage through an infected birth canal, or exposure to infected blood at delivery⁵.

Initial diagnosis of neonatal sepsis based on clinical signs and symptoms which are non specific as other non infective conditions like aspiration, asphyxia, and metabolic disorders⁶.

Neonatal sepsis is classified into Early onset neonatal sepsis (EONS) and Late onset neonatal sepsis (LONS). EONS is defined as onset of signs and symptoms within first 72 hours of life. LONS defined as clinical signs and symptoms occur after 72 hours of life. Before the diagnosis is confirmed, antibiotics therapy is commenced soon after onset of symptoms.⁶ The early initiation of appropriate antibiotics therapy results in successful outcome of bacterial infection.⁷

Neonatal sepsis can be of two types according to National Neonatology forum.¹

- A. Proven sepsis: newborn with clinical symptoms suggestive of sepsis and isolation of pathogens from blood, CSF

Correlation of Clinico- Histopathological Subtypes of Leprosy with Quantification of Langerhans Cells in Skin Lesion by Immunostaining

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Abstract: **Introduction:** Leprosy is a leading cause of physical disability due to weakness of muscles and loss of sensation. Due to the difference in immune response in the various forms of leprosy, Langerhans cells (antigen presenting cells) in the skin show a graded number in the various forms of leprosy patients. **Materials and methods:** a total of 44 cases were considered analysed by categorising according to Ridley and Joplin criteria. Paraffin blocks sections were stained with CD1A antibody using green coloured chromogen. Immuno - histochemistry studies were done using UltraVision LP detection system made by ThermoFisher Scientific. The number of epidermal, dermal and hair follicle Langerhans cells were counted. **Result:** There was no statistical significance between leprosy types on comparing with the dermal LC score. Whereas Mean value of epidermal LC score was significantly less in lepromatous leprosy (LL) (1.78) and was gradually increasing from borderline lepromatous type (BL) (2.44), borderline tuberculoid type (BT) (5.25) to tuberculoid leprosy (TT) (5.50). There was a statistically significant difference in number of Langerhans cells between BL and BT and between LL and TT ($p=0.000$). **Conclusion:** Progressive reduction in the number of Langerhans cells from tuberculoid subtype to lepromatous subtype was noted. Atrophy, epithelioid cells, giant cells, and nerve changes was seen more in tuberculoid pole than lepromatous pole. There is a statistically difference in the number of Langerhans cells between BL and BT and between LL and TT.

Keywords: leprosy, CD1a, immunohisto chemistry, Langerhans cells

INTRODUCTION

Infection by intracellular organism *Mycobacterium leprae* leads to host immune response which ranges from apparently none to severe manifestations resulting in a spectrum of clinical pathological manifestations in leprosy. The most common method of infection appears to be direct or indirect contact with infective patients of leprosy. In skin, although infections may possibly take place through respiratory and alimentary routes.¹ The transmission of leprosy is not yet fully understood.

After the anti-leprosy work in the country has been intensified, especially in the post-independence years after 1948 and particularly after the initiation of the National leprosy eradication program in 1955 by the Govt of India, the estimated number of cases has been rising. The main reason for the increase in the estimated number of cases is increased activity in the case finding program. A contributory factor in this respect is that, because of availability of the potent drugs for the treatment of the disease, an increase number of patients are voluntarily seeking treatment.

With various intervention introduced under NLEP in the last few years, number of new leprosy cases detected have come down to 75,394 in 2021-22 from 1,25,785 in 2014-15, accounting for 53.6% of global new leprosy cases.²

Though Leprosy is eliminated from India in a statistical point of view but from disease point of view it is still a challenge there are no active case finding strategies as it still depends on self-reporting or case detection at common health facility. There is a delay in self-reporting due to financial constraints and social stigma associated with the disease which can lead to hiding the disease. Sometimes ignorance about the disease can also lead to undetected cases in the rural setup.

Langerhans cells are important in pathogenesis of leprosy.³ Langerhans cells represent unique dendritic antigen presenting cell populating epidermis. They are important contributors to the ongoing immune response through cellular and humoral interactions.^{4,5} Langerhans cells make use of CD1a proteins to induce cellular immune response. There is marked variation in clinical, histological and immunological features of leprosy from tuberculoid pole

A Comparative Study of Hematology Parameters Determined by Manual and Automated Method in the Diagnosis of Anemia

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Abstract: Introduction: Manual methods are low cost but labor intensive and peripheral smear examination alone carries disadvantages of interobserver variation and increased turnaround time. Hence it is important to compare the values generated by the automated method with findings of peripheral smear which will supplement each other in the diagnosis of anemia. **Objectives:** To compare the hematology parameters determined by manual and automated method in the diagnosis of anemia. **Materials and Methods:** First 200 EDTA blood samples with Hb<12gm/dl by automated method were included in the study population. After morphological categorization of anemia by peripheral smear, it was compared with values generated by automated hematology analyser Sysmex XS Series. The values generated by manual and automated method were then compared. **Results:** On Automated analysis 44 cases were Microcytic hypochromic, of which 42 cases (95.5%) were microcytic on peripheral smear and 2 cases (4.5%) were normocytic. Out of 14 macrocytic anemia by automated method, all were macrocytic in peripheral smear also. On statistical analysis p value was found to be less than 0.0001 according to chi square test implying significant association between parameters obtained by manual and automated method. Kappa Measure of Agreement between manual and automated method was 0.87 with a p value <0.0001. So, there was statistically almost perfect agreement. **Conclusion:** Our study showed a significant association between the values generated by automated method and peripheral smear with an almost perfect agreement between two methods. Thus, the values generated by automated method is useful for the initial diagnosis of anemia and can be used as a screening tool for large population.

Keywords: anemia, peripheral smear, automated analysis.

INTRODUCTION

Anemia has now become a public health problem worldwide. A study among rural population in India showed that anemia was highest among young adults and elderly (42%) and lowest among children (8.69%)¹. Anemia is also a major threat among antenatal population. It can lead to many complications like premature birth and low birth weight. Anemia is a morbid condition that affects people of all age groups and iron deficiency remains as a major threat to global health.

Manual methods are generally low cost but they are labour intensive. In spite of the high capital cost, automated methods ensure rapid performance rates and

also permits testing of large volume of samples with a small number of laboratory workers. Hemoglobin concentration may be estimated by colourimetric method, specific gravity, iron content or by oxygen combining capacity. The packed cell volume (PCV) can be used as a simple screening test for anaemia, as a reference method for calibrating automated blood count systems, and as a rough guide to the accuracy of haemoglobin measurements. Morphology of RBC can be assessed by examining peripheral smear which helps in the morphologic classification of anemia as normocytic normochromic, macrocytic, microcytic hypochromic and dimorphic.²

Now these parameters are determined by electronic cell

Role of Hematological Parameters in Diagnosis of Neonatal Sepsis

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Abstract: **Introduction:** Neonatal sepsis is one of the major causes of morbidity and mortality in the newborn, more so in the developing countries. The incidence of neonatal sepsis has been reported to be 30/1000 live births according to National Neonatal Perinatal Database. Certain neonatal characteristics are predictive of Early Onset Neonatal Sepsis (EOS). The objectives of this study were to perform haematological tests for detection of neonatal sepsis and to evaluate the validity of single and combined haematological parameters in case of proven septicaemia. **Methods:** 95 neonates admitted to NICU with signs suggestive of sepsis or who developed signs of sepsis while in the ward, were included in the present study. The neonatal sepsis screen included Total Leukocyte Count (TLC), raised micro-ESR, CRP, I/T Ratio >0.2, remained significant markers for early diagnosis of culture positive EOS (P<0.5). **Results:** Out of 95 newborns presenting with EOS, 46(48.4%) had positive blood culture. EOS was seen predominantly in preterm, males, LBW neonates. Among the various neonatal haematological parameters raised Micro-ESR, I/T Ratio >0.2 significant markers for early diagnosis of culture positive EOS (p<0.5). **Conclusion:** It is critical to diagnose sepsis early on and to rule out sepsis to avoid unnecessary antibiotic use. In predicting early onset newborn sepsis, a high index of suspicion combined with simple, cost-effective haematological screening measures is a sensitive and satisfactory approach.

Keywords: EOS, Haematological parameters, neonatal sepsis.

INTRODUCTION

Neonatal septicemia is a leading cause of mortality and morbidity during the neonatal period¹. By definition neonatal sepsis is defined as a clinical syndrome of bacteraemia with systemic signs and symptoms of infection in the first weeks of life. Illness can rapidly progressive so timely diagnosis of septicaemia is critical.² In developing countries, total neonatal deaths account for about 30% to 50%. Overall incidence of sepsis is 1-5 /1000 live births and mortality of untreated sepsis can be as high as 50%. In India incidence of sepsis is 38 per 1000 live births in tertiary care institutes and it contributes to 36% of deaths in hospitals³. According to Neonatal Perinatal Database (NNPD), incidence of neonatal sepsis is 30/1000 live births.¹

Common causes of neonatal septicaemia is Group B Streptococcal Disease in Europe and North America. In developing countries and tropical, Gram Negative organism is most common cause. In India according to NNPD Klebsiella pneumonia followed by Staphylococcus aureus is the most frequent causes.⁴

Immaturity of both cellular and humoral immune systems at birth leads to susceptibility of new born to infection. Particularly this feature is evident in preterm neonates.

Infection can be acquired from mother through transplacental route, ascending infection, during passage through an infected birth canal, or exposure to infected blood at delivery⁵.

Initial diagnosis of neonatal sepsis based on clinical signs and symptoms which are non specific as other non infective conditions like aspiration, asphyxia, and metabolic disorders⁶.

Neonatal sepsis is classified into Early onset neonatal sepsis (EONS) and Late onset neonatal sepsis (LONS). EONS is defined as onset of signs and symptoms within first 72 hours of life. LONS defined as clinical signs and symptoms occur after 72 hours of life. Before the diagnosis is confirmed, antibiotics therapy is commenced soon after onset of symptoms.⁶ The early initiation of appropriate antibiotics therapy results in successful outcome of bacterial infection.⁷

Neonatal sepsis can be of two types according to National Neonatology forum.¹

- A. Proven sepsis: newborn with clinical symptoms suggestive of sepsis and isolation of pathogens from blood, CSF

An Immuno-Histochemical Study on Expression of ER - Beta in Colorectal Carcinoma in A Tertiary Care Centre in Thiruvananthapuram

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Abstract: **Introduction:** Evidence from preclinical studies indicates that expression of the ER beta demonstrates an inverse relationship with the presence of colorectal polyps and stage of tumors, and can mediate a protective response. Studies have shown that targeted activation of ER beta may represent a novel clinical approach for management of colorectal adenomatous polyps and prevention of colorectal carcinoma in patients at risk for this condition. The present study aims to estimate the proportion of negative ER-beta expression in colorectal carcinoma specimens received in the south Indian population. **Materials and methods:** 50 colectomy specimens with histopathological proven diagnosis of colorectal carcinoma were included in the present study. IHC sections were studied and tumor characteristics like histopathological type, invasion, differentiation, metastatic node were recorded. Formalin fixed paraffin embedded blocks of tumor were used for IHC staining using primary antibody - ERβ. Data was collected using structured proforma and analysis done using appropriate statistical software (SPSS). **Results:** IHC of 64 cases had been done and were statistically analyzed. Majority of patients were in the age group of 50 to 75 years. Female sex predominated with 57.6% cases. Maximum cases were confined to rectum at 39%. 89% cases were adenocarcinomas among the histological subtypes, which had no significant association with loss of ERβ expression. **Conclusion:** The study concludes that most of the CRC case occurs in the age group of 50 to 75 years, with rectum being the most common site and female preponderance. Moderately differentiated adenocarcinoma being the commonest subtype among the cases included in the present study. 71.9% cases had loss or decreased expression of ERβ in their tumor tissue when compared to adjacent normal tissue and 28.1% cases had no loss of expression. There is no significant loss of ERβ expression with histological subtype, degree of differentiation and advancing stage.

Keywords: Colorectal carcinoma, ER beta.

INTRODUCTION

Colorectal cancer (CRC) is the third most common cancer in men (663,000 cases, 10.0% of the total cancers) and the second in women (570,000 cases, 9.4% of the total cancers) worldwide. The annual incidence of CRC in India is about 4/100,000 and in Kerala it is about 5.5/100,000.¹ This increased incidence in Kerala is postulated to be due to the increased consumption of red meat in the state which is an established risk factor along with age, environmental factors- diet, smoking, sedentary lifestyle and genetic factors- FAP, Lynch syndrome and related non polyposis associated hereditary conditions. About 6% of all CRC are caused by the inheritance of mutated genes with high penetrance.²

Gastrointestinal tumors can be divided into 4 major categories of carcinoma viz, adenocarcinoma, neuroendocrine tumor, neuroendocrine carcinoma and mixed neuroendocrine - non neuroendocrine tumor.

ERβ is the predominant estrogen receptor expressed in normal colonic epithelium, with limited or no expression of ERα observed in the colon.³ ERβ is thought to have a prominent role in the biological mechanisms of sex steroid action on colorectal tissue.⁴ ERβ is the predominant estrogen receptor expressed in both normal and malignant colonic epithelium. However, during colon cancer progression, ERβ expression is lost, suggesting that estrogen signaling may play a role in disease progression. ERβ is also expressed in CRC although the expression is reduced during colonic tumor genesis as compared to normal tissue. ERβ expression is associated with stage and grade of disease, and an inverse relationship between ERβ expression and tumor progression has been reported in cell lines and clinical samples.^{5,6}

In post-menopausal women on hormone replacement



Surgery

POST THYROIDECTOMY HYPOCALCEMIA: RETROSPECTIVE STUDY IN RURAL AREA OF IDUKKI

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Anubha Mary Kondenkandath	Senior Resident, Department Of Pathology, Alazhar Medical College, Thodupuzha.
Nicholas Jacob	Assistant Professor, Department Of General Surgery, Alazhar Medical College, Thodupuzha.

ABSTRACT

Introduction: Thyroidectomy is a frequent operation performed worldwide. The most common complication following thyroid surgery is hypocalcemia, caused by transient or persistent hypoparathyroidism. This study aimed to investigate the prevalence of hypocalcemia after thyroidectomy and to identify potential risk factors. **Methods:** All thyroidectomies performed at Department of General and Laproscopic Surgery Alazhar Medical College Thodupuzha between 2018 and 2021 were retrospectively analyzed. Post-thyroidectomy hypocalcemia was evaluated in relation to risk factors such as age, sex, procedure type, and type of thyroid disease. Data were extracted from patient medical records. Patients with pre-operative hypocalcemia were excluded. **Results:** A retrospective study conducted on 2108 patients that underwent thyroid surgery in a single center (1669 women and 439 men). Postoperative early hypocalcemia was defined as serum calcium levels lower than 8.0 mg/dl measured 24 h after surgery. Following factors were evaluated in the study: sex, age, glandular hyperfunction, preoperative diagnosis, preoperative serum calcium levels, preoperative serum PTH levels, type of surgery performed (total thyroidectomy vs. lobectomy); number of parathyroid preserved in situ, postoperative serum calcium levels, changes in perioperative calcium levels (difference between preoperative values and postoperative calcium levels), presence of carcinoma in the surgical specimen, presence of thyroiditis based on histopathology reports. **Conclusion:** Thyroidectomy is a safe surgery with few complications when performed by a skilled surgeon. These complications result in longer hospital stays and higher costs. The most common post-thyroidectomy complication was hypocalcemia. Furthermore, patients who underwent total thyroidectomy were at the greatest risk of developing post-thyroidectomy hypocalcemia.

KEYWORDS : thyroidectomy, temporary hypocalcemia, risk factors, post-thyroidectomy complications, persistent hypocalcemia

INTRODUCTION

Thyroid disorders are among the most commonly occurring endocrine gland diseases worldwide. They can be treated either medically or surgically. Thyroidectomy (partial or total) is one of the most frequent operations performed globally [1,2]. Compression symptoms, suspected or known malignancy, presence of a solitary cold nodule in patients aged <20 years, cosmetic reasons, and the presence of a complex cyst or a cyst >4 cm in diameter are all indications for thyroidectomy [3]. Due to advancements in anesthesia, operative techniques and antisepsis, better surgical instruments, and understanding of thyroid anatomy and physiology, thyroid surgery is now considered a safe procedure [4,5]. However, complications following thyroid surgery may occur. These complications include hypocalcemia, recurrent laryngeal nerve injury, hematoma, seroma, stridor, loss of high-pitched voice, thoracic duct injury, wound infection, and tracheal injury [6]. Such complications occur less frequently when the surgery is performed by experienced surgeons (surgical volume of procedures performed per year) [3,7]. Hypocalcemia and recurrent laryngeal nerve injury are the most frequently encountered complications [8]. Post-thyroidectomy complications may be associated with some risk factors such as age, sex, increased gland size, type of thyroid disease, presence of fibrosis and inflammation, extent of thyroidectomy, and lymph node dissection [4]. According to a study conducted by Papaleontiou et al., advanced age, presence of comorbidities, and advanced disease are significant risk factors for post-thyroidectomy complications, especially in cases of thyroid cancer [9]. Our research group has previously published a paper on post-thyroidectomy complications in general [6]. The current study, however, focuses on the prevalence and risk factors associated with post-thyroidectomy hypocalcemia. Furthermore, we hope to share our experiences and compare our findings with those in the literature.

MATERIALS AND METHODS

Methods: We analyzed data about a total number of 2108 patients that underwent thyroid surgery in the study period. There were 1669 women (79.2%) and 439 men (20.8%) with a mean age of 54.65 years (range, 15–87). Patients' demographics, operative details, histological

findings and postoperative events are reported in Table 1.

Table 1. Frequency Distribution Of Demographic And Clinical Characteristics Of The Subjects.

Properties	Number	Percent Cumulative	Percentage
1. AGE			
40 ≥	31	21.7	21.7
41–60	87	60.8	82.5
60 <	27	17.5	100
2. TYPE OF SURGERY			
Total Thyroidectomy	116	81.1	81.1
Subtotal Thyroidectomy	27	18.9	100
3. Hypocalcemia In The First 24 Hours After Surgery			
Positive	70	49	49
Negative	73	51	100
4. Hypocalcemia In The First 48 Hours After Surgery			
Positive	91	63.6	63.6
Negative	52	36.4	100
total	143	100	

RESULTS

Among the 182 patients who underwent thyroidectomies, 105 (57.7%) had benign lesions and 77 (42.3%) had malignant lesions. The ages ranged between 15 and 95 years (mean 39.87 ± 12.67 years), with most patients being female ($n = 151$, 83%). Total thyroidectomy was the most common surgery performed ($n = 107$, 58.8%), followed by right hemithyroidectomy ($n = 39$, 21.4%) and left hemithyroidectomy ($n = 24$, 13.2%). Further, completion thyroidectomy and subtotal thyroidectomy were performed for 2.7% and 3.8% of the patients, respectively. A total of 116 patients (63.7%) had temporary hypocalcemia and three developed persistent hypocalcemia (1.6%). The remaining patients ($n = 63$, 34.6%) did not develop hypocalcemia. Table 1 depicts the association between post-thyroidectomy hypocalcemia and various risk factors. In addition, there was no significant relationship between the occurrence of hypocalcemia and

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Keywords: anemia, peripheral smear, automated analysis.

Research Article

An Immuno-Histochemical Study on Expression of ER - Beta in Colorectal Carcinoma in A Tertiary Care Centre in Thiruvananthapuram

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Keywords: Colorectal carcinoma, ER beta.

INTRODUCTION

Colorectal cancer (CRC) is the third most common cancer in men (663,000 cases, 10.0% of the total cancers) and the second in women (570,000 cases, 9.4% of the total cancers) worldwide. The annual incidence of CRC in India is about 4/100,000 and in Kerala it is about 5.5/100,000.¹ This increased incidence in Kerala is postulated to be due to the increased consumption of red meat in the state which is an established risk factor along with age, environmental factors- diet, smoking, sedentary lifestyle and genetic factors- FAP, Lynch syndrome and related non polyposis

associated hereditary conditions. About 6% of all CRC are caused by the inheritance of mutated genes with high penetrance.²

Gastrointestinal tumors can be divided into 4 major categories of carcinoma viz, adenocarcinoma, neuroendocrine tumor, neuroendocrine carcinoma and mixed neuroendocrine - non neuroendocrine tumor.

ER β is the predominant estrogen receptor expressed in normal colonic epithelium, with limited or no expression of ER α observed in the colon.³ ER β is thought to have a

Nuclear morphometric study and its correlation in various breast lesions using FNAC

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Abstract

Background: Early detection through screening, effective investigative pathways and appropriate treatment have the ability to lessen breast cancer mortality rates. Thus the present study was undertaken to assess the role of morphometry on fine needle aspirates in accurate diagnosis of benign and malignant breast lesions. **Materials and methods:** 120 cases of Fine needle aspirates of breast lesions done at the Department of Pathology, Adichunchanagiri Institute of Medical sciences were take for nuclear morphometric study. Nuclear Morphometric parameters were measured using ProgresR capture pro 2.9.0.1 software. Data was expressed as mean values and percentage comparison between groups were done by unpaired t test and one way ANOVA test. **Results:** Nuclear parameters were significantly higher in malignant groups comparing benign ones (P value<.001) also between various cytodiagnostic categories (P value<.001). The Standard Deviation of these parameters is a quantitative measurement of nuclear pleomorphism, which was significantly lower in benign cases. **Conclusion:** Morphometric analysis of nuclear parameters can be used as an adjunct to FNAC for diagnosis of benign and malignant lesions, differentiating various cytodiagnostic categories and malignant grades of breast with precision and accuracy. **Key words:** Nuclear parameters, breast lesions, FNAC, nuclear pleomorphism.

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Introduction

Breast carcinoma is one of the most common malignancies in the female population and it also accounts for the major cause of cancer mortality among Indian woman. Early detection through screening, effective investigative pathways and appropriate treatment have the ability to lessen breast cancer mortality rates.



To correlate subjective Morbidity and Mortality in road traffic accidents

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Zarrin Afroz⁷

Abstract

Background: The development of science in various aspects of human life has evolved far more superior, sophisticated, and lethal weapons of assault like household items, atomic energy etc. Due to the effect of urban civilization, Road traffic accidents are going to be increased and it takes approx. 1.2 million people's life. Greatest difficulty in their management and in the timely diagnosis. Hence, aim of study is to get knowledge and to assess the pattern of the blunt chest injuries among accident victims travelling in different modes of road transportation.

Material and Methods: Data was collected from 100 cases of death by road traffic accident that were brought for medico-legal autopsy at the mortuary of Forensic Medicine Department, Rajarajeswari Medical College and Hospital Bengaluru, during the period from December 2013 to May 2015.

Results: Out of 100 cases studied, majority of the victims were aged between 21-40 years (66%). Males comprised the majority of victims as compared to females in the ratio 4.5:1. Study revealed that 80% victims of blunt chest injury had died within 6 hours and 6% cases survived for more than 24 hours. Majority of the accidents occurred in the morning and evening hours between 06.00am to 12.00 noon and 6.00pm to 12.00 midnight respectively (36% each). Most of the RTA occurred in highway roads (78%). Maximum cases had injuries in combination of different parts of body (50%). Most of the incidence occurred in summer (50%). Most of the cases had combination of injury to more than one organ (50%).

Conclusion: All blunt thoracic traumas constitute potential factor in increasing the amount of morbidity and mortality and therefore proper attention towards their accurate diagnosis and satisfactory management is mandatory. This study also shows that initial six hours are very crucial from the time of the accident to get the extra medical care which may help to save productive age of victim.

KeyWords: Road Traffic Accident, Blunt trauma, Thoraco injury

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Introduction

Road traffic accidents (RTAs) have been considered as main leading and progressive factor for global disease burden. Globally every year approximately 1.3 million people lose their life as a result of a road traffic collision. Due to RTAs approx. twenty to fifty million people are living with nonfatal injuries from a collision, and these injuries are going to become main cause of disability worldwide¹. Road traffic

accidents are expected 3rd leading cause of global disease burden². WHO reported 1.24 million deaths worldwide due to road traffic injuries^{3,4}. Trauma is also leading cause of death in developing countries and has become major health and social problem. Trauma due to RTAs generally affects young people and takes more years of life.

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■ ORIGINAL ARTICLE

Stature Prediction from Anthropometric Measurements of Palm and Finger in South Indian Population

Amjad Dastageer Mirzanaik¹, Samreen Panjakash², Karikalan T³

ABSTRACT

INTRODUCTION

AIM: To establish correlation between stature and palm lengths and individual finger length of both the hands in both males and females separately in South Indian population.

SETTINGS AND DESIGN: The present study was set up in the department of anatomy of Al Ameen Medical College, Bijapur. Among the volunteers, 300 healthy adults of age group 18-30 years were selected for the study.

MATERIALS AND METHODS: Stature was measured using Standard Stadiometer and palm and finger length were measured using Vernier caliper.

STATISTICAL ANALYSIS USED: Pearson's correlation coefficient and Regression equation formulas for stature estimation were calculated for all the parameters using trial version of SPSS software. Result: all the parameters displayed positive and significant correlation with stature in given population. Regression equations were calculated to estimate stature from given palm length or finger lengths.

CONCLUSION: There exists a definite correlation between stature with palm and finger length in both males and females included in the study.

KEYWORDS | Stature; Correlation; Regression equation

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INTRODUCTION

As the world is developing, modern technology is at its pinnacle, with it came wars, mass disasters, natural disasters, terrorist attacks, etc creating a need to handle such situations with great efficacy. The onus lies on the law agencies and medico legal experts to solve the problems of identification which arises under these scenarios where multiple victims are involved.

Determining the stature of an individual from the dismembered body parts is one of the vital duties of a medico legal expert to aid in identification of an individual.

In forensic investigations, stature can be calculated by using either anatomical method or mathematical method. The anatomical method involves measuring and adding together the lengths or heights of a series of contiguous

Correlation of the Age of Eruption of Teeth with the Body Mass Index among School Children

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ABSTRACT

The timing of tooth eruption is influenced by various factors, especially the nutritional status of the individual. Body Mass Index gives an indication about the nutritional status of the child. Hence this study was done to determine the correlation between the mean age of eruption of permanent teeth and the Body Mass Index among school children in Thiruvananthapuram. A cross sectional study was done among the students of Thiruvananthapuram. Two thousand nine hundred students (males and females) were included in the study. Only those with the documentary proof of their date of birth were included in the study. For statistical purposes, only completed year was taken into consideration. Random sampling was done by selecting the alternate students from the attendance register. The dental examination was made in the adequate light with the aid of a mouth mirror and a probe. The details of eruption were observed and charted according to the Modified System of Federation Dentaire Internationale (Modified F.D.I). There were 1568 males and 1357 females out of the total sample of 2925 children. The mean age of eruption of mandibular central incisors, mandibular lateral incisors, maxillary second premolars and maxillary first molars were found to have statistical significant difference among the different categories of BMI status. Among the different categories of BMI, Underweight children were found to have late eruption of teeth compared to overweight children.

Keywords: Mean age of eruption, Permanent Teeth, Body Mass Index

INTRODUCTION

Assessment of age is often required while administering justice to an individual involved in civil and criminal litigation. A documentary evidence regarding the age of a person is required by the law enforcing agencies in matters like criminal responsibilities, identification, judicial punishment, consent, rape, criminal abortion, employment, attainment of majority, kidnapping and prostitution.¹ Teeth are the most indestructible part of the body and exhibit the least turnover of natural structure, and do need special dissection. Hence teeth

provide excellent material in living and non living populations for anthropological, genetic, odontological and forensic investigations.² The clinical method to assess dental age is based on the emergence of teeth in mouth. The timing of tooth eruption is influenced by various factors: physiological factors (i.e. heredity, constitution, geographical factors, sex, race, nutrition, climate, urbanisation), pathological systemic factors (various diseases i.e. endocrine diseases, cerebral palsy, severe intoxications, severe renal diseases, genetic disorders) and pathological local factors (local eruption obstacles, hypodontia, lack of space).³ Demirjian stated that emergence standards should be derived from the population in which they are to be applied, as factors related to emergence may vary considerably.⁴

Very few studies have been published correlating body mass index (BMI) and chronology of tooth eruption among children in India.

Therefore the objective of the present study was to determine the mean eruption time of permanent teeth

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■ ORIGINAL ARTICLE

Stature Prediction from Anthropometric Measurements of Palm and Finger in South Indian Population

Amjad Dastageer Mirzanaik¹, Samreen Panjakash², Karikalan T³

ABSTRACT

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CONCLUSION: There exists a definite correlation between stature with palm and finger length in both males and females included in the study.

KEYWORDS | Stature; Correlation; Regression equation

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INTRODUCTION

As the world is developing, modern technology is at its pinnacle, with it came wars, mass disasters, natural disasters, terrorist attacks, etc creating a need to handle such situations with great efficacy. The onus lies on the law agencies and medico legal experts to solve the problems of identification which arises under these scenarios where multiple victims are involved.

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Correlation of Clinico- Histopathological Subtypes of Leprosy with Quantification of Langerhans Cells in Skin Lesion by Immunostaining

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Abstract: **Introduction:** Leprosy is a leading cause of physical disability due to weakness of muscles and loss of sensation. Due to the difference in immune response in the various forms of leprosy, Langerhans cells (antigen presenting cells) in the skin show a graded number in the various forms of leprosy patients. **Materials and methods:** a total of 44 cases were considered analysed by categorising according to Ridley and Joplin criteria. Paraffin blocks sections were stained with CD1A antibody using green coloured chromogen. Immuno - histochemistry studies were done using UltraVision LP detection system made by ThermoFisher Scientific. The number of epidermal, dermal and hair follicle Langerhans cells were counted. **Result:** There was no statistical significance between leprosy types on comparing with the dermal LC score. Whereas Mean value of epidermal LC score was significantly less in lepromatous leprosy (LL) (1.78) and was gradually increasing from borderline lepromatous type (BL) (2.44), borderline tuberculoid type(BT) (5.25) to tuberculoid leprosy (TT) (5.50). There was a statistically significant difference in number of Langerhans cells between BL and BT and between LL and TT (p=0.000). **Conclusion:** Progressive reduction in the number of Langerhans cells from tuberculoid subtype to lepromatous subtype was noted. Atrophy, epithelioid cells, giant cells, and nerve changes was seen more in tuberculoid pole than lepromatous pole. There is a statistically difference in the number of Langerhans cells between BL and BT and between LL and LT.

Keywords: leprosy, CD1a, immunohisto chemistry, Langerhans cells

INTRODUCTION

Infection by intracellular organism *Mycobacterium leprae* leads to host immune response which ranges from apparently none to severe manifestations resulting in a spectrum of clinical pathological manifestations in leprosy. The most common method of infection appears to be direct or indirect contact with infective patients of leprosy. In skin, although infections may possibly take place through respiratory and alimentary routes.¹ The transmission of leprosy is not yet fully understood.

After the anti-leprosy work in the country has been intensified, especially in the post-independence years after 1948 and particularly after the initiation of the National leprosy eradication program in 1955 by the Govt of India, the estimated number of cases has been rising. The main reason for the increase in the estimated number of cases is increased activity in the case finding program. A contributory factor in this respect is that, because of availability of the potent drugs for the treatment of the disease, an increase number of patients are voluntarily seeking treatment.

With various intervention introduced under NLEP in the last few years, number of new leprosy cases detected have come down to 75,394 in 2021-22 from 1,25,785 in 2014-15, accounting for 53.6% of global new leprosy cases.²

Though Leprosy is eliminated from India in a statistical point of view but from disease point of view it is still a challenge there are no active case finding strategies as it still depends on self-reporting or case detection at common health facility. There is a delay in self-reporting due to financial constraints and social stigma associated with the disease which can lead to hiding the disease. Sometimes ignorance about the disease can also lead to undetected cases in the rural setup.

Langerhans cells are important in pathogenesis of leprosy.³ Langerhans cells represent unique dendritic antigen presenting cell populating epidermis. They are important contributors to the ongoing immune response through cellular and humoral interactions.^{4,5} Langerhans cells make use of CD1a proteins to induce cellular immune response. There is marked variation in clinical, histological and immunological features of leprosy from tuberculoid pole

ORIGINAL ARTICLE

Effectiveness of Palliative Care Training on the Knowledge and Attitude of the Interns on Patient Care in a Medical College in Kerala

S. A. Thilak¹, G. I. Sandhya¹, S. A. Lakshminarayana²

ABSTRACT

Background: Palliative care (PC) encompasses holistic management of patients and families facing life-threatening conditions in the community. In medical curriculum, as such there is no separate emphasis was given for the PC and PC mainly deals with attitude and communication component of treatment than on medical or surgical treatment. Hence, we conducted the present study among the interns in a private medical college in Kerala. **Objectives:** The objective of the study is to assess the effect of PC training on the knowledge and attitude of the interns on patient care (both PC and general patient care) in a medical college in Kerala. **Materials and Methods:** It was quasi-experimental study conducted among interns of Al-Azhar Medical College with sample size of 64. The interns were divided into two groups - Group A - who was posted in the department of Community Medicine and Group B - who were not posted in the department of Community Medicine. Group A students undergone PC training in the department of Community Medicine. Data collected after taking informed consent and data were analyzed using Student "t" test and Mann Whitney test to compare between groups. **Results:** In this study, a total of 64 interns participated 67.2% were female, and mean age was 23.72 ± 0.79 . The mean score of knowledge about PC among the study population was 8.11 ± 1.16 . Intervention group had better knowledge compared to control group and it was statistically significant ($P = 0.039$). The attitude about PC among the intervention group is good compared to the control group. **Conclusion:** In our study, the overall knowledge and attitude about PC was good among the interns who have undergone PC training compared to the control group. So, introducing PC training as part of medical curriculum may help the medical students in handling PC with more confidence.

Key words: Attitude, interns, knowledge, palliative care training, palliative care

INTRODUCTION

The palliative care (PC) encompasses holistic management of patients and families facing life-threatening and life-limiting conditions in the community. The main aims of PC are to improve quality of life through prevention, early identification, and relief of physical (including pain), psychological suffering among the patients, and by optimising independent function of the patients without much dependency.^[1-3]

The PC is gaining more importance because of increased number of cases of chronic diseases in the community such as cancer, diabetic foot, road traffic accidents, stroke,

cardiovascular diseases, and disability by the result of these diseases in the community. Since, the PC gaining more importance, it would be great asset for the interns to have sufficient knowledge, experience, and skills to manage patients who require PC.^[3]

In medical curriculum, as such there is no separate emphasis was given for the PC and PC mainly deals with attitude and communication component of Medical Council of India's AETCOM module than on the treatment per se. Because

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Original Article

Prevalence and Patterns of Self-medication in Adults of Suburban South India: A Sequential Explanatory Mixed-method Study

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Abstract

Introduction: The Ottawa charter recognizes responsible self-medication as a component of self-care, particularly in resource-limited settings. However, irresponsible self-medication can lead to adverse drug interactions, polypharmacy, and delayed diagnosis, posing significant public health concerns. Understanding local drivers of self-medication is essential to guide context-specific interventions. **Methodology:** This mixed-methods study aimed to assess the prevalence, patterns, and determinants of self-medication among adults in suburban Central Kerala. A sequential explanatory design was employed, combining a community-based cross-sectional survey using EpiCollect5 with in-depth interviews of local pharmacists. Multistage sampling was used, and a sample size of 164 was calculated using $(1.96)^2 PQ/R^2$. Quantitative data were analyzed through IBM SPSS 20 and Qualitative data using an inductive thematic approach in Quirkos software. **Results:** The study included 162 participants; the nonresponse rate was only 1.2%. The prevalence of self-medication was 39.6% (95% confidence interval [CI]: 32–47.5). Antipyretics (49.1%) and nonsteroidal anti-inflammatory drugs (38.6%) were the most commonly used medications, primarily for symptoms such as fever (69.3%). Self-medication was found to be uniformly prevalent across all sociodemographic and health-related variables, including marital status ($P = 0.63$), education level ($P = 0.51$), type of healthcare visits ($P = 0.18$), health insurance status ($P = 0.25$), distance to hospital ($P = 0.90$), and chronic disease status ($P = 0.45$). Qualitative findings revealed that a perceived familiarity with medications, high consultation costs, long waiting times, and the persuasive influence of pharmaceutical marketing were key factors motivating self-medication. **Conclusion:** These findings emphasize the high and uniform prevalence of self-medication across different population groups in central Kerala. They highlight the urgent need for targeted public health strategies that encourage responsible self-medication practices while simultaneously addressing existing challenges in healthcare access and delivery.

Key words: Mixed method study, qualitative study, self-medication

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INTRODUCTION

Self-medication involves the use of medicinal products by the consumer to treat self-recognized disorders or symptoms or the intermittent or continued use of a medication prescribed by a physician for chronic or recurring diseases or symptoms.^[1] In addition, it extends to administering medications to family members, particularly in situations involving the treatment of children or the elderly. In regions with limited access to healthcare services, self-medication becomes a primary means of managing health issues, contributing to positive and negative health outcomes.^[1]

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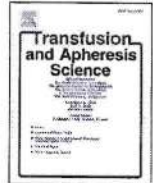
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Red Ribbon Club inculcation of positive deviance approach to promote blood donation among undergraduate medical college students

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ABSTRACT

Background: Blood is an essential part of human life and blood donation has become a necessity that every society must take into consideration. Health care professionals have a major responsibility in raising community awareness on blood donation.

Objective: This study aims to find out the knowledge and attitude of undergraduate medical students on blood donation and to determine the effectiveness of positive deviance (PD) approach.

Methodology: This institutional based cross-sectional study was conducted as a part of World AIDS Days celebration by Red Ribbon club among 414 undergraduate students using convenient sampling technique. A baseline and endline survey were conducted using a pre-structured validated questionnaire. To address the knowledge gap PD approach was used for the students who had voluntarily donated blood, volunteered in providing health education, and shared their experience to their peers. Ethical principals were adhered.

Results: The mean age of the students was 20.4 ± 1.2 years. Most respondents had moderate knowledge on blood donation and positivity attitude towards the same. The key finding of our study is that about 45 students (10.9%) have donated blood till now. As a result of PD training session more than half of them volunteered to donate blood in the future.

Conclusion: This study shows that awareness about blood donation were minimal among the medical students with misconceptions. After PD approach, the willingness was increased from 10% to 66%. Thus, PD approach builds capacity and leadership in volunteers is considered as the best approach for behavior change among their own peers.

1. Introduction

Blood is one of the most vital components of human life. There are no alternatives and no substitutes [1]. Blood transfusion and donation can save more lives than many other life-saving measures, that occupy vital space in health service delivery system throughout the world [1,2]. Because blood is a sparse resource, it cannot be stored indefinitely and requires constant donation [2]. Blood donation (BD) is thus a voluntary

life-saving act that is an integral part of what human society can collectively do to save the lives of fellow human beings. Thus, voluntary blood donors (VBDs) are considered the cornerstone of a safe and adequate supply of blood and blood products to alleviate human sufferings, even in far-flung, remote areas. The safest blood donors are voluntary, nonremunerated blood donors (VnRBD) from low-risk populations [3,4].

According to the National AIDS Control Organization (NACO), a

Abbreviations: BD, Blood donation; VBD, Voluntary blood donation or donors; VnRBD, Voluntary non-renumerated blood donors; PD, Positive Deviance approach; RRC, Red Ribbon Club; M&E, Monitoring and evaluation; CME, Continuing Medical Education; NACO, National AIDS Control Organization; WHO, World Health Organization.

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Unheard Voices of Pregnant Health Care Professionals during COVID-19 Pandemic? – A Qualitative Study

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Abstract

Background: Pregnant Health Care Professionals (HCPs), who serve as front-line warriors of COVID-19 will invariably experience a stressful pregnancy period. Ensuring their well-being during this COVID-19 pandemic period is a big challenge and guidelines or standard operating procedures (SOP) for the same are non-existent or are scarce. **Objectives:** To explore the challenges and experiences of pregnant HCPs during the COVID-19 pandemic. **Methods:** A qualitative study was conducted among 19 pregnant HCPs (14 Doctors and 5 staff nurses) working in Pondicherry, who were selected using purposive sampling for in-depth interviews. After obtaining informed written consent, face-to-face interviews were conducted until the attainment of the point of saturation. Audio recordings of the interviews were transcribed in English. Transcripts were proofread and manually analyzed for content. Codes obtained from the analysis of transcripts were merged to form broad categories. **Results:** The majority 15 (78.9%) of HCPs belonged to the clinical department and had work experience from 2–4 years. The mean age of the respondents was 29.4 ± 3.6 years. Four broad categories (of challenges), namely, Personnel level (Fear of infection in workplace, Inadequate antenatal care), Family level (Family pressure to quit job, Guilt of spreading the infection to family members), society level (Criticism by neighbor for working, Stigma), and work level challenges (Fear of losing the job, Uncomfortable work environment) emerged from the study. **Conclusion and Recommendations:** Challenges faced by the pregnant HCPs due to their nature of work remain by and large not addressed. Hence, specific guidelines or SOPs addressing these issues of pregnant health care workers and their swift and strict implementation are the need of the hour.

Keywords: Hospital guidelines, IDI, pregnant HCPs, work safety

BACKGROUND

Coronavirus disease (COVID-19) was first reported in Hubei province, Wuhan, China, in December 2019 and eventually evolved as a global pandemic affecting 235 million people worldwide.^[1] India stands second among the worst-hit countries in the ongoing pandemic. The COVID-19 pandemic has taken a toll on the general population's overall physical and mental health status, particularly in pregnant and lactating mothers.

Pregnancy is an important period of transition from womanhood to motherhood in a woman's life, where she undergoes major physical and emotional changes.^[2] Pregnancy as described by many is not only a medical or physiological state but a period of joy, excitement, and anticipation for a mother for

bringing a new life into this world.^[2,3] Unfortunately, pregnancy during the COVID-19 pandemic had transformed this joyous occasion into a very stressful and worrying time for mothers.^[4-7] Pregnant women due to their decreased immune status become potentially vulnerable targets to COVID-19 and are at high risk for pregnancy-related complications.^[7,8] Apart from this, the unknown facts about the effect of COVID-19 in pregnancy put pregnant mothers under undue stress due to fear of affecting their fetuses.^[9,10] The Health Care Professionals (HCPs), who serve as front-line warriors of COVID-19, have no exception from experiencing this stressful pregnancy period.^[8,9]

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SILENT MONSTER IN THE EAR: UNDERSTANDING THE LEVEL OF AWARENESS ABOUT CHOLESTEATOMA IN HOSPITAL VISITORS

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ABSTRACT

Background: Due to lack of severe symptoms and signs in initial stages and lack of awareness about the disease, there is a potential risk of uncomplicated cholesteatoma cases going unnoticed. This study aims to assess the level of knowledge about COM, especially cholesteatoma and related harmful practices among general population.

Methods: All consenting adult hospital visitors, irrespective of their purpose of visit were invited to participate in this questionnaire based, cross sectional study at the preregistration point of the tertiary care teaching hospital. Data was collected and analyzed using appropriate methods. The questionnaire contained 7 categories of various questions related to ear infections, especially Cholesteatoma.

Results: Among 350 respondents, majority exhibited poor level of knowledge about general perceptions about ear infections [295(84.3%)], perceptions about cholesteatoma [246(70.3%)] ; awareness about intratemporal complications [244(69.7%)] ; awareness about intracranial complications [247(70.6%)] and harmful practices in ear disease patients [279(79.7%)]. Multivariate analysis of socio-demographic and ear disease history related characteristics with overall ear disease related knowledge has shown that unskilled workers and unemployed respondents have poor knowledge levels compared to their counterparts, but at the same time the study has found that respondents with higher level of education also exhibited poor levels of knowledge in contrary to the existing evidence.

Conclusion: This study highlights the lack of awareness about COM, especially cholesteatoma and its potential complications, harmful practices mainly in rural population, even in well educated



Utilization Of Facility-Based Counselling And Testing Centre At Tertiary Teaching Hospital In Pondicherry

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Conflicts of Interest: Nil

Abstract

Background: In order to promote awareness on HIV and impart behavior change attending Facility based Counselling and Testing Centre (FCTC) pre and post-test counselling is mandatory.

Objectives: To study the sociodemographic profile of FCTC attendees and to find the proportion of patients who did not attend FCTC pre and post-test counselling.

Material and Methods: Record based cohort design was adopted to extract the profile of patients attending the FCTC center to line list the patient who refused to attend FCTC centre. The study was carried out for period of six months after obtaining IEC clearance. The data of all patients (N=15726) registered during the study period of five years (2015 to 2019) were extracts from FCTC lab register. From the notification register 79 patients who did not attend FCTC counselling centre. Then Exit interview was conducted among 15 patients to validate the findings.

Results: 79 (0.5%) patients didn't attend counselling, among them majority of them were females 52 (72%). Majority of them were adults between age group of 15-60 years 74 (93.7%). From the exit interview of the referred patients, it was found to be mistake of the stakeholders.

Conclusion: The exact reason has to be explored and possible solutions have to obtained from experts who are providing HIV Care.

Keywords: HIV, FCTC, Pre and Post-test counselling

Introduction

HIV continues to be a major global public health issue, having claimed more than 32 million lives so far. However, with increasing access to effective HIV prevention, diagnosis, treatment and care, including for opportunistic infections, HIV infection has become a manageable chronic health condition, enabling people living with HIV to lead long and healthy lives. There were approximately 37.9 million people living with HIV at the end of 2018.¹ HIV and syphilis affect similar patient groups and co-infection is common. All patients presenting with syphilis

should be offered HIV testing and all HIV-positive patients should be regularly screened for syphilis.² The risk of developing tuberculosis (TB) is estimated to be between 16-27 times greater in people living with HIV than among those without HIV infection. In 2015, there were an estimated 10.4 million cases of tuberculosis disease globally, including 1.2 million [11%] among people living with HIV (WHO). Voluntary HIV Counseling and Testing (VCT) is a key factor in the prevention of mother-to-child (MTC) HIV transmission. This strategy promotes adequate treatment for HIV positive women and has

EFFECT OF THYROXINE THERAPY ON BRAINSTEM-EVOKED RESPONSE AUDIOMETRY MEASURED AUDITORY PROCESSING IN NEWLY DETECTED PATIENTS OF HYPOTHYROIDISM

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Abstract

Background: This research focuses on evaluating the improvement of hearing functions in individuals with newly diagnosed hypothyroidism using Brainstem-Evoked Response Audiometry (BERA) based audiological status of patients before and after 6 months of thyroxine therapy. **Materials and Methods:** A prospective study was conducted on 50 newly diagnosed hypothyroid patients at the Department of Otorhinolaryngology, Vinayaka Mission's Medical College & Hospital, over 18 months. Participants aged 18-60 years underwent physical, clinical, and otorhinolaryngology examinations, alongside thyroid profile measurements before and after 6 months of thyroxine treatment. The BERA test was utilized to evaluate auditory responses. **Result:** A significant improvement in thyroid hormone levels post-thyroxine therapy, is evidenced by a decrease in TSH and an increase in free T3 and free T4 levels. BERA assessments pre and post-treatment indicated statistically significant improvements in auditory response times/latencies, particularly for waves III, V (mean differences of 0.086ms and 1.103ms and p values of <0.05 and <0.001 respectively) and interpeak latencies I-III, III-V, and I-V (mean differences of 0.155ms, 0.923 and 1.191ms respectively and all p values <0.001); which showcased enhanced neural transmission along the auditory pathway. These results were more pronounced in later stages of auditory processing, suggesting that hypothyroidism primarily impacts these stages and that thyroxine therapy significantly mitigates these effects. **Conclusion:** While conforming to various existing evidence, this study underlines the critical role of thyroxine in improving thyroid function and thus the auditory function in hypothyroid patients. It presents robust evidence of the positive impact of thyroxine on auditory processing speeds, especially in the auditory pathway's later stages. This highlights the importance of early diagnosis and thyroxine therapy in managing hypothyroidism, suggesting that BERA should be considered in the evaluation and monitoring of the central auditory pathway in newly diagnosed patients.

INTRODUCTION

The thyroid gland, with its origins in anatomical descriptions by Andreas Vesalius in the 16th century and the naming by Thomas Wharton in the 17th century, plays a pivotal role in metabolic regulation through hormone production. Weighing 20-25g and located in the neck, its basic structure, the thyroid follicle, produces thyroid hormones T3 and T4 essential for metabolic processes. Hormone synthesis involves iodide trapping and iodination of tyrosine in

Thyroglobulin, regulated by the hypothalamic-pituitary-thyroid axis and transported by specific proteins. These hormones influence metabolism, impacting lipid, carbohydrate, and protein utilization and interacting with other bodily hormones. Hypothyroidism, characterized by insufficient thyroid hormone production, manifests in various symptoms across bodily systems including cardiovascular, gastrointestinal, and neurological, affecting cognitive functions and hearing (sensory neural hearing loss). The human ear, from the

Utilization of Untied Fund and Factors Affecting the Utilization at Sub-Centers of Rural Odisha: A Mixed-Method Study

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Abstract

Introduction: The untied funds at sub-centers provided flexibility for local action at block and down below levels. Effective utilization of untied fund can strengthen the healthcare. So, our study aims at assessing the knowledge of health workers, male/female (HWF/M), and effectiveness of utilization of untied funds at the sub-center (SC) level. **Material and Methods:** A mixed method (cross-sectional study and qualitative study) was conducted at Tangi Block, Khordha district, Odisha, in the year 2020. Health workers, male and female in sub-centers, and local stakeholders were interviewed using a structured interview schedule. The tool comprises financial records, a semi-structured questionnaire, and an in-depth interview guide. Universal sampling was adopted. For the cross-sectional study, 24 health workers were male/female, and for the qualitative study, all local stakeholders and 24 health workers female/male were interviewed. The study was conducted as a part of an academic program, and ethics approval was approved by AIIMS Bhubaneswar Institute Ethics Committee. **Results:** Seven out of 24 sub-centers did not spend any money, with a median unspent amount of 4260 INR (Q1-0, Q3-17300). As many as 36.8% of sub-centers had a delay of 9 months to get the untied fund, which significantly affected the utilization of funds. 37% of HWF/M utilized the fund inappropriately. None of the health workers had complete knowledge regarding the appropriate usage of untied fund. Communication gap, multiple engagements, non-cooperation from officials, delay in technical processing, and irregular Garam Sabha meetings were found to be barriers. **Conclusion:** Our study found out under-utilization of money in untied fund. Communication gap, non-cooperation from village leaders, poor knowledge, overburdened health workers, improper reporting, and lack of felt need were found to be barriers for prompt utilization.

Keywords: NMH financing, primary care health system, sub-center financing, untied fund

INTRODUCTION

Untied funds have been formulated under the National Health Mission (NHM) to comply with the principles of decentralization and the 'bottom-up' approach. The NHM was launched by the Government of India on 2005 to carry out a necessary architectural correction in the primary health care delivery system, with a plan of action that includes a commitment to increase public expenditure on health.^[1] Under the Mission, diverse activities have been initiated to strengthen the health care delivery system for the improvement of the health of the rural population.^[2] This inflow of funds has reduced the financial constraints to a greater extent at the primary care level. The grants provided under the untied funds to sub-centers help in enhancing the confidence and independence of health worker females (HWFs) at the sub-center and hence aim to create

better equipped sub-centers facilitating quality care even at the sub-center level.

Also, NHM now advises the states, districts, blocks, and sub-centers to devise a need-based annual plan, according to which funds will be allocated from the center.^[2] This has increased the autonomy of centers regarding financial management. The Government of Odisha provides 10,000 INR as an untied fund and 10,000 INR as annual maintenance grant to sub-centers with clear guidelines on how to utilize

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Uptake and Determinants of Weekly Iron-folic Acid Prophylaxis among Adolescent Girls in the Rural Neighborhood of Bhubaneswar: A Cross-sectional Study

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Abstract

Background: Anemia prevalence among Indian adolescent girls increased from 53.2% to 57.2% from the National Family Health Survey 4–5. Uptake of four iron and folic acid (IFA) tablets per month was 10% and 54.3% among school-going adolescent girls in India and Odisha, respectively. The present study evaluated the uptake and determinants of weekly IFA supplementation (WIFS) uptake among adolescent girls and assessed the impact of culturally acceptable health education on its consumption. **Methodology:** The present cross-sectional study was conducted between December 2022 and February 2023 in rural Odisha. A multistage sampling with simple random sampling for the selection of villages and schools followed by a universal sampling of participants was used. A semi-structured questionnaire was used to assess the WIFS uptake and determinants, followed by the utility of a culturally relevant health education session on the uptake of IFA, whose impact on WIFS uptake was evaluated after 1 month. **Results:** The initial WIFS uptake was 68.7% (95% confidence interval: 63%–73%) among school-going students and absent among dropouts, increasing to 72.8% and 76.9%, respectively, 1 month after culturally appropriate health education. The key factors influencing the uptake of WIFS included the child's level of education, consistent availability of IFA tablets, and awareness among adolescents about the importance of WIFS. **Conclusion:** The uptake of WIFS was low among adolescent girls belonging to the rural areas of Odisha. Providing health education, coupled with a reliable supply of IFA tablets, was shown to significantly improve WIFS participation.

Key words: Adolescents, anemia, compliance, iron and folic acid, weekly iron and folic acid supplementation

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INTRODUCTION

India is one of the countries with the largest adolescent population in the world, with 243 million individuals. Globally, around 430 million people aged 10–24 suffer from anemia, with the highest rates occurring in low- and middle-income countries, as stated by the United Nations International Children's Emergency Fund data on adolescence. According to the National Family Health Survey-5, the prevalence of anemia among Indian adolescents aged 15–19 has increased, with rates rising from 55.8% to 59.1% among girls and from 30.2% to 31.1% among boys. Key contributors to adolescent anemia include poor awareness of hygiene and nutrition, intestinal parasites, and chronic infections, all of which heighten the body's need for iron.^[1] Since today's adolescents are tomorrow's mothers, addressing anemia in this age group is vital for reducing maternal mortality and the incidence of low-birth-weight babies. Anemia also negatively impacts cognitive function and mental health by impairing learning,

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The Quality of Life of Older Adults in Rural Eastern India and Its Influencing Factors: A Cross-Sectional Study

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Abstract

Aims

This study aimed to assess the quality of life (QoL) of older adults in rural Odisha, India, exploring its multidimensional nature across physical, psychological, social, and environmental domains. The impact of depression and various sociodemographic factors on QoL was also investigated.

Methods

The research was conducted in the Tangi block of Khordha district, Odisha, encompassing 468 older adults. The World Health Organization Quality of Life Brief Version (WHOQOL-BREF) questionnaire, Geriatric Depression Scale (GDS-15), and sociodemographic questionnaire were used in data collection. Sampling employed a multistage approach, with statistical analysis utilizing Statistical Package for the Social Sciences (SPSS) version 20 (IBM SPSS Statistics, Armonk, NY), including t-tests for normally distributed data and the Mann-Whitney U test for non-normally distributed data.

Results

The QoL of older adults in rural Odisha showed variability, with physical and social domains exhibiting relatively positive scores compared to psychological and environmental domains. Depression significantly impacted all QoL dimensions, with the most profound effect observed in global QoL and global health. Sociodemographic factors such as employment, substance use, elder abuse, adverse life events, and poverty were identified as significant determinants of global QoL. Additionally, recreational activity, elder abuse, education, and employment significantly affected all QoL domains.

Conclusions

This study reveals the complex landscape of QoL of older adults in rural Odisha. The findings emphasize the need for comprehensive interventions targeting mental health, social support, and environmental conditions to enhance the overall well-being of this population. Policymakers and healthcare professionals should consider these multidimensional factors to develop effective strategies for improving the QoL of older adults in similar contexts.

Categories: Psychiatry, Epidemiology/Public Health, Geriatrics

Keywords: socioeconomic factors, rural areas, community-dwelling older adults, depression prevention, quality of life (qol)

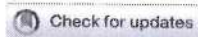
Introduction

As the world's population ages, ensuring the quality of life of older adults has become a major concern globally and nationally. Quality of life (QoL) is a complex concept encompassing physical, psychological, environmental, and social well-being, and it is essential to promote the health and well-being of older adults. In recent years, research has focused on examining the quality of life of older adults, identifying factors that affect it, and developing interventions to improve it.

Globally, the United Nations estimates that the number of people aged 60 years and older will more than double by 2050, reaching 2.1 billion [1]. This demographic shift will have significant societal implications in healthcare, social welfare, and the economy [2]. It is, therefore, imperative to understand the quality of life of older adults globally to ensure that their needs are met and that they can lead fulfilling lives in their later years.

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Geriatric depression: prevalence and its associated factors in rural Odisha

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The world's population is aging rapidly, and the epidemiological transition has led to increased mental disorders worldwide. Geriatric depression is masked by multiple comorbidities or the natural process of aging. Our study aims to estimate the prevalence of geriatric depression and find the risk factors associated with geriatric depression in rural Odisha. The study was a multistage cross-sectional study conducted in the Tangi block, district Khordha, Odisha, from August 2020 to September 2022, among 520 participants selected by probability proportional to size sampling. From the selected participants, eligible 479 older adults were interviewed using a semi-structured interview schedule, Hindi Mini Mental Scale, Geriatric Depression Scale-15, and Hamilton Depression Rating Scale. The step forward multivariable logistic regression was used to assess the associated factors of depression among older adults. Among our participants, 44.4% (213) of older adults were depressed. Substance abuse in family members [AOR: 16.7 (9.1–30.9)], history of elder abuse [AOR: 3.7 (2.1–6.7)], physical dependency [AOR: 2.2 (1.3–3.6)], and financial dependency [AOR: 2.2 (1.3–3.6)] are significant independent risk factors associated with geriatric depression. Living with children [AOR: 0.33 (0.18–0.59)] and recreational activity [AOR: 0.54 (0.34–0.85)] are significant protective factors of geriatric depression. Our study found that geriatric depression is highly prevalent in rural Odisha. Poor quality of family life and physical and financial dependency was found to be the most significant risk factor for geriatric depression.

KEYWORDS

geriatric, depression, prevalence, rural Odisha, elderly, cross-sectional study

Introduction

The world's population has been rapidly aging for the last 50 years. The National Policy on Older Adults defines “senior citizen” or “geriatric population” as 60 years and above (1). The global geriatric population has doubled from 1990 to 2019 by 703 million (2) United Nations (UN) world geriatric population prospects estimate the global aging population to double again by 2050 and is projected to reach nearly 1.5 billion. Western Asia, including India, expects an increase in the geriatric population of ~230% (2). Being prepared to address the needs of the growing older adult population is a necessity. According to the WHO, the prevalence of geriatric depressive disorders varies from 10 to 20% in different regions (3, 4). A meta-analysis on the prevalence of depression among older adults (60 years and above) in India from 1997 to 2016 revealed that 34% of older adults in India suffer from various depressive disorders (5).

Protocol for A systematic review and meta-regression On Effectiveness of Problem-solving therapy for management of Geriatric Depression

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RESEARCH

Open Access



What our children lost and gained at the time of school closure during the Covid-19 pandemic: a study on psychological distress, behavioural concerns and protective factors of resilience among preschool children in Kerala, India

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Abstract

Background The pandemic has put at risk the social and emotional development of children on account of the paucity of arenas for social interaction. This study from Kerala, India was conducted to assess the resilience factors, behavioural concerns, psychological distress symptoms among the children aged 3 to 5 years. We also tried to look into the lost opportunities that could have aided the social and emotional development of children like peer interaction, child care hours.

Methods The cross-sectional study was conducted among the children aged 3 to 5 years. A total of 535 children attending the immunisation clinics were enrolled by consecutive sampling. Devereux Early Childhood Assessment P2 (DECA P2) questionnaire was used to assess the levels of resilient factors and behavioural concerns in the study population.

Results We observed a high proportion of children in the area of need category of protective factors under DECA P2. The proportion of children falling under area of concern was 64.5%, 49%, 68.4% for attachment/relationship, self-regulation, and initiative respectively. 24.9% study subjects have a behavioural concern score that puts them in the area of need category. The logistic regression model we created identified 'Male Gender,' 'Mothers could spend only less time for child care' and 'electronic devices used as pacifier' as significant predictors for belonging to Area of need Behavioural Concerns T score category.

Conclusion A large proportion of children aged between 3 to 5 years with reported behavioural concerns and lack of protective factors for socioemotional development. This can be attributed partly to the ongoing pandemic and its associated restrictions. The increased child care hours invested by parents or grandparents could have sized

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Self-care assessment among type 2 diabetes mellitus patients using summary of diabetes selfcare activities (SDSCA) scale attending NCD clinic of a tertiary care centre

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ABSTRACT

Introduction: Diabetes mellitus has become a global burden over the past years. Most of the people are not aware of a proper way of diabetes self-care practices. This study was to assess the self-care practices among type 2 diabetes mellitus patients by attending the NCD clinic of a tertiary healthcare centre. **Methodology:** This is a hospital-based cross-sectional study, done in a tertiary care center. Participants were diabetic patients who attended NCD clinic. 100 participants were included in the study. Data collection was by using summary of diabetes self-care activities (SDSCA) scale. Scores were there for different domains of self-care. Total scores ranged from 0 to 14/21/35 depending on the domain. Data collection was by interview method. Data analysis was done in SPSS 16. **Result and Discussion:** Mean age of the study population was 60.95 ± 9.5 years. Majority were females. Mean duration of the disease among the study population was 9.45 ± 8.37 years, ranging from 1 to 50 years. Highest mean score was observed in foot care in the present study followed by adherence to foot care. Adequate self-care practices were observed in foot care 93%, adherence to medication 90%, diet 46%, exercise 49%, blood sugar monitoring 55%. This study was similar to other studies done in hospital in different parts. Community-based studies showed a difference. This study sheds a light on importance of following a proper healthy diet and also shows that the higher degree of adherence of this population is to medication.

Keywords: Adherence to self-care, foot care, self-care, summary of diabetes self-care activities (SDSCA) scale

Introduction

Diabetes mellitus stands as a significant global health concern, affecting millions of individuals worldwide and posing a substantial burden on healthcare systems. World

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Health Organization (WHO)^[1] estimated that about 422 million people worldwide have diabetes, the majority living in low-and middle-income countries, and 1.5 million deaths are directly attributed to diabetes each year. As the prevalence of diabetes continues to rise, effective management strategies become increasingly imperative to mitigate its complications and improve patient outcomes. The management of diabetes mellitus encompasses a multifaceted approach, including lifestyle

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Original Article

Musculoskeletal morbidity and associated factors among designated sanitation workers employed by Thiruvananthapuram corporation and its possible implications in primary care: A cross-sectional study

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ABSTRACT

Introduction: Sanitation workers do physically demanding job like collecting, segregating, and disposing waste. They are prone to develop musculoskeletal problems. The study aimed to measure sociodemographic profile and musculoskeletal morbidity among sanitation workers employed by the Thiruvananthapuram corporation. **Objectives:** To estimate the prevalence of musculoskeletal pain among, sanitation workers employed by Thiruvananthapuram corporation and factors associated with it. **Methodology:** A cross-sectional study was conducted in Thiruvananthapuram corporation. The designated sanitation workers employed by Thiruvananthapuram corporation were study population. 165 workers sampled out of 641 workers, working for not less than 12 months from before initiation of study, were included in study and were selected by simple random sampling. Data were collected using semistructured questionnaire, entered into MS Excel, analysed appropriately using appropriate statistical software. The prevalence of musculoskeletal pain during work during the last 1 year was assessed using Standardised Nordic questionnaire adopted in local language Malayalam. Socioeconomic factors and risk factors related to nature of work were also studied. Association between sociodemographic factors, risk factors and musculoskeletal morbidity was also tested statistically. **Results:** Of total study participants, 73 (44.2%) had felt knee pain in any of the knees or both knees, 53 (32.3%) had low back pain during the past 1-year period, followed by ankle pain and shoulder pain which 34 (21.6%) and 29 (17.9%) of participants reported. Overall, pain in any one of the body part was reported by 111 (67.3%) participants. **Conclusion:** The study revealed high burden of musculoskeletal pain like knee pain, low back pain, ankle and shoulder. There is a need to take measures to reduce musculoskeletal pain and morbidities among sanitation workers employed by the corporation. Mostly, they are of older age, majority female gender and are prone to develop diseases of musculoskeletal system. Better ergonomic practices, mechanisation and health education will be beneficial to them.

Keywords: Knee pain, low back pain, musculoskeletal morbidity, musculoskeletal pain, sanitation workers, solid waste management

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Introduction

Musculoskeletal morbidity among sanitation workers is a pressing public health concern, particularly in the context of solid waste management. World Health Organization mention musculoskeletal disorders are a leading cause of disability

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A study on the price variability of branded medicines and Jan aushadi versions of selected commonly prescribed psychiatric medications in India using a cost-comparative approach and a passive evaluation of the Jan aushadhi scheme in India

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ABSTRACT

Introduction: The cost of medications poses a significant financial burden on patients. It limits access and adherence to treatment. Psychiatric disease burden is rising and it needs treatment for long durations. The high cost of branded medicines and lack of access to medicines at affordable prices can limit adherence. **Methodology:** A cost comparison study was done to investigate the price difference between branded and Jan aushadhi versions of 20 selected psychiatric drugs was done at the Department of Community Medicine of a Government medical college in Southern India. The average (mean) price of branded medicines of each drug was calculated with minimum, and maximum using online data, and comparison was done by calculating the percentage price difference between branded and Jan aushadhi medicines. The overall percentage price difference between branded and Jan aushadhi medicines was calculated. **Results:** The overall percentage price difference between branded and Jan aushadhi medicines was +252% for antipsychotics, indicating that the mean branded price was 252% (2.52 times) Jan aushadhi price. Similarly, the overall percentage price difference between the mean branded price and Jan aushadhi price among antidepressants was +277.54%, and the overall percentage price difference between mean branded price and Jan aushadhi was +227.73% for anticonvulsants. Similarly, price differences of maximum and minimum branded prices and Jan aushadhi were high. **Conclusion:** The study was able to estimate variation in the price of branded drugs and compare the price of branded medicines with Jan aushadhi by estimating price differences. The results of the study are useful in further reference regarding the subject for public, policy makers and healthcare providers. It gives valuable evidence into medication costs in India.

Keywords: Cost-comparison, Jan aushadhi, price difference, price of branded medicine

Introduction

The cost of medications can pose a financial burden on patients, leading to disparities in access and adherence to treatment. The

worldwide Psychiatric disease burden necessitates affordable treatment options. However, the high cost of brand-name medications can limit treatment access for many patients, especially in low-income and middle-income countries.^[1] The prescription of low-cost generic drugs can improve treatment adherence and follow-up visits and help primary care physicians follow-up patients regularly and get their patient's diseases in

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Original Research Article

Study on clinical, histopathological and dermoscopic features of palmoplantar pustulosis and palmoplantar psoriasis with pustules

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ABSTRACT

Background: Palmo-plantar pustulosis (PPP) and palmoplantar psoriasis with pustules (PPso)/Palmoplantar pustular psoriasis are entities that present with chronic cyclical eruptions of vesicles and pustules of palms and soles, which were initially considered to be similar but was defined as separate entities by the international psoriasis council in 2007. Individuals with PPP are at increased risk of psoriasis vulgaris, psoriatic arthritis, autoimmune thyroid disease and 90% of pustulosis patients can have psoriasis-like rash at some stage of the disease. Aim was to assess the clinical, histopathological and dermoscopic features of PPP and palmoplantar psoriasis with pustules.

Methods: A cross sectional analysis of all patients who presented to us over 1 year with vesicles and/or pustules of hands and/or feet and were diagnosed with PPP and palmoplantar psoriasis with pustules/palmoplantar pustular psoriasis, both clinically and histologically, were done. The severity was analysed using palmoplantar pustulosis area severity index (PPPASI) and the clinical, histological and dermoscopic features were noted.

Results: Twenty-four patients were categorized into 2 groups of 12 each, with a male predominance in both the groups. Majority (66.6%) of PPP belonged to the age group of 20-40 years whereas 83% of PPso belonged to >40 years of age. Dermoscopic findings noted in both groups were translucent yellow areas, yellow/red-brown globules, dotted regularly arranged vessels, yellow crust and globules following dermatoglyphics.

Conclusions: The study, though with limited sample size, highlights few clinical, histopathological and dermoscopic features which helps in differentiating the two groups.

Keywords: Psoriasis, Vesicles, Pustules, Dermoscopy, Palmoplantar pustulosis

INTRODUCTION

Palmoplantar pustulosis (PPP) is a chronic disease characterized by chronic cyclical eruption of sterile vesicles which turn into vesiculopustules/pustules, scales and erythema occurring on an otherwise normal skin. Individuals with PPP are at increased risk of psoriasis vulgaris, psoriatic arthritis, and autoimmune thyroid disease.¹ PPP can be precipitated by bacterial infections like tonsillitis, sinusitis etc.²

Pustular psoriasis is divided into generalized and localized, and the former includes Von-Zumbusch type, impetigo herpetiformis (acute generalised pustular psoriasis of pregnancy), annular and circinate forms, juvenile and infantile pustular psoriasis, and a generalized form of acrodermatitis continua of Hallopeau (ACH) and the localized form includes PPP and ACH involving the distal phalanges and nails of the hands and feet.³ However, PPP is a controversial entity whose association with psoriasis is debated. Primary pustules do not form part of the spectrum of PV except when pustules arise



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Research Paper

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ROLE OF BLOOD CULTURE FOR SEPSIS IN THE EMERGENCY DEPARTMENT

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ABSTRACT

Introduction

Sepsis is a major cause of emergency medicine department (EMD) admission. It is associated with high morbidity and mortality. The rapid identification of sepsis and initiation of treatment play critical roles in the optimal management of patients with bloodstream infections and their survival. In our study, we tried to find out the prevalence of positive blood culture in the emergency department and its role in identifying the severity and prognosis of sepsis.

Methods

2-year prospective survey of 80 septic patients who were admitted to the EMD of a tertiary care centre in South India. Chi-square test was done to find the association between mortality and the blood culture.

Results

In our study population, the mean age was 56.99 ± 16.329 years. 59% of patients had severe sepsis and 41% developed septic shock. The mortality rate of patients admitted with severe sepsis and septic shock are 23.4% and 87.9% respectively. 45% of blood culture-positive cases had severe sepsis and 55% of cases had septic shock on admission to EMD. There is no statistically significant correlation between blood culture and severity of sepsis. ($p = 0.238$) Patients were followed up for 45 days. We did not find any statistically significant correlation between blood culture-positive cases and mortality. ($p = 0.197$)

Conclusion

Sepsis is a medical emergency. Prompt and effective treatment should be initiated as early as possible. In patients with sepsis, initiation of prompt antibiotics is the critical step for treating these life-threatening infections. Obtaining a blood culture in the EMD can be a time-consuming procedure as it needs to be done meticulously with all aseptic precautions. Hence, if there is a clinical suspicion of sepsis, most appropriate antibiotics should be started as early as possible according to the local antibiogram. Antibiotics should not be delayed for blood culture sampling in EMD.

Key words: Sepsis, Septic Shock, EMD – Emergency Medicine Department, Antibiotics

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Corrected: Evolving Patterns of Etiological Profiles and Susceptibility Trends of Healthcare-Associated Infections Since Inception: A Meta-Analysis

Purvi S. Khristi ^{1, 2}, Remya P. A ³, Jeswin Chandrasekhar ⁴, Ami C. Patel ⁵

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This article has been corrected.

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This article has been revised to change the affiliation for Jeswin Chandrasekhar. His department has been changed from Microbiology to Pediatrics. Additionally, a second affiliation has been added for Purvi Khristi: Microbiology, Dharmasinh Desai University, Nadiad, India.

Abstract

Over six decades, global surveillance has revealed major shifts in healthcare-associated infections and antimicrobial resistance. Synthesizing data from multicontinental studies spanning 1992–2021, early reports showed balanced Gram-positive and Gram-negative pathogens with rising methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococcus* (VRE). Subsequent findings indicated a shift toward multidrug-resistant Enterobacterales, persistent ICU non-fermenters, and emerging *Candida auris*, alongside declining MRSA and *Clostridioides difficile* rates but increasing carbapenem resistance in *Klebsiella pneumoniae* and *Acinetobacter baumannii*. Low- and middle-income countries reported higher infection rates and greater Gram-negative burdens. Overall, infections have transitioned from staphylococcal dominance to multidrug-resistant Gram-negative pathogens and fungi, highlighting the need for locally tailored infection control, rapid diagnostics, and stewardship strategies.

Categories: Family/General Practice, Quality Improvement, Infectious Disease

Keywords: acinetobacter baumannii, antimicrobial resistance, candida auris, carbapenem-resistant enterobacterales (cre), clostridioides difficile, extended-spectrum β -lactamase (esbl), healthcare-associated infections, methicillin-resistant staphylococcus aureus (mrsa), pseudomonas aeruginosa, vancomycin-resistant enterococci (vre)

Introduction And Background

The World Health Organization defines healthcare-associated infections (HAIs) as the most frequent adverse events in healthcare, posing a disproportionate burden in low- and middle-income countries [1]. HAIs develop during the course of care and are absent at admission, often resulting in prolonged hospital stays, increased antimicrobial resistance (AMR), and higher healthcare costs [1]. HAIs include catheter-associated urinary tract infections (CAUTI), central line-associated bloodstream infections (CLABSI), surgical site infections (SSI), and ventilator-associated pneumonia (VAP), along with infections caused by resistant organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA), carbapenem-resistant Enterobacterales (CRE), and *Acinetobacter* [2].

Early systematic reviews on point prevalence surveys of antimicrobial use revealed extensive use of broad-spectrum antibiotics in non-European hospitals, reflecting a lack of standardized surveillance and stewardship programs in many settings [3]. Similarly, a large review of non-malarial febrile illnesses in South and Southeast Asia demonstrated a diverse etiological spectrum, highlighting gaps in standardized reporting and surveillance mechanisms for infectious diseases in the region [4].

Subsequent studies from India and other low- and middle-income countries (LMICs) began documenting the epidemiology and resistance patterns of key pathogens. Reports of bloodstream infections (BSIs), central line-associated bloodstream infections (CLABSI), and catheter-associated urinary tract infections (CAUTI) in intensive care units (ICUs) indicated a high burden of HAIs, often involving multidrug-resistant organisms [5]. Moreover, carbapenem-resistant *Klebsiella (K.) pneumoniae* and extended-spectrum beta-lactamase

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Original Research Article

Occurrence of *Blav_{VIM}* in carbapenem resistant isolates of *Klebsiella pneumoniae* in a tertiary care hospitalRemya P A^{1*}, Ami Chandrakant Patel¹, Jeswin Chandrasekhar²¹Dept. of Microbiology, Al-Azhar Medical College and Super Speciality Hospital, Thodupuzha, Kerala, India²Dept. of Paediatrics, Al-Azhar Medical College and Super Speciality Hospital, Thodupuzha, Kerala, India

Abstract

Background: *Klebsiella pneumoniae*, causes a wide range of infections in humans such as pneumonia, soft tissue infections, septicaemia, and urinary tract infections. The rise of multidrug resistant *Klebsiella pneumoniae* has alarming implications for public health, drastically limiting the treatment options for severe infections caused by this bacterium. *Blav_{VIM}* is a clinically important subgroup of Class B metallo beta-lactamases, posing a significant challenge to antibiotic therapy.

Aim and Objective: This study aimed to investigate the occurrence of *bla_{VIM}* gene in *K. pneumoniae* isolates, and its co-existence with other carbapenemase genes.

Materials and Methods: The study analysed a collection of 200 unique clinically relevant *K. pneumoniae* isolates recovered from diverse clinical samples over a 12 month period. Antibiotic susceptibility testing was conducted using the disc diffusion technique, adhering to CLSI guidelines, to assess the effectiveness of diverse antimicrobial classes against the isolates. Polymerase chain reaction (PCR) assays were employed to identify the presence of the *bla_{VIM}* gene in the isolated strains.

Results: Of the 200 isolates, 50 (25%) were resistant to meropenem by disc diffusion method. *Blav_{VIM}* was detected in 9 (18%) isolates by PCR. They were isolated from urine (n=7), exudative specimen (n=1) and respiratory (n=1). Co-existence of other carbapenemase genes such as *bla_{IMP}*, *bla_{NDM}*, *bla_{OXA-48}* and *bla_{KPC}* were not detected alongside the *bla_{VIM}* in this study.

Conclusion: Detection of the resistance mechanism by molecular methods such as PCR will help to prevent therapeutic failure and the spread of multidrug resistant *Klebsiella pneumoniae*.

Keywords: *Klebsiella pneumoniae*, Antimicrobial susceptibility, Metallo beta lactamases, *Blav_{VIM}*.

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1. Introduction

K.pneumoniae (*K.pneumoniae*), is a versatile pathogen responsible for a broad spectrum of infections, encompassing life threatening septicemia, respiratory pneumonia, suppurative infections and urinary tract infections.¹ Carbapenems (imipenem, meropenem, ertapenem, and doripenem) represent the final therapeutic resort for combating severe infections triggered by multidrug resistant bacteria, owing to their expansive antimicrobial spectrum and proven efficacy against recalcitrant strains. A worldwide surge in carbapenem resistance in *Enterobacteriaceae* has been documented, sparking international concern.²

Carbapenemases, are enzymes that hydrolyze beta-lactam antibiotics, including carbapenems, thereby conferring resistance to these drugs.³ In *Enterobacteriaceae*, the carbapenem hydrolysing beta-lactamases are the class A carbapenemases (eg. KPC), class B carbapenemases (eg. IMP, VIM and NDM) and class D carbapenemases (eg. OXA-48 and its variants).^{2,4}

The class B metallo beta lactamases (MBL) family encompasses several notable enzymes, including Verona integron encoded metallo beta lactamases (VIM), Imipenemase (IMP) and New Delhi metallo beta lactamase (NDM), which confer resistance to a broad range of beta-

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Prevalence and Occurrence of Type 1 Fimbriae in *Klebsiella pneumoniae*

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ABSTRACT

Background: *Klebsiella pneumoniae* causes both community acquired and nosocomial infections. The various virulence factors have been well characterised in *K. pneumoniae* includes: capsule, lipopolysaccharides, siderophores and fimbriae. *FimH* 1, encoding for fimbriae and mediate adhesion.

Aim and objective: The aim of the study was to determine drug susceptibility and the prevalence of *FimH* 1 genes among clinical isolates of *K. pneumoniae*.

Materials and methods: A total of 200 isolates collected over a period of one year, were included in this study. The source of the isolates were urine (n=74), respiratory (n=73), exudates (n=50) and blood (n=3). For all the isolates antimicrobial susceptibility testing by disc diffusion was done. Polymerase chain reaction was performed for the detection of *FimH* 1 gene.

Results: The susceptibility of the study isolates to different classes of antimicrobial agent was: meropenem (75%), amikacin (69%), piperacillin/tazobactam (67.5%), ciprofloxacin (59%), and cefotaxime (53.5%). *FimH*-1 gene was detected in 55% of the total isolates.

Conclusion: *FimH* 1 was not a major mediator associated with adherence in this study. Detection of virulence gene such as type 1 fimbriae will help to understand their occurrence in different strains of *K. pneumoniae* and how they function in different host environments. Most of the isolates were resistant to third generation of cephalosporins. Knowing the prevalence of antimicrobial resistance helps to formulate infection control practices and formulating antimicrobial therapy.

Keywords: *Klebsiella pneumoniae*, virulence gene, fimbrial adhesin, type 1 fimbriae, antimicrobial susceptibility, disc diffusion.

INTRODUCTION

Klebsiella pneumoniae (*K.pneumoniae*) is an important opportunistic pathogen that causes urinary tract infections, septicemia or pneumonia, especially in the immunocompromised.[1] There are four major classes of virulence factors that have been well characterised in *K.pneumoniae* includes; capsule, lipopolysaccharides, siderophores and fimbriae. [2] Adherence to host cell is the first step in the infectious process. In *Enterobacteriaceae*, adhesive properties are mediated by different types of



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Key Words

ESBL, enterobacteriaceae, *E. coli*,
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Understand the Baseline Prevalence Rate of ESBLs and Multidrug Resistance in Enterobacteriaceae from Different Clinical Sample in a Tertiary Care Hospital Located in Rural Part of Kerala

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ABSTRACT

To overcome a problem of antimicrobial resistance and start effective Antimicrobial stewardship program we need to understand the resistance pattern of the organism. This study aimed to deliver the indication of different resistant profiles of clinically isolated Enterobacteriaceae from different source of samples from Al-Azhar Medical college and Super speciality hospital, prevalence of multidrug resistant (MDR), extensively drug-resistant (XDR) and pan-drug resistant (PDR) bacteria. A total of 432 Gram-negative bacteria were collected from different sources (urine, pus, sputum, ET aspirate, vaginal swab, catheter tip, ear swab, throat swab, aspirated body fluid). Out of all Gram negative bacteria Enterobacteriaceae accounted for 353 (81.71%). Samples were sub cultured and identified according to their cultural characteristics and biochemical tests. Antimicrobial susceptibility test was performed for 24 antibiotics from 11 categories against all isolated Enterobacteriaceae according to the recommendation of Clinical and Laboratory Standards Institute (CLSI). The result showed that out of 432 Gram negative isolates, *Escherichia coli* and *Klebsiella* species were predominant isolates with the percentage of 40.97-37.5% respectively. Rate of ESBL was highest among *E.coli* followed by *Enterobacter* species 52.54-50% respectively. The MDR rate was highest among *Klebsiella* species followed by *E.coli* 46.29-42.93% respectively.

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Corrected: Evolving Patterns of Etiological Profiles and Susceptibility Trends of Healthcare-Associated Infections Since Inception: A Meta-Analysis

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This article has been corrected.

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This article has been revised to change the affiliation for Jeswin Chandrasekhar. His department has been changed from Microbiology to Pediatrics. Additionally, a second affiliation has been added for Purvi Khristi: Microbiology, Dharmsinh Desai University, Nadiad, India.

Abstract

Over six decades, global surveillance has revealed major shifts in healthcare-associated infections and antimicrobial resistance. Synthesizing data from multicontinental studies spanning 1992-2021, early reports showed balanced Gram-positive and Gram-negative pathogens with rising methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococcus* (VRE). Subsequent findings indicated a shift toward multidrug-resistant Enterobacterales, persistent ICU non-fermenters, and emerging *Candida auris*, alongside declining MRSA and *Clostridioides difficile* rates but increasing carbapenem resistance in *Klebsiella pneumoniae* and *Acinetobacter baumannii*. Low- and middle-income countries reported higher infection rates and greater Gram-negative burdens. Overall, infections have transitioned from staphylococcal dominance to multidrug-resistant Gram-negative pathogens and fungi, highlighting the need for locally tailored infection control, rapid diagnostics, and stewardship strategies.

Categories: Family/General Practice, Quality Improvement, Infectious Disease

Keywords: acinetobacter baumannii, antimicrobial resistance, candida auris, carbapenem-resistant enterobacterales (cre), clostridioides difficile, extended-spectrum β -lactamase (esbl), healthcare-associated infections, methicillin-resistant staphylococcus aureus (mrsa), pseudomonas aeruginosa, vancomycin-resistant enterococci (vre)

Introduction And Background

The World Health Organization defines healthcare-associated infections (HAIs) as the most frequent adverse events in healthcare, posing a disproportionate burden in low- and middle-income countries [1]. HAIs develop during the course of care and are absent at admission, often resulting in prolonged hospital stays, increased antimicrobial resistance (AMR), and higher healthcare costs [1]. HAIs include catheter-associated urinary tract infections (CAUTI), central line-associated bloodstream infections (CLABSI), surgical site infections (SSI), and ventilator-associated pneumonia (VAP), along with infections caused by resistant organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA), carbapenem-resistant Enterobacterales (CRE), and *Acinetobacter* [2].

Early systematic reviews on point prevalence surveys of antimicrobial use revealed extensive use of broad-spectrum antibiotics in non-European hospitals, reflecting a lack of standardized surveillance and stewardship programs in many settings [3]. Similarly, a large review of non-malarial febrile illnesses in South and Southeast Asia demonstrated a diverse etiological spectrum, highlighting gaps in standardized reporting and surveillance mechanisms for infectious diseases in the region [4].

Subsequent studies from India and other low- and middle-income countries (LMICs) began documenting the epidemiology and resistance patterns of key pathogens. Reports of bloodstream infections (BSIs), central line-associated bloodstream infections (CLABSI), and catheter-associated urinary tract infections (CAUTI) in intensive care units (ICUs) indicated a high burden of HAIs, often involving multidrug-resistant organisms [5]. Moreover, carbapenem-resistant *Klebsiella (K.) pneumoniae* and extended-spectrum beta-lactamase

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Original Research Article

Occurrence of *Blav_{VIM}* in carbapenem resistant isolates of *Klebsiella pneumoniae* in a tertiary care hospitalRemya P A^{1*}, Ami Chandrakant Patel¹, Jeswin Chandrasekhar²¹Dept. of Microbiology, Al-Azhar Medical College and Super Speciality Hospital, Thodupuzha, Kerala, India²Dept. of Paediatrics, Al-Azhar Medical College and Super Speciality Hospital, Thodupuzha, Kerala, India

Abstract

Background: *Klebsiella pneumoniae*, causes a wide range of infections in humans such as pneumonia, soft tissue infections, septicemia, and urinary tract infections. The rise of multidrug resistant *Klebsiella pneumoniae* has alarming implications for public health, drastically limiting the treatment options for severe infections caused by this bacterium. *Blav_{VIM}* is a clinically important subgroup of Class B metallo beta-lactamases, posing a significant challenge to antibiotic therapy.

Aim and Objective: This study aimed to investigate the occurrence of *blav_{VIM}* gene in *K. pneumoniae* isolates, and its co-existence with other carbapenemase genes.

Materials and Methods: The study analysed a collection of 200 unique clinically relevant *K. pneumoniae* isolates recovered from diverse clinical samples over a 12 month period. Antibiotic susceptibility testing was conducted using the disc diffusion technique, adhering to CLSI guidelines, to assess the effectiveness of diverse antimicrobial classes against the isolates. Polymerase chain reaction (PCR) assays were employed to identify the presence of the *blav_{VIM}* gene in the isolated strains.

Results: Of the 200 isolates, 50 (25%) were resistant to meropenem by disc diffusion method. *Blav_{VIM}* was detected in 9 (18%) isolates by PCR. They were isolated from urine (n=7), exudative specimen (n=1) and respiratory (n=1). Co-existence of other carbapenemase genes such as *bla_{IMP}*, *bla_{NDM}*, *bla_{OXA-48}* and *bla_{KPC}* were not detected alongside the *blav_{VIM}* in this study.

Conclusion: Detection of the resistance mechanism by molecular methods such as PCR will help to prevent therapeutic failure and the spread of multidrug resistant *Klebsiella pneumoniae*.

Keywords: *Klebsiella pneumoniae*, Antimicrobial susceptibility, Metallo beta lactamases, *Blav_{VIM}*.

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1. Introduction

K. pneumoniae (*K. pneumoniae*), is a versatile pathogen responsible for a broad spectrum of infections, encompassing life threatening septicemia, respiratory pneumonia, suppurative infections and urinary tract infections.¹ Carbapenems (imipenem, meropenem, ertapenem, and doripenem) represent the final therapeutic resort for combating severe infections triggered by multidrug resistant bacteria, owing to their expansive antimicrobial spectrum and proven efficacy against recalcitrant strains. A worldwide surge in carbapenem resistance in *Enterobacteriaceae* has been documented, sparking international concern.²

Carbapenemases, are enzymes that hydrolyze beta-lactam antibiotics, including carbapenems, thereby conferring resistance to these drugs.³ In *Enterobacteriaceae*, the carbapenem hydrolysing beta-lactamases are the class A carbapenemases (eg. KPC), class B carbapenemases (eg. IMP, VIM and NDM) and class D carbapenemases (eg. OXA-48 and its variants).^{2,4}

The class B metallo beta lactamases (MBL) family encompasses several notable enzymes, including Verona integron encoded metallo beta lactamases (VIM), Imipenemase (IMP) and New Delhi metallo beta lactamase (NDM), which confer resistance to a broad range of beta-

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Prevalence and Occurrence of Type 1 Fimbriae in *Klebsiella pneumoniae*

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ABSTRACT

Background: *Klebsiella pneumoniae* causes both community acquired and nosocomial infections. The various virulence factors have been well characterised in *K. pneumoniae* includes: capsule, lipopolysaccharides, siderophores and fimbriae. *FimH* 1, encoding for fimbriae and mediate adhesion.

Aim and objective: The aim of the study was to determine drug susceptibility and the prevalence of *FimH* 1 genes among clinical isolates of *K. pneumoniae*.

Materials and methods: A total of 200 isolates collected over a period of one year, were included in this study. The source of the isolates were urine (n=74), respiratory (n=73), exudates (n=50) and blood (n=3). For all the isolates antimicrobial susceptibility testing by disc diffusion was done. Polymerase chain reaction was performed for the detection of *FimH* 1 gene.

Results: The susceptibility of the study isolates to different classes of antimicrobial agent was: meropenem (75%), amikacin (69%), piperacillin/tazobactam (67.5%), ciprofloxacin (59%), and cefotaxime (53.5%). *FimH*-1 gene was detected in 55% of the total isolates.

Conclusion: *FimH* 1 was not a major mediator associated with adherence in this study. Detection of virulence gene such as type 1 fimbriae will help to understand their occurrence in different strains of *K. pneumoniae* and how they function in different host environments. Most of the isolates were resistant to third generation of cephalosporins. Knowing the prevalence of antimicrobial resistance helps to formulate infection control practices and formulating antimicrobial therapy.

Keywords: *Klebsiella pneumoniae*, virulence gene, fimbrial adhesin, type 1 fimbriae, antimicrobial susceptibility, disc diffusion.

INTRODUCTION

Klebsiella pneumoniae (*K.pneumoniae*) is an important opportunistic pathogen that causes urinary tract infections, septicemia or pneumonia, especially in the immunocompromised.[1] There are four major classes of virulence factors that have been well characterised in *K.pneumoniae* includes; capsule, lipopolysaccharides, siderophores and fimbriae. [2] Adherence to host cell is the first step in the infectious process. In *Enterobacteriaceae*, adhesive properties are mediated by different types of



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Key Words

ESBL, enterobacteriaceae, *E. coli*, klebsiella species, antimicrobials, multidrug resistance, PDR, XDR

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Understand the Baseline Prevalence Rate of ESBLs and Multidrug Resistance in Enterobacteriaceae from Different Clinical Sample in a Tertiary Care Hospital Located in Rural Part of Kerala

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ABSTRACT

To overcome a problem of antimicrobial resistance and start effective Antimicrobial stewardship program we need to understand the resistance pattern of the organism. This study aimed to deliver the indication of different resistant profiles of clinically isolated Enterobacteriaceae from different source of samples from Al-Azhar Medical college and Super speciality hospital, prevalence of multidrug resistant (MDR), extensively drug-resistant (XDR) and pan-drug resistant (PDR) bacteria. A total of 432 Gram-negative bacteria were collected from different sources (urine, pus, sputum, ET aspirate, vaginal swab, catheter tip, ear swab, throat swab, aspirated body fluid). Out of all Gram negative bacteria Enterobacteriaceae accounted for 353 (81.71%). Samples were sub cultured and identified according to their cultural characteristics and biochemical tests. Antimicrobial susceptibility test was performed for 24 antibiotics from 11 categories against all isolated Enterobacteriaceae according to the recommendation of Clinical and Laboratory Standards Institute (CLSI). The result showed that out of 432 Gram negative isolates, *Escherichia coli* and *Klebsiella* species were predominant isolates with the percentage of 40.97-37.5% respectively. Rate of ESBL was highest among *E.coli* followed by *Enterobacter* species 52.54-50% respectively. The MDR rate was highest among *Klebsiella* species followed by *E.coli* 46.29-42.93% respectively.



An Outbreak of Burkholderia Cepacia Complex Septicaemia in Pediatric Ward of a Tertiary Care Hospital, North Kerala

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ABSTRACT

Burkholderia (previously Pseudomonas) is a Gram negative bacilli commonly found in soil and moist environments [1]. Small hospital outbreaks due to a single contaminated source such as a disinfectant, intravenous solutions, nebulizer solutions, mouthwash and medical devices including respiratory-therapy equipment [1]. In our hospital, we had 3 reported cases of hospital acquired bloodstream infections caused by Burkholderia species from the pediatric ward. An outbreak investigation was conducted by the Hospital Infection Control committee. The source was identified as distilled water used for nebulization in the pediatric ward.

Key Words: *Burkholderia Cepacia Complex Septicaemia*



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INTRODUCTION

Burkholderia cepacia complex (BCC) is an opportunistic pathogen in hospitalized and immunocompromised patients [2]. A variety of human infections caused by BCC include bacteremia, septic arthritis, urinary tract infections, peritonitis and respiratory tract infections [2, 3]. The high level of intrinsic resistance in this organism, coupled with the lack of newer or effective antibiotics, makes treatment options very difficult [2]. They are also able to survive in the environment for prolonged periods with limited nutrition. They are widely distributed in natural habitats such as soil, water [3] and nutrient poor water [4]. B.cepacia was frequently found in nosocomial outbreaks due to contaminated disinfectants [5, 6], nebulizer solutions [7], mouth wash [8], medical devices, intravenous solutions [9, 10] due to contamination of lipid emulsion stoppers [11]. Reports of pseudo- bacteremia due to BCC has also appeared in the literature [12]. However, reports on outbreaks due to this organism from the Indian subcontinent is lacking.

We report an outbreak due to BCC which has occurred in the pediatric ward of our institute, probable source being distilled water used for nebulization.

CASE REPORTS

Case1

One year old male child, known case of hyper IgM syndrome, recurrent pneumonia admitted in pediatric ward with fever cough and respiratory distress. Blood culture sample was sent on third day of admission. Culture came positive for B.cepacia, sensitive to Cotrimoxazole, Ciprofloxacin, Levofloxacin, Piperacillin-Tazobactam. Patient was started on Piperacillin -Tazobactam symptomatically improved and got discharged.

Case2

One year old female child admitted in pediatric ward due to kerosene poisoning. On third day of admission patient developed febrile episodes and lethargy. Blood culture grew B.cepacia, sensitive to Cotrimoxazole, Ciprofloxacin, Levofloxacin, Piperacillin-Tazobactam. Patient was started on Levofloxacin symptoms subsided and got discharged.

Case3

One year old male child a case of bronchitis admitted in pediatric ward. On third day he developed high grade fever and blood culture was sent. Culture came positive for B.cepacia, sensitive to Cotrimoxazole, Ciprofloxacin, Levofloxacin, Piperacillin-Tazobactam. Patient was started on Piperacillin -Tazobactam, symptomatically improved and got discharged.

Microbiological analysis

From the pediatric ward within a period of two weeks three blood culture samples came positive. Gram stain was

Characterisation, Biofilm Formation and Antifungal Susceptibility Pattern of Candida Species in Cancer Patients at Kidwai Memorial Institute of Oncology, Bengaluru

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Conflict of interest: Nil

Abstract:

Background: Biofilm formation is seen in many pathogens like bacteria, fungi etc. It is one of the virulence factors of Candida species, an important pathogen and commensal. Indiscriminate use of antifungal agents, especially azole group in cancer patients may contribute to emergence of resistance in Candida isolates. Biofilm producing property of Candida also contributes to non-response to antifungals. Hence, speciation and detection of biofilm is useful for clinical management of Candida infections in cancer patients. Aims of this prospective study was to detect biofilm formation and antifungal susceptibility to Candida species isolated from different clinical samples in cancer patients.

Methods: A total of 40 clinically significant isolates of Candida species from various clinical samples were characterised with Gram's stain, germ tube test, carbohydrate fermentation test, chromogenic media and micro morphology on cornmeal agar. Biofilm formation was detected by three standard methods-Tissue culture plate method, Tube method and Congo red agar method. Antifungal susceptibility testing was performed manually with two antifungal agents of the azole group (fluconazole-25µg, voriconazole-1µg).

Results: Out of 40 candida isolates, 13 were Candida albicans and 27 were nonalbicans Candida (C.tropicalis-14, C.parapsilosis-5, C.glabrata-3, C.krusei-2, C.guilliermondii-2, and C.lusitaniae- 1). Biofilm production was seen in 31 Candida species (8 C.albicans and 23 nonalbicans Candida). Antifungal susceptibility was performed for all isolates of which 12 were fluconazole resistant and 3 were voriconazole resistant.

Conclusion: C.tropicalis (35%) was the most common candida species isolated from cancer patients. Biofilm formation was seen in 78% of Candida species (C.albicans -26% and nonalbicans candida-74%). Thirty percent Candida isolates were fluconazole resistant and 8% were voriconazole resistant. Considering high prevalence of nonalbicans Candida species and species-specific intrinsic resistance to antifungals in few of them, it is important to speciate candida isolates causing infections in cancer patients along with their biofilm formation and antifungal susceptibilities.

Keywords: Candida albicans; non-albicans candida; Cancer; Biofilm.

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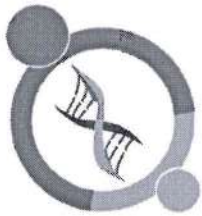
Introduction

Candidiasis is the commonest fungal disease causing superficial, subcutaneous, and systemic and opportunistic infections in humans [1]. The number of non-albicans candida species has expanded dramatically over the past 20 years, despite C. albicans being the most common species. Because of the shift, there is a decreased susceptibility to antifungals and a high mortality rate.

This requires prompt and accurate species identification, which improves our understanding of the risk factors, clinical traits, and outcomes associated with these pathogens to help clinicians choose the best treatment [2]. Cancer patients being immunosuppressed are vulnerable to infections. Since candidiasis is the most common disseminated fungal infection in cancer patients, an early

diagnosis of candidiasis is of great importance for patient management, as it leads to the selection of a species-specific antifungal therapy rapidly [3]. Biofilm formation is one of the virulence factors of Candida species. Early detection of biofilm production is useful for clinical management of Candida infections in cancer patients. Availability of key nutrients, chemotaxis towards surface, surface adhesins and presence of surfactants are some factors which influence biofilm formation.

Microorganisms growing in a biofilm are intrinsically more resistant to antimicrobial agents than planktonic cells [4]. Indiscriminate use of antifungal drugs, especially azole group in cancer patients may contribute to emergence of resistance in Candida isolates. [5]. Knowledge of the changing



A COMPARATIVE STUDY ON IODIXANOL VERSUS IOHEXOL IN INTRAVENOUS PYELOGRAPHY STUDIES IN A TERTIARY CARE HOSPITAL- A RANDOMIZED CONTROL STUDY

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ABSTRACT:

Background: Contrast-induced nephropathy, a complication associated with intravenous pyelography (IVP), is a recognized concern. However, the relative nephrotoxic potential of the iso-osmolar non-iodinated contrast medium (iodixanol) versus the low-osmolar contrast medium (iohexol) remains unclear. This single-center, Randomized Control studies involved 58 patients undergoing IVP, who were randomly assigned to receive either iodixanol or iohexol.

Materials: 58 patients with high risk for contrast-induced nephropathy, consisted of 25 (43.10%) patients with renal insufficiency and 16 (27.58%) with diabetes mellitus. The study assessed the nephrotoxic effects (contrast nephropathy) and the profiles of complement and cytokines between the two groups. The average contrast medium volume administered during each IVP procedure was 0.8 mL/kg.

Results: The overall incidence of contrast nephropathy was 04%, with one case in each group. No significant differences were observed in the rates of contrast nephropathy or allergic reactions between the iodixanol and iohexol groups. Additionally, there was no notable difference in cytokine 89% profiles. The overall incidence of allergic reactions was 17.24%. Early allergic reactions occurred in 03/29 (10.34%) of the Iohexol group patients and none in the Iodixanol group of patients. Late allergic reactions occurred in 03/29 (10.34%) of the Iohexol group and 02/29 (06.89%) of the Iodixanol group of patients ($p = 0.001$). One patient developed a severe skin rash due to a late adverse reaction following iodixanol administration. No fatalities were reported. Both iodixanol and iohexol are considered safe for routine IVP examinations, exhibiting a low nephrotoxicity profile, particularly in elderly or high-risk patients.

Conclusions: In conclusion, iodixanol and iohexol contrast media for routine IVP examinations are safe and have a low nephrotoxicity profile, particularly in elderly and high-risk patients. Late allergic reactions may be the most common adverse effect following the infusion of nonionic contrast media.

KEY WORDS: contrast, ivp, Iohexol, Iodixanol and Allergy

An Investigation on the Impact of Series of Small Group Oral Examinations on Student Performance in Pharmacology among Second Year Medical Students

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Conflict of interest: Nil

Abstract:

Background: Traditional, summative viva ineffectively imparts deep knowledge. This study assessed the impact of conducting a series of group viva on pharmacology learning.

Methods: After the first and second internal assessment (IA), students attended a series of 84 group viva voce sessions during the revision hours followed by a third internal assessment in pharmacology. Student performances were grouped as poor (<50%), good (50-75%) and excellent (75-100%) based on first and second IA written exam marks. The marks scored by students in written internal assessment exams (Pre and post group viva) and university exams were analysed retrospectively.

Results: The mean written exam scores (out of 40 marks) of first (M1), second (M2) internal assessment, first paper (M3) and second paper (M4) of third internal assessment were 15.97 ± 5.72 , 25.60 ± 5.77 , 22.36 ± 5.59 and 22.64 ± 5.30 respectively. The mean pre and post viva written exam scores were 41.57 ± 10.36 and 45.00 ± 10.42 respectively (out of 80 marks). The mean scores Post viva of written exam (M3 + M4) was statistically greater than pre viva (M1 + M2) for all the students across all categories except excellent performers. Students' achievement in university exams post viva was noteworthy. About eighty-eight percent of pre-viva poor performers improved to become good performers in university examinations, and 12% excelled as well; 76.3% of good performers became excellent. There were no poor performers in university exams.

Conclusions: Conducting a series of group viva voce had a positive impact on student performance in pharmacology.

Keywords: Group Viva Voce, Formative Assessment, Revision, Learning, Written Exams, Traditional Theory Viva Voce.

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Introduction

Irrational prescriptions can lead to therapeutic failure and negative patient outcomes. Theoretical and practical instruction in the concepts of rational prescribing is necessary to enhance the prescribing knowledge and skills of newly graduated medical professionals.[1] Rational treatment strategies require a deep understanding of pharmacology. But the existing evaluation format of a written exam, a practical exam, and traditional theory viva voce does not challenge students enough to learn. Viva

voce is used in medical education, clinical exams, and doctoral defences to assess deep knowledge, but its conventional summative, unstructured format has often made it unproductive.[2,3] In India, each student is currently required to participate in a theory viva by four examiners taken separately, with just three to five minutes allotted to each station. Since the viva voce is mostly summative in nature, the input students get from examiners may not be helpful in expanding their

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Conclusions: Conducting a series of group viva voce had a positive impact on student performance in pharmacology.

Keywords: Group Viva Voce, Formative Assessment, Revision, Learning, Written Exams, Traditional Theory Viva Voce.

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Introduction

Irrational prescriptions can lead to therapeutic failure and negative patient outcomes. Theoretical and practical instruction in the concepts of rational prescribing is necessary to enhance the prescribing knowledge and skills of newly graduated medical professionals.[1] Rational treatment strategies require a deep understanding of pharmacology. But the existing evaluation format of a written exam, a practical exam, and traditional theory viva voce does not challenge students enough to learn. Viva

voce is used in medical education, clinical exams, and doctoral defences to assess deep knowledge, but its conventional summative, unstructured format has often made it unproductive.[2,3] In India, each student is currently required to participate in a theory viva by four examiners taken separately, with just three to five minutes allotted to each station. Since the viva voce is mostly summative in nature, the input students get from examiners may not be helpful in expanding their

A Case Report on COVID-19 Vaccination Induced Heart Failure

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Abstract: Heart failure following the COVID-19 vaccination has been documented as a rare side effect. In this report, we describe the case of a 61-year-old woman with a history of heart disease in her family and previously detected mild atherosclerotic coronary artery disease who, 4 months after receiving her third dose of COVISHIELD vaccination against the COVID-19 virus, developed heart failure with a significantly reduced ejection fraction. Laboratory tests showed increased levels of N-terminal pro-brain natriuretic peptide (NT-proBNP). An ECG was taken, which indicated sinus rhythm (SR) at 114, left bundle branch block (LBBB), and QRS-125. An echocardiogram (ECHO) was done, which revealed Left Ventricular global hypokinesia, LVEF 30% MOD MR RV dysfunction, and dilated LA/RA RV dysfunction. Hence, she was diagnosed with heart failure with reduced ejection fraction (LVEF of 32%) and dilated cardiomyopathy with severe LV dysfunction. She was successfully discharged with advice to follow up regularly and with appropriate medical management. Through this case report, we aim to raise awareness of the potential for the COVID-19 vaccination to trigger certain immunological reactions that could probably lead to heart failure in an already predisposed individual who is at risk of myocardial injury.

Keywords: COVID-19, Heart failure, COVISHIELD, Vaccination

1. Introduction

The COVID-19 virus and its potentially fatal consequences can be prevented in large part by vaccination. However, immunisations might cause unfavourable reactions that, in rare instances, may have fatal outcomes, including myocarditis.⁽¹⁾ There have been rare reports of heart failure occurring after COVID-19 vaccinations, but it is important to note that the incidence of heart failure following vaccination is very low, and in most cases, the benefits of vaccination outweigh the risks. It is important to emphasize that the overall risk of severe illness, hospitalisation, and death from COVID – 19 is much higher than the risk of myocarditis or pericarditis from vaccination. These vaccines have been shown to be highly effective in preventing severe illness and death from COVID – 19 and widespread vaccination is a critical tool in controlling the pandemic.⁽²⁾

As the world continues to grapple with the COVID-19 pandemic, vaccines have emerged as a critical tool in the fight against the disease. While vaccines have been shown to be highly effective in preventing severe illness, hospitalisation, and death from COVID-19, there have been rare reports of adverse events associated with vaccination. One such event is heart failure, which has been reported in some individuals following COVID-19 vaccination.

The precise mechanism by which COVID-19 causes myocardial injury is still unknown. However, it is suspected that the main mechanisms involved in the myocardial lesions are direct damage to cardiomyocytes, caused by systemic inflammation, myocardial interstitial fibrosis, and exaggerated cytokine responses by type-1 and type-2 T-helper cells, destabilisation of coronary plaque, hypoxia, and interferon-mediated immune responses.⁽³⁾

However, it is important to note that the risk of heart failure as a result of vaccination is much lower than the risk of heart failure from the disease that the vaccine is designed to protect against.⁽⁴⁾

2. Case Report

A 61 year old female with a family history of heart disease consulted a physician as she had an episode of chest discomfort. She also had a similar episode of angina on the way to the hospital. Physician advised her to take ECG. In view of ECG changes, she presented to a cardiologist on 2nd December 2020. Upon history taking, it was found that she is diabetic for 10 years, on oral hypoglycemic agents (OHA) and s/p thyroidectomy due to multiple nodular goitre. The initial physical examination showed normal blood pressure and no apnea on exertion (AOE), with no signs of cardiac congestion. She was also found to have fair effort tolerance.

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REPORT ON ATENOLOL INDUCED AV BLOCK*****¹Akhila Ann Cherian, ²Dr. Sara Kurien K. and ³Dr. Prakash Krishnan**¹Pharm D Intern, Nazareth College of Pharmacy, Othara, Thiruvalla.²Assistant Professor, Department of Pharmacology.³Professor, Department of Pharmacology.***Corresponding Author: Akhila Ann Cherian**

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ABSTRACT

Atenolol is a second-generation β -blocker that reduces heart rate and blood pressure and decreases myocardial contractility. It is an FDA-approved drug indicated in management of hypertension, angina pectoris, and acute myocardial infarction. The most common side effect associated with Atenolol is fatigue followed by hypotension, bradycardia, cold extremities, depression, diarrhea, vertigo, dizziness and rarely, second/third degree AV block. So far only 45 cases of Atenolol induced AV block have been reported. Here we present the case of a 79-year-old male with Second-degree Atrio-Ventricular block while on treatment with Atenolol for therapeutic management of hypertension.

KEYWORDS: Atenolol, AV block, Ambulatory ECG, Mobitz type II block.**INTRODUCTION**

The traditional indications of Atenolol include long-term management of angina, myocardial infarction and hypertension. Atenolol also has off-label indications such as treatment of arrhythmias, migraine prophylaxis, paroxysmal supraventricular tachycardia, alcohol withdrawal, thyrotoxicosis, and prophylaxis against secondary myocardial infarction.^[1,2] Atenolol is commonly known to have adverse reactions like nausea, diarrhea, bradycardia, tachycardia, hypotension, atrial fibrillation, pulmonary embolism and even heart block.

Atrio-ventricular block is a less common adverse effect of Atenolol. Atrio-Ventricular conduction block is caused by a delay in the conduction of electrical impulses between the ventricles and atria. It is indicated by a prolonged PR interval in an electrocardiogram. First-degree, second-degree, and third degree are the different types of conduction blocks. Wenckebach or Mobitz type I and Mobitz type II are the two sub-varieties of second-degree atrioventricular blockages.^[3,4] In general, individuals with second degree AV block may exhibit no symptoms at all or symptoms such as syncope and dizziness. Based on the degree of conduction system impairment, the second-degree heart block can be either permanent or transitory. If left untreated, the Mobitz type II block can cause mortality as it has the potential to develop into a total heart block.^[5] According to a study conducted by T.M.M

Dragos et.al., in 2022, around 0.9% patients on β -blockers developed a second-degree AV block.^[6]

β -blockers, therefore, are now gaining attention as a cause of acquired complete atrioventricular (AV) block in clinical practice. This is often stated logically in reviews published in highly esteemed journals^[7,8] and in cardiology textbooks.^[9,10] However, it is unclear if AV block discovered in patients treated with beta-blockers merely unmasks the presence of serious underlying AV conduction disease. Moreover, there is little evidence about the natural history and prognosis of patients with drug-related AV block. This is of clinical importance, as pacemaker implantation is generally considered unnecessary in patients with drug-induced AV block. Therefore, we discuss the particular case of Atenolol induced AV block.

CASE PRESENTATION

A 79-year-old male came to hospital with complaints of frequent episodes of syncope. He is a known case of Hypertension and Type II Diabetes Mellitus for 30 years. For hypertension and diabetic control, he was on Tab Atenolol 100 mg once daily (since 2020) and Metformin 500 mg once daily respectively. He was doing very well until October 2021, during which he had his first episode of syncope and the patient concurrently experienced dizziness. He experienced an epileptic kind of episode. After a couple of days, the patient had similar episodes

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A case report on bortezomib-induced paralytic ileus

M. Manish Mohan¹, Lidiya Anna Kuriyan², Chepsy C. Philip², R. S. Jacob Jesurun², Prakash Krishnan²

Abstract:

Bortezomib is the first anticancer proteasome inhibitor used in the initial treatment of multiple myeloma in combination with cyclophosphamide and dexamethasone. Subcutaneous and intravenous forms of bortezomib are available. The common adverse drug reactions (ADRs) associated with bortezomib include peripheral neuropathy, fatigue, neuralgia, dizziness, diarrhea, constipation, and abdominal pain. Paralytic ileus is a rare ADR of bortezomib. We report the case of a patient with multiple myeloma who developed paralytic ileus and presented with abdominal distension and constipation; all of which resolved with medical attention once the medication was stopped, indicating a clear causal link.

Keywords:

Adverse drug reactions, bortezomib, multiple myeloma, paralytic ileus, proteasome inhibitor

Paralytic ileus, also known as adynamic ileus, is a neuromuscular failure affecting the myenteric (Auerbach's) and submucous (Meissner's) plexuses which results in functional motor paralysis of the digestive system.^[1] Failure of the gut to transmit peristaltic waves causes a functional blockage, which permits gas and fluid to build up inside the intestine.^[2] Numerous medications, including α -glucosidase inhibitors, antineoplastic medicines, antipsychotics, dantrolene, treatments for incontinence and frequency of urination, opium alkaloids, and polystyrene sulfonate, have been linked to paralytic ileus.^[3]

Case Report

A 79-year-old male patient, who was recently diagnosed with multiple myeloma, was admitted to the Department of Clinical Hematology due to complaints of abdominal distension, constipation following chemotherapy, and one incident of vomiting. He had completed chemotherapy Cycle 2

Dose 2 with Bortezomib-Dexamethasone. The patient does not have any prior history of palpitations, abdominal pain, bone pain, chest pain, or bleeding symptoms. Comorbid conditions that the patient faces include coronary artery disease, benign prostatic hyperplasia, systemic hypertension, bronchial asthma, and Type 2 diabetes mellitus.

On July 6, he was presented with complaints of anemia (hemoglobin-8 g/dL), total leukocyte count (7890 μ L), platelet (1.81) with raised erythrocyte sedimentation rate, and mildly elevated C-reactive protein (16.6 mg/dL). Clinical hematology consultation was sought because of anemia, A:G reversal, thick M band, and recommended for bone marrow biopsy. A thick M Band (Gamma M-spike) with a concentration of 4.19 g/dl at the Gamma region was visible on serum protein electrophoresis. He had a thorough examination, which included a bone marrow aspiration and biopsy. The results revealed markedly hypercellular marrow with lymphoplasmacytosis (up to 87% of plasma cells and plasmacytoid lymphocytes) and foci of trilineage hematopoiesis, which are

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RESEARCH ARTICLE

An observational study on adverse drug reaction profile in patients on long-term treatment with proton pump inhibitors

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ABSTRACT

Background: Proton pump inhibitors (PPI) are most commonly prescribed medications in the world which are highly effective drugs in treatment of upper gastrointestinal disorders, but there are concerns regarding its long term use. **Aim and Objective:** To assess the pattern of reported adverse drug reactions (ADR) in patients with long term use of PPI and to estimate the frequency of adverse drug effects. **Materials and Methods:** A study conducted as an observational study among 100 consecutive patients who attended the medical-gastro inpatient and outpatient department on treatment with PPI for more than 4 months, according to inclusion and exclusion criteria. After attaining the written informed consent, data regarding patient's demographic details, occupational status, addictions, co-morbidities, and lab investigations were recorded in pre-prepared proforma after interviewing the patient and referring the case sheet. Details including PPI used and per day dose of the drug with any ADR developed were noted. Data collected were analyzed using appropriate statistical method. Categorical variables are expressed as frequency (percentage) and continuous variables as mean (standard deviation). Chi-square test was used to find out the association between PPI and ADR. **Results:** Out of 100 study participants, 57% case reported ADR which included 19 cases (33.3%) of hypomagnesemia, 8 cases (14%) each of hypocalcemia, and hyperkalemia, 7 cases (12.3%) of anemia, and 5 cases (8.9%) of acute kidney injury. Out of the 57 reported adverse events, 29 (50.9%) were caused by Rabeprazole followed by 18 (31.6%) by Pantoprazole, then Esomeprazole: 8 (14%), and least by Omeprazole (3.5%). **Conclusion:** Long-term use of PPI can lead to various ADR which requires the withdrawal of drug. Since PPIs are easily available without prescriptions, self-medication with PPIs are increasing alarmingly. With every antibiotic one PPI is always prescribed, as a result, there is irrational use of PPIs which is of concern and requires attention. These adverse events could be reduced by preventing self-medication of long duration and reducing the irrational prescribing of PPIs. Doctors should be sensitized about the ADRs. The patient should be educated about the long-term adverse effects of PPIs.

KEY WORDS: Proton Pump Inhibitors; Long-Term Use; Adverse Drug Reaction

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INTRODUCTION

Proton pump inhibitors (PPI) are one of the most commonly prescribed medications all over the world and are highly effective drugs in treatment of upper gastrointestinal disorders including symptomatic gastroesophageal reflux disease (GERD), erosive esophagitis, NSAIDs induced gastric ulcers

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MEDICATION ADHERENCE AND TREATMENT COSTS AMONG STROKE PATIENTS: A PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Stroke remains a major public health challenge, particularly in low- and middle-income countries, where it significantly contributes to disability and economic burden. Medication adherence plays a critical role in preventing stroke recurrence, but various factors—including treatment cost—can affect patient compliance. This study aimed to assess medication adherence among ischemic stroke patients and evaluate the association between treatment costs and adherence levels in a tertiary care setting. **Materials and Methods:** A prospective observational study was conducted over 12 months at a tertiary care hospital involving 139 ischemic stroke patients who completed a 6-month follow-up. Patients aged ≥ 18 years, with radiological confirmation of stroke, were included. Medication adherence was assessed using the Morisky 8-Item Medication Adherence Scale (MMAS-8), with adherence classified as high (score = 0), medium (score = 1–2), and low (score = 3). Treatment costs were extracted from pharmacy bills, and data on clinical and demographic factors were collected via structured interviews. Chi-square and ANOVA tests were used for statistical analysis. **Result:** Among 139 patients, 54% were male and 56.1% aged 50–70 years. Hypertension (59.7%) and diabetes (39.6%) were common comorbidities. High adherence was observed in 41% of patients, while 31.7% had moderate and 15.8% low adherence. A statistically significant association was found between treatment cost and adherence ($\chi^2 = 8.651$, $p = 0.003$), with the lowest adherence in patients spending $< ₹500$. No significant associations were found between adherence and factors such as age, smoking, alcohol use, blood pressure trends, duration of hospital stay, or biochemical parameters. **Conclusion:** Medication adherence in stroke patients is significantly influenced by treatment costs, with poorer adherence observed among those with lower expenditures. Targeted interventions are essential to improve adherence in this subgroup to prevent stroke recurrence and enhance treatment outcomes.

INTRODUCTION

The global burden of stroke is rising steadily, with the condition contributing significantly to long-term disability across populations.^[1] It is recognized as the fourth leading cause of death worldwide. It is defined by the World Health Organization (WHO) as “rapidly developing clinical symptoms and signs of focal and global loss of cerebral function lasting more than 24 hours, or leading to death, with no apparent cause other than of vascular origin.”^[2] Stroke imposes a substantial financial strain not only on patients but also on their families and the broader healthcare

system.^[3] In low and middle-income countries, the stroke burden is cumbersome. The disease burden is more profound for stroke recurrence, where compliance to treatment constitutes a key factor in preventing secondary stroke.^[4] Long-term strategies, such as drug therapy, lifestyle modification, and exercise, are crucial in post-stroke treatment. Among various treatment strategies, pharmacotherapy plays a central role in the clinical management of stroke.^[5] The types of medication used in stroke patients usually include anti-hypertensive drugs, antiplatelets, and lipid-lowering agents, in addition to medications prescribed for coexisting diseases.^[6]

ORIGINAL RESEARCH

The Efficacy of L-Carnitine Supplementation in Managing Hyperlipidemia: A Randomized Controlled Study

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ABSTRACT

Background: This study evaluated the efficacy of L-carnitine in managing hyperlipidemia, a key risk factor for cardiovascular diseases. In a 12-week, double-blind, randomized controlled trial, 100 participants with hyperlipidemia were randomized; where one group were received L-carnitine (1 g/day) as an adjuvant therapy combined with a hypolipidemic drug and the other group with hypolipidemic drug alone. The primary outcomes measured were changes in serum levels of total cholesterol, LDL cholesterol, HDL cholesterol, and triglycerides, while secondary outcomes included body weight and BMI. The L-carnitine group showed a significant reduction in total cholesterol (20.4 ± 11.1 mg/dL), LDL cholesterol (14.6 ± 9.6 mg/dL), and triglycerides (25.6 ± 14.5 mg/dL), with an increase in HDL cholesterol (6.6 ± 4.6 mg/dL), all statistically significant ($p < 0.05$) compared to the other group. No significant changes were observed in body weight or BMI. The results suggest that L-carnitine supplementation could be an effective adjunct therapy for improving lipid profiles in hyperlipidemia patients, though further long-term studies are needed.

Key words: L-Carnitine, Hyperlipidemia, Randomized controlled trial.

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INTRODUCTION

Hyperlipidemia is a metabolic disorder characterized by elevated levels of lipids in the blood, including cholesterol and triglycerides. It is a major risk factor for the development of atherosclerosis, coronary artery disease, and stroke. Traditional treatment strategies include lifestyle modification and pharmacological interventions such as statins. However, the search for alternative or adjunctive therapies to manage hyperlipidemia remains a critical area of research.

L-carnitine, a naturally occurring quaternary ammonium compound, plays a crucial role in the transport of long-chain fatty acids into the mitochondria for beta-oxidation, a process essential for energy production. The widespread use of L-carnitine (3-hydroxy-4-N-trimethylammonio-butanoate) as a dietary supplement for individuals with various conditions stems from its

antioxidant, anti-inflammatory, and lipid-lowering (hypolipidemic) properties.^[1] Carnitine is synthesized in the brain, liver, and kidneys from methionine and lysine when not obtained from the diet. Skeletal and cardiac muscles, which contain the highest amounts of carnitine, rely on plasma for their supply, as they cannot synthesize it. About 99% of carnitine is intracellular and plays a key role in carbohydrate metabolism. Dysregulation of carnitine is linked to conditions like diabetes, trauma, obesity, and cardiomyopathy. Supplementing with L-carnitine benefits patients with uremia, improves neuropathic pain, nerve conduction, and immune function, and shows promise in treating neurological disorders, cardiovascular diseases, and obesity.^[2] Also, L-carnitine acts as a mitochondrial transporter for acyl and acetyl groups, playing a key role in carbohydrate metabolism and lipid oxidation, and it also helps activate the glycolysis pathway.^[3]

RESEARCH ARTICLE

A retrospective study of adverse drug reactions reported in a tertiary care hospital

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ABSTRACT

Background: Adverse drug reactions (ADRs) are defined as noxious changes due to a drug, which can occur at doses normally used in humans that require treatment or dose reduction, and also indicate that caution should be exercised with future use of the same drug. Periodic monitoring of ADRs in hospitals can motivate health-care professionals to realize their role and responsibility in the detection, management, and reporting of suspected ADRs and also make them learn how to make sure patients stay safe and healthy. The current study is expected to raise awareness among health-care professionals on the importance of ADR reporting. **Aims and Objectives:** The objective of the study was to analyze the incidence and pattern of ADRs with assessing the severity and causality of ADRs reported in the hospital. **Materials and Methods:** All ADR cases which were reported to the pharmacovigilance unit between January 2022 and December 2022 have been evaluated. A total of 220 ADR cases were reported during the study. The demography of patients, causative drugs, reactions, causality assessment, and severity have been analyzed. Causality assessment using the Naranjo scale and severity analysis using the modified Hartwig and Siegel Scale have been done. **Results:** A total of 220 ADR cases have been evaluated. The main age group affected in our study was 31–45 years with male preponderance. Maximum cases were reported from the dermatology department. The most commonly affected organ was the skin. Antibiotics like cephalosporins caused most of the ADRs. After causality assessment, the maximum cases were probable type (60%), and severity assessment revealed that most of the cases were moderate in severity (64%). **Conclusion:** ADRs are one of the growing causes of morbidity and mortality worldwide. Underreporting of ADRs may result in a loss of clinical information that could prevent significant harm to patients. The need of the hour is to encourage health-care professionals to report any suspected ADR and also keep accurate records to analyze, process, and draw conclusions from data to ensure patient safety.


KEY WORDS: Adverse Drug Reaction; Pharmacovigilance; Tertiary Care Center; Causality

INTRODUCTION

Adverse drug reactions (ADRs) are defined as noxious changes due to a drug occurring at doses normally used in humans that require treatment or dose reduction, and also

indicate that caution should be exercised with future use of the same drug. All medications can have adverse effects, and whenever a drug is given, a hazard is taken. Doctors need to think about how much benefit a drug can have for a patient compared to how much harm it could cause before deciding to use it. Adverse effects are common; an incidence of 10–25% has been observed in various clinical settings.^[1]

Pharmacovigilance (PV) is the science and activities involved in identifying, evaluating, understanding, and preventing ADRs or other drug-related problems. Its main aim is to improve patient care and safety and also to support public

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Bortezomib - Induced Paralytic Ileus: Uncommon but Crucial

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ABSTRACT

Bortezomib is a targeted anti - cancer medication used primarily to treat Multiple Myeloma and Mantle Cell Lymphoma in adults. It is classified as a Protease Inhibitor, which works by reversibly inhibiting the protein complex responsible for degrading damaged proteins within cells.[1] We report the case of a patient with Multiple Myeloma who developed Paralytic Ileus while on Bortezomib.

KEYWORDS: Multiple Myeloma, Protease Inhibitor, Paralytic Ileus, VRd, KPD

INTRODUCTION

Paralytic Ileus, also known as Adynamic Ileus, is a condition where the normal wave- like muscle contractions or peristalsis that move food, fluids and gas through the intestines are temporarily paralyzed. The neuromuscular dysfunction affects the enteric nervous system, particularly the myenteric and submucosal plexuses, resulting in impaired propulsion of intestinal contents and subsequent accumulation of gas and fluids within the bowel [2]. The common causes are abdominal surgery, electrolyte imbalances like low potassium, trauma or inflammation in the abdomen, infections like gastroenteritis or peritonitis. Certain medications, including Opioids, Anticholinergics, Antipsychotics, Tricyclic Antidepressants, Muscle Relaxants, Alpha - Glucosidase Inhibitors, and Antineoplastic agents, have also been implicated in the development of Paralytic Ileus. [3][4][5][6]

Bortezomib is a unique boron-containing drug that inhibits the proteasome, a protein complex involved in degrading intracellular signalling proteins. It disrupts NF- κ B signalling, which normally helps cells survive and proliferate. By blocking proteasome activity, Bortezomib prevents the breakdown of I κ B, keeping NF- κ B inactive and reducing survival signals in cancer cells. It also promotes apoptosis by increasing Bax protein levels. Bortezomib is primarily indicated for the treatment of haematological malignancies like Multiple Myeloma and Refractory Mantle Cell Lymphoma. These conditions typically involve overexpression of NF- κ B. The common side effects are peripheral neuropathy, diarrhoea, fatigue, bone marrow depression, especially thrombocytopenia. Rare side effects are posterior reversible encephalopathy syndrome (PRES), Severe autonomic neuropathy, Thrombotic Thrombocytopenic Purpura(TTP) and Tumor lysis syndrome.

AN ANALYSIS OF THE PREVALENCE OF POLYPHARMACY AMONG INPATIENTS OF A TERTIARY CARE HOSPITAL IN KERALA

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ABSTRACT

Objectives: The aim of the study was to estimate the prevalence of polypharmacy, identify the age groups commonly associated with polypharmacy, study the correlation between duration of hospital stay and polypharmacy, and identify the diseases commonly associated with polypharmacy

Methods: Record-based, prospective, and cross-sectional study among 370 inpatients of a tertiary care hospital in Kerala. Prescriptions containing ≥ 3 drugs were collected from inpatient medical records of patients with at least 3 days hospital stay. The number of drugs ≥ 5 was considered as polypharmacy in the present study.

Results: The prevalence of polypharmacy was 93% and average the number of drugs per prescription was 8.81 ± 3.097 . Average number of drugs per prescription was significantly high among patients >60 years. Percentage of prescriptions with polypharmacy among patients with duration of stay 3–5 days, 6–8 days, and ≥ 9 days was found to be 89.4, 98.6, and 100, respectively. There was a significant positive association between duration of hospital stay and percentage of prescriptions with polypharmacy as well as average number of drugs per prescription. Diseases or comorbidities most commonly associated with polypharmacy were hypertension, diabetes mellitus, cerebrovascular accidents, coronary artery disease, and dyslipidemia.

Conclusion: The prevalence of polypharmacy was high in the present study (93%) when compared to similar studies. Age >60 years was strongly associated with the prevalence of polypharmacy, but gender was not found to be factor. Duration of hospital stay was an important factor positively associated with percentage of prescriptions with polypharmacy as well as number of drugs per prescription.

Keywords: Inpatients, Polypharmacy, Prevalence, Prescription.

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INTRODUCTION

Polypharmacy is the use of several drugs together in the management of disease. This term often suggests indiscriminate, unscientific, or excessive prescription [1]. There is no consistent definition for polypharmacy in the literature and many authors define it as the use of five or six medications [2]. A simple definition of polypharmacy would be the administration of more medicines than clinically indicated [3]. Concomitant use of several drugs for a patient is often necessary for achieving therapeutic response or in cases when the patient is suffering from more than one disease. Patients may also take “over the counter” drugs in addition to prescription medications. Polypharmacy may be appropriate if all drugs in the regimen address recognized indications or inappropriate if more drugs prescribed than necessary [1].

When several medications are used simultaneously, there is an increased risk of drug-drug interactions (DDI) and adverse drug reactions (ADR) [4]. The number of concurrently used drugs is the most important predictor of these complications [5]. Studies from all over the globe have shown that a considerable part of hospital admissions is precipitated by drug-related problems and iatrogenic illness [6]. Polypharmacy may be responsible for unnecessary health expenditures directly due to the cost of medications and indirectly due to the increased number of hospitalizations caused by drug-related complications [7]. These factors eventually lead to increased patient costs, non-adherence to treatment, increased rate of patient morbidity, and morbidity [8,9]. Over the past 20–30 years, problems related to aging, multimorbidity, and polypharmacy have become a prominent issue in global healthcare. The consequences of polypharmacy and drug interactions have already been documented by many researchers particularly in Western countries [10,11].

Optimization of drug therapy by minimizing polypharmacy and preventing drug-related problems such as drug-drug interactions may save lives, enhance patient's quality of life, and reduce health expenses. Interventions to reduce polypharmacy must address several issues such as the appropriateness of indication, drug-drug duplication in the same class of therapeutics, inappropriate and complex dosing, drug-drug interaction, drug disease interaction, drug food interaction, coordination of the medication between primary care provider and specialists, use of drug holidays, education of member regarding adverse drug effects, and other issues related to compliance [12]. In India, however, few studies have emphasized the role of polypharmacy and drug interactions and the most of the researches on this topic are centered among elderly. With this background, the aim of this study is to analyze the prevalence of polypharmacy and predictive factors associated with it like age, gender, duration of hospital stay, and comorbidities, among inpatients of a tertiary care hospital in Kerala. This study may help health-care professionals to optimize drug therapy by minimizing polypharmacy and associated complications such as DDI and adverse drug reactions.

Aim

The aim of the study was to analyze the prevalence and factors associated with polypharmacy among inpatients of a tertiary care hospital in Kerala.

Objectives

The objectives of the study are as follows:

1. To estimate the prevalence of polypharmacy
2. To identify the age groups commonly associated with polypharmacy
3. To study the correlation between duration of hospital stay and polypharmacy
4. To identify the diseases commonly associated with polypharmacy

Waxy Nodules: As a Cutaneous Diagnostic Mirror of Systemic Disease Mimicking Rheumatoid Arthritis

Dear Editor,

In practice, rheumatoid arthritis (RA) is a common diagnosis made when a middle-aged adult presents with bilateral symmetrical polyarthritis, even in the absence of rheumatoid factor and/or anticyclic citrullinated peptide antibodies. Primary systemic amyloidosis is a rare type of systemic amyloidosis, due to protein AL amyloid involving internal organs, peripheral nerve tissue, and skin usually idiopathic or associated with multiple myeloma. We report a case of primary systemic amyloidosis with chronic polyarthralgia which was diagnosed and treated as rheumatoid arthritis earlier.

A 54-year-old female was referred by the medical department for asymptomatic skin lesions present on her lips, hands, and both eyelids noticed since one year. Initially, she noticed raised small skin-colored lesions over eyelids along with an increase in size of tongue and gradually progressed with an increase in size and number of similar lesions over hands, neck, groin, and lips within a year. She was apparently normal four years back, when she developed pain in her right wrist followed by left wrist. She was diagnosed with carpal tunnel syndrome and surgical release was done. She had insidious onset, moderately severe nonradiating pain of both shoulder

joints, knee joints, and small joints of hands and was diagnosed with rheumatoid arthritis and started on systemic steroids, methotrexate, chloroquine, and colchicine since March, 2022 from another hospital. She was a diagnosed case of hypothyroidism and hyperuricemia on treatment since four years. There is no significant family history and is normotensive and nondiabetic.

On dermatological examination, multiple shiny, smooth, firm, waxy colored spherical papules and nodules, a few coalescing to form band-like lesions, and multiple milia-like lesions over bilateral eyelids, upper and lower lips including vermillion border, and buccal mucosa were present. Lesions over neck and bilateral crural folds resembled pseudoxanthoma elasticum [Figure 1]. The tongue was greatly enlarged, with a white coating and the lateral aspect showed indentations from the teeth [Figure 2]. Multiple purpuric and ecchymotic lesions were present on neck and bilateral upper limbs. Both hands showed scleroderma-like skin changes with firm, skin-colored nodules and postsurgical scar [Figure 3]. Other mucosae, hair, and nails appeared normal. Musculoskeletal examination showed enlarged bilateral anterior shoulders (shoulder pad sign positive), wasting of thenar and hypothenar muscles, partially restricted and painful joint movements, and no tenderness or contractures with a normal gait. No other relevant systemic examination findings were seen. A provisional diagnosis of systemic amyloidosis, primary or secondary, was made based on previous history of carpal tunnel syndrome, clinical features of nodular skin lesions, purpura, macroglossia, and rheumatoid-arthritis like arthropathy. Other differential diagnoses include rheumatoid nodules, sarcoidosis, lipid proteinosis, and mucinosis. Clinically, rheumatoid

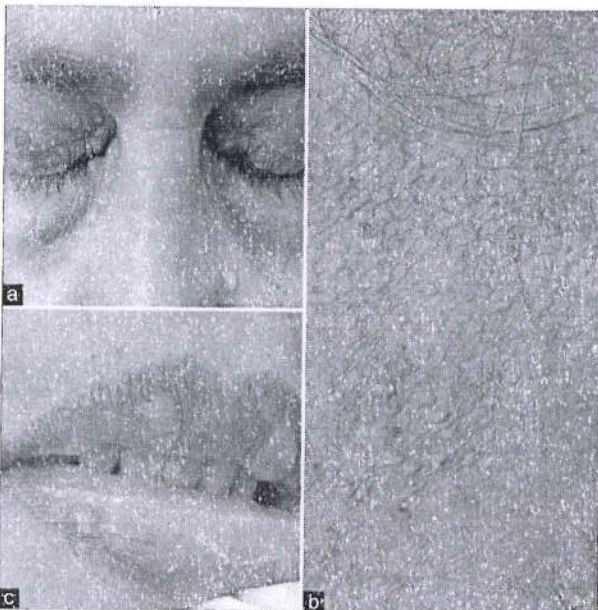


Figure 1: (a) Few papules, milia-like, a few coalescing to form band-like lesions over bilateral eyelids (b) Multiple skin coloured and firm papules grouped over neck along with purpura (c) Multiple shiny, smooth, firm, waxy coloured spherical nodules over both upper lips, lower lips, and vermillion border

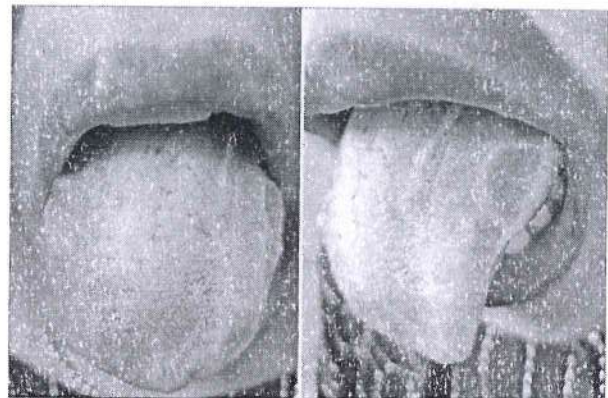


Figure 2: Macroglossia with a white coating and the lateral aspect showed indentations from the teeth

Generalized Pruritus among Elderly Attending Dermatology OPD in a Tertiary Care Centre – A Descriptive Study

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Conflict of interest: Nil

Abstract

Background: Pruritus is the most common cutaneous symptom in geriatric population. Pruritus in aging skin may reflect primary skin disease, systemic disease or arise idiopathically. Aim of the study is to describe the various clinical patterns of presentation and etiological factors of generalized pruritus among elderly patients attending dermatology OPD, and to determine the quality of life in elderly patients with generalized pruritus.

Materials and methods: A descriptive study was conducted among 95 elderly patients with generalized pruritus, who attended the outpatient department of Dermatology of a tertiary care hospital in Kerala, South India from November 2018 to May 2020. Detailed history and complete clinical examination and investigations were carried out. Severity of pruritus was assessed using 5-D itch questionnaire. Quality of life was assessed using dermatology life quality index (DLQI). All data were analyzed using SPSS statistical software.

Results: This study highlights the various etiological factors, co-morbidities associated with generalized pruritus in elderly and how it affects their quality of life

Conclusion: Generalized pruritus among elderly can be an important dermatologic clue for the presence of a significant underlying systemic disease. Proper examination of skin and relevant investigation would help in finding the etiology and optimising management.

Keywords: Generalized pruritus, Elderly, Senile pruritus, DLQI

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Introduction

Old age population is increasing worldwide. There has been an increasing international awareness of health issues relating to aging population in recent years. The health problems of the elderly

are complicated by social, economic and psychological factors. These problems are usually multiple and are often masked by sensory and cognitive impairments, so that special skills are required to detect them.

Net Case

Alagille syndrome: A rare cause for xanthomatosis

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ABSTRACT

Alagille syndrome (ALGS) is a rare, autosomal dominant disorder characterized by typical facial features, cholestatic jaundice, and renal, cardiac, eye, and vertebral anomalies. Cholestasis can lead to multiple xanthomas in childhood. We report this case to emphasize the cutaneous features and the lipid abnormalities associated with ALGS. We highlight the importance of a detailed evaluation in patients with multiple xanthomas, especially children, as it may reveal an underlying serious systemic involvement.

Keywords: Alagille syndrome, Alagille-Watson syndrome, Arteriohepatic dysplasia, Childhood xanthomas, Xanthomatosis

INTRODUCTION

Alagille syndrome (ALGS)/Alagille-Watson syndrome is a rare and autosomal dominant disorder with an estimated frequency of one in 30,000–1:50,000 births.^[1] It is caused by mutations in one of the two genes: *JAG1* or *NOTCH2*.^[2] The paucity of bile ducts is the characteristic feature of ALGS, with almost all cases manifesting cholestatic disease, which, in turn, leads to intractable pruritus and formation of xanthomas.^[1] The other organs affected are kidney, heart, eye, nervous system, and bone.^[1] The affected individuals also show a distinctive facies.^[1]

CASE REPORT

An 8-year-old boy, born out of a non-consanguineous marriage, presented with asymptomatic, skin-colored to slightly yellowish, raised lesions over the face, elbows, hands, buttocks, knees, and ankles of 2 years duration. The child did not give any history of seizure, unsteadiness of gait, or defective vision. The child had mild, generalized pruritus.

He had received the diagnoses of pulmonary artery stenosis and hepatomegaly with cholestasis at 5 months of age. However, these conditions were neither evaluated further, nor did he receive any treatment for the same, owing to financial constraints.

The child had no developmental delay and was immunized up to age. His elder sibling (12-year-old girl child) or parents did not give a history of similar lesions. There was no history of a similar disease in the family.

The body mass index of the child was less than 5th percentile as per the growth chart and weight for age was 55% of standard reference, indicating Grade 3 protein-energy malnutrition (weight 14 kg and height 105 cm).^[3] He had a prominent forehead, deep-set eyes, bulbous nose, and

Net Case

Becker's nevus and lichen planus: A rare coexistence

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ABSTRACT

Becker's nevus, an epidermal nevus, may occur alone or may be associated with musculoskeletal anomalies. There are reports of certain inflammatory and neoplastic diseases showing a predilection for Becker's nevus. We report a patient who manifested lesions of lichen planus. Interestingly, the lesions showed a predilection for a cutaneous area that harbored a Becker's nevus. We reviewed similar cases where a Becker's nevus was reported as a site of predilection for other dermatoses and suggest that the possibility of the former acting as an immunocompromised district of Ruocco (an area that shows less resistance to a disease process in comparison to other body areas) may be considered.

Keywords: Becker's nevus, Lichen planus, Immunocompromised district of Ruocco, Site of predilection, Resistance

INTRODUCTION

Becker's nevus is an epidermal nevus that usually manifests in adolescence, though an earlier onset has also been reported.^[1-4] There are occasional reports of inflammatory or neoplastic dermatoses that remain confined to a Becker's nevus or show a predilection for a cutaneous area harboring a Becker's nevus.^[1-9] Various authors have put forward different explanations for the same.^[1-9] We report a patient in whom the lesions of lichen planus predominantly affected the skin harboring a Becker's nevus.

CASE REPORT

A 38-year-old male presented with multiple, pruritic lesions distributed over the limbs and the back of trunk of 3 months duration. He did not give any history of drug intake prior to the onset of these lesions. He had no other comorbidities or skin lesions, except for a well-defined, hyperpigmented patch with irregular borders and hypertrichosis that involved the posterior aspect of the right shoulder and the right upper arm. The hyperpigmented patch started as spotty, hyperpigmented macules in adolescence. The spotty macules gradually increased in size and number over a few years and coalesced to reach the current size and remained asymptomatic.

The patient denied any history of trauma, excessive sun exposure, vaccination, or cutaneous viral infection anywhere on the hyperpigmented skin lesion.

Clinical examination showed multiple, violaceous, papules, and plaques (ranging from 0.5 × 0.5 cm to 4 × 3 cm) distributed over the right shoulder and upper arm, both forearms



Effect of Black Tea Drinking and Use of Toothpaste as Riskfactors in Development of Dental Fluorosis

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Abstract: Fluorosis, a condition caused by the excessive intake of fluoride, results in toxic effects on the human body. It is a collective term for the various manifestations of this condition. Recent estimates indicate that approximately 200 million people across 25 nations worldwide are affected by the alarming consequences of fluorosis. In India, 20 states are facing the challenge of high fluoride levels impacting their population. **Objectives:** To determine the effect of black tea drinking and use of toothpaste in the development of dental fluorosis among children in the age group of 10-15 years in Kerala. **Methodology:** This study involved the selection of two districts with a high prevalence of fluorosis and two neighboring districts without fluorosis. A sample size of 980 school-going children were calculated, and adequate sample size was selected. Data was collected using a pretested modified questionnaire. Dental specialists evaluated the fluorosis status, and information regarding the use of tooth paste and consumption of black tea along with other details. Subsequently, the collected data was entered and analyzed. The prevalence of fluorosis was calculated in percentage. **Results:** In the district of Alappuzha, the prevalence of dental fluorosis was found to be 38.9% among children who used toothpaste for dental cleaning and 30.6% among those who did not use tooth paste. However, in the other districts, no significant relationship was observed between the prevalence of dental fluorosis and the use of toothpaste. In the district of Alappuzha, the prevalence of dental fluorosis was 37.9% among individuals who consumed black tea, compared to 33.6% among those who did not consume black tea. Similarly, in Palakkad, the prevalence was 39.9% among black tea consumers and 35.2% among non-consumers. It was observed that a majority of students in both Alappuzha and Palakkad consumed black tea, and the prevalence of dental fluorosis was higher among students who consumed black tea in both districts. **Conclusion:** Dental fluorosis is a public health problem in the district of Alappuzha and Palakkad in Kerala, India. The main causative risk factor was the use of drinking water containing high fluoride level but the use of black tea and fluoridated toothpaste are the added risk factors in the development of fluorosis. Measures should be taken to avoid these added risk factors in these endemic areas in order to solve this public health problem.

Keywords: Dental fluorosis, tooth paste usage, black tea consumption.

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INTRODUCTION

Fluoride is one of the critical elements that can cause significant health effects in people through the drinking water¹. Credible evidences from scientific literature substantiate beneficial as well as detrimental effects of fluoride on human health with only a narrow margin of safety². Researchers have found that the fluoride content in the drinking water below 1 parts per million is beneficial in the prevention of dental caries, but excessive exposure can have adverse health effects.

These range from mild dental fluorosis to crippling skeletal fluorosis. The most recent announcement that more than 200 million people around the globe are at risk of Fluorosis, indeed raises global alarm and anguish³. The intensity of natural fluoride in ground water ranges from 0.5 to 48 parts per million (ppm) or even more. Presence of even low levels

¹Fawell J, Bailey K, Chilton J, Dahi E, Fewtrell L, Magara Y. editors. Fluoride in drinking water. World Health Organization. London: IWA Publishing; 2006

²Ayoub S, Guptha AK. Fluoride in Drinking Water: A Review on the Status and Stress Effects. Crit Rev Environ Sci Technol. 2006; 36(6): 433-87.

³Taiyuan Declaration on Water Quality and Arsenic Mitigation. Taiyuan, China. 2004. Available from: http://www.unicef.org/china/media_1163.html

SYSTEMATIC REVIEW ARTICLE

Impact of Vitamin D and Iron in the Treatment of Non-Scarring Alopecia: A Systematic Review

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ABSTRACT

Alopecia is a common dermatological complaint. Affected people are frequently upset and attempt to stop hair loss by taking a variety of over-the-counter vitamin and mineral supplements. However, the evidence for their effectiveness is limited. Nutrients are thought to play a major role in non-scarring alopecia. We reviewed the literature about the most common micronutrients, vitamin D and iron as well as their significance in the hair follicle cycle and hair loss treatment. 2 independent researchers reviewed peer reviewed papers published in the English language. In the present study, we sought to evaluate the possible roles of vitamin D and iron in non-scarring alopecia. A thorough literature search of the PubMed, Google Scholar and Research Gate databases was conducted to assemble published studies on the association between alopecia, blood vitamin D, iron, and ferritin levels. In this review we have found that a substantial link between vitamin D, iron and non-scarring alopecia. However, vitamin D and iron administration in correcting hair loss and managing these conditions are lacking. Hence, further studies are needed with larger number of subjects to know the role of these nutrients before vitamin D and iron can be routinely recommended as a treatment modality in these conditions.

Keywords: vitamin D, Iron, non-scarring alopecia, hair loss, ferritin.

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INTRODUCTION

Alopecia by definition is the absence of hair from the normally hairy area and affects more than 25% of women in developed countries.^[1] Like other parts of the body, hair also needs adequate nutrition for its growth and development, and hair is affected by various nutritional deficiencies.^[2,3] Despite the fact that the significance of macro and micronutrients in normal hair follicle development is still unknown.^[4] Hair loss can range in severity from a single coin-sized patch to widespread alopecia affecting the entire scalp and the rest of the body. The illness is very unpredictable; spontaneous hair regrowth can occur at any point during its course, with the chance of relapse. Alopecia areata (AA) is a particularly difficult condition to treat, and the majority of the existing treatments are ineffective. Because it is a psychologically stressful disease, clinicians should give patients honest information regarding treatments and their efficacy. Hair loss occurs in patches over portions of the body but can occasionally become severe and affect the entire body. Indeed, the clinical manifestations of AA are varied, ranging from

ORIGINAL RESEARCH

Pattern of Usage of Personal Listening Device and Knowledge of Its Harmful Effects among Professional College Students in Central Kerala

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ABSTRACT

Background: Personal listening devices (PLDs) include all electronic gadgets that allow users to listen to audio uninterrupted for prolonged periods without disturbing the people around. PLDs are used by youngsters not only to listen to recreational music, but also to hear audio books, online videos and for online educational programs specifically in the current COVID 19 pandemic scenario.

Objectives: To assess the pattern of usage of personal listening devices and the knowledge of its harmful effects among students of professional colleges in central Kerala.

Materials & Method: A cross sectional study was conducted on 363 students of a private medical and engineering college in central Kerala using a semi-structured questionnaire.

Result: Out of total 363 students who gave consent for study, 77% of medical students and 56% of engineering students were PLD users. The students used PLDs for both educational and recreational purposes (mainly gaming). Earphones/in ear devices were used by 52% of the students. There is predominance in the number of students who have been using PLDs for 2-5 years (54.3% medical and 37.2% engineering) and currently using it 3-5 days per week for more than 4 hours per day. 63% of students listen to more than 50% volume of the device and 80% of the users increase the volume in a noisy environment. 35% of the medical students and 37% of engineering students clean their PLDs frequently. Only a few students (13%) share their earphones, but most students (60%) do not clean it before sharing.

Although medical students were able to correctly answer most of the knowledge questions better than the engineering students, it was found that only 24.4% of the medical and 10.1% of the engineering students knew that the highest safe exposure level is 85dB of sound up to a maximum of 8 hours.

Keywords: Personal listening devices (PLDs), knowledge, professional college students, Central Kerala.

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INTRODUCTION

World Health Organization estimates that 1.1 billion teenagers and young adults are at risk of hearing loss due to the unsafe use of personal listening devices (PLDs) and exposure to damaging levels of sound at noisy entertainment venues. Of these, about 50% of teenagers and

HISTOPATHOLOGICAL STUDY OF LESIONAL & PERILESIONAL SKIN IN PSORIASIS

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Abstract

Background: Psoriasis is defined as common, genetically determined, inflammatory and proliferative disease of the skin. The characteristic lesion consists of chronic, sharply demarcated dull red scaly plaques, particularly on the extensor prominences and in the scalp. **Materials and Methods:** All consecutive patients of plaque type of psoriasis with more than 50% body involvement who were not on any treatment for 2 weeks prior to their visit were included. Psoriatic Area and Severity Index (PASI) score was calculated for all patients. PASI score included redness, thickness, scaliness and extent of the lesions. Using these parameters scalp, upper limb, trunk and lower limb lesions were assessed and totalled. The association of psoriasis like arthropathy and nail changes were also noted. Auspitz sign, Koebner's phenomenon and 'halo of Woronoff' were looked for in all patients. Skin biopsies were done from A) plaque like lesion and B) perilesional normal skin. **Result:** During the one year period of study 21850 patients attended dermatology outpatient department, out of which 21% had psoriasis. Out of 50 patients 15 (30%) were in the age group of 31-40 years. 94% of patients showed seborrhoeic psoriatic lesions on the scalp and 74% had guttate lesions. PASI score ranged from 17.4 to 22.4 in 38% of patients. The patients who were in the minimum PASI group had very little erythema and scaling. Perilesional biopsy showed only perivascular upper dermal lymphocytic infiltrate. **Conclusion:** Out of 50 patients only 33 patients (66%) showed classical histopathological features of psoriasis. Perilesional biopsy showed only perivascular upper dermal lymphocytic infiltrate which carries a limited significance as it did not differ from control biopsies.

INTRODUCTION

Psoriasis is defined as common, genetically determined, inflammatory and proliferative disease of the skin. The characteristic lesion consists of chronic, sharply demarcated dull red scaly plaques, particularly on the extensor prominences and in the scalp.^[1]

Prevalence of psoriasis in Western Europe and Scandinavia is between 3 to 15%.^[2] There is a low incidence of psoriasis in oriental people. Females develop psoriasis earlier than males.^[3] There are two peaks for the age of onset, one at 16-22 yrs and the other at 57-60 years.⁴ Patients with family history of psoriasis tend to have earlier age of onset.^[4-7] In India there are no well planned studies to detect the prevalence of this disease.

Psoriasis is also a polygenic and multifactorial disease. Multifactorial implies that the cause of the disease is due to the effect of several genes.^[8,9] There is a definite relationship of the HLA-system to psoriasis, which includes HLA-B13, B17, B37, according to various studies.^[10,11]

Several factors are implicated in the exacerbation of psoriasis. They include trauma, infection (acute guttate psoriasis), endocrine factors,^[4] sunlight, metabolic factors, drugs like lithium, betablockers, antimalarials and sudden withdrawal of corticosteroids apart from psychogenic factors.^[8] Confirmation of diagnosis of psoriasis lies on histopathology. Histopathological examination of the lesional skin shows characteristic features like hyperkeratosis, presence of Munro 'micro abscesses', parakeratosis, absence of granular layer, acanthosis and spongiform pustules of Kogoj. The

Systematic Review

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Prevalence of anaemia among college going students in India: a systematic review

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ABSTRACT

Anaemia an important global health problem, which is categorized as one of the 10 most serious health problems by the World Health Organization. More than two billion people worldwide are estimated to have anaemia, with majority coming from the developing countries. Anaemia affects health of an individual varying from poor scholastic performance and cognitive impairment and even causes maternal mortalities. Percentage prevalence of anaemia among adolescent girls in the age group 15-19 years and in the older age group 20-29 years remains almost stagnant at 55.8% and 56.1% respectively. Young age period is formative years in life of an individual and crucial period for undertaking greater responsibilities including decision for study, to earn livelihood and healthy responsible parenthood. Protocol of study selection were prepared before the start of study and studies conducted in various states of India among college students and published between the year January 2000 to December 2021 were included. We searched Pubmed, Research gate, Google scholar for articles and 24 studies were included as per predesigned protocol. Analysis of reported studies shown high prevalence of anaemia among college students and more among female students. Subjects of most of the conducted studies were medical students. More studies should be conducted among Arts and Science college students. It is essential to conduct studies among college students to give not only awareness, but also warn them about health hazards and consequences affecting their day to day life.

Keywords: Anaemia, College students, Scholastic performance, Maternal mortality

INTRODUCTION

Anaemia is one of the most important global health problems, and more than two billion people worldwide are estimated to have anaemia, with majority coming from the developing countries.¹ It is also categorized as one of the 10 most serious health problems by the WHO.² According to the WHO 2021, prevalence of global anaemia in women aged 15-49 years was 29.9 and of children aged 6-59 months was 39.8%.³ According to available literature inadequate nutrition, menstruation, socioeconomic status,

personal hygiene and worm infestation are important risk factors which leads to anaemia.⁴ A study among adolescent girls found that with the onset of menarche at puberty and in the absence of adequate dietary intake, young girls become highly susceptible to anaemia.⁵ Anaemia at any age has significant negative impact on the health of an individual varying from poor scholastic performance and cognitive impairment in children to one of the major indirect causes of maternal mortalities.⁶ It can even cause lack of concentration, irritability and impair academic performance of students.⁷ Anaemia in adolescence

Childhood Leprosy in Postelimination Era: A Clinico-Epidemiological Prospective Observational Study from India

Abstract

Background: Although India has achieved national level elimination of leprosy in December 2005, it reports highest number of leprosy cases in the world. Incidence of leprosy amongst young children indicates active foci of transmission in the community, making it a robust epidemiological indicator to assess the progress of leprosy control programs. **Aim and Objectives:** To study prevalence, clinical spectrum, patterns of extracutaneous involvement, reactions, relapse, demographic profile, anthropometric characteristics of children with leprosy. **Materials and Methods:** A prospective observational study of children younger than 14 years old with clinical signs and symptoms of leprosy, including cases diagnosed from October 2018 through September 2020 at a tertiary hospital in Eastern India. **Results:** Childhood leprosy constituted of 10.4% of total new leprosy cases. Mean age observed was 11.14 ± 1.5 years. 30.4% were females and 69.6% were males. The mean average duration was 9.95 ± 12.3 months. 82.1% of children belong to below poverty line (BPL) status. 19.6% of children had malnourishment/stunting/thinness, and 55.4% had anemia. 84.1% presented with skin discoloration. The most common site affected was upper limb (57.1%). 29.2% had contact history. A single case of relapse (1.7%) was reported. Most common peripheral nerve involved was ulnar nerve (67.8%). 8.9% of children had type 1 lepra reaction, and 1.7% had type 2 lepra reaction. 73.21% presented with borderline tuberculoid clinical type of leprosy. 19.6% showed slit skin smear positivity. **Conclusion:** Pockets of high endemicity of childhood leprosy as detected in the current study point toward the unmet need of better healthcare facilities along with increased awareness, campaigns, and school surveys for early diagnosis and treatment for the prevention of complications and spread in community.

Keywords: Extracutaneous features, lepra reaction, pediatric leprosy, post elimination era, prevalence

Introduction

Leprosy (Greek: scales), also known as Hansen's disease (HD), is a neglected tropical disease still occurring in more than 120 countries with more than 200,000 new cases reported per year. Although India has achieved national level elimination of leprosy in December 2005, we still report highest number of leprosy cases in the world and accounted for 56.6% of global new leprosy cases reported in 2019.^[1] The epidemiological status of leprosy cases in India from 2012 to 2019 is summarized in Table 1.^[2]

According to 2019–2020 annual report of National Leprosy Eradication Program, leprosy prevalence rate in Odisha is second highest in the country after Chhattisgarh. From a prevalence of less than one (per 10,000 population) in 2006, it resurfaced

in 2014 when 10,645 cases were reported and now stands at prevalence rate of 1.39 against the national average of 0.62. Six districts in this state have recorded the Annual New Case Detection Rate of more than 50 per 1 lakh population.^[2]

In the post elimination era, incidence of leprosy amongst young children indicates active foci of transmission in the community, making it a robust epidemiological indicator to assess the progress of leprosy control programs. Although the Global Leprosy Strategy 2016–2020 'Accelerating towards a leprosy-free world' had aimed for zero childhood leprosy cases, there are still incidence of new cases, and hence, the Global Leprosy Strategy 2021–2030 overviews a 90% reduction in rate (per million children) of new child cases with leprosy from 7.81

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Quick Response Code:



Waxy Nodules: As a Cutaneous Diagnostic Mirror of Systemic Disease Mimicking Rheumatoid Arthritis

Dear Editor,

In practice, rheumatoid arthritis (RA) is a common diagnosis made when a middle-aged adult presents with bilateral symmetrical polyarthritis, even in the absence of rheumatoid factor and/or anticyclic citrullinated peptide antibodies. Primary systemic amyloidosis is a rare type of systemic amyloidosis, due to protein AL amyloid involving internal organs, peripheral nerve tissue, and skin usually idiopathic or associated with multiple myeloma. We report a case of primary systemic amyloidosis with chronic polyarthralgia which was diagnosed and treated as rheumatoid arthritis earlier.

A 54-year-old female was referred by the medical department for asymptomatic skin lesions present on her lips, hands, and both eyelids noticed since one year. Initially, she noticed raised small skin-colored lesions over eyelids along with an increase in size of tongue and gradually progressed with an increase in size and number of similar lesions over hands, neck, groin, and lips within a year. She was apparently normal four years back, when she developed pain in her right wrist followed by left wrist. She was diagnosed with carpal tunnel syndrome and surgical release was done. She had insidious onset, moderately severe nonradiating pain of both shoulder

joints, knee joints, and small joints of hands and was diagnosed with rheumatoid arthritis and started on systemic steroids, methotrexate, chloroquine, and colchicine since March, 2022 from another hospital. She was a diagnosed case of hypothyroidism and hyperuricemia on treatment since four years. There is no significant family history and is normotensive and nondiabetic.

On dermatological examination, multiple shiny, smooth, firm, waxy colored spherical papules and nodules, a few coalescing to form band-like lesions, and multiple milia-like lesions over bilateral eyelids, upper and lower lips including vermillion border, and buccal mucosa were present. Lesions over neck and bilateral crural folds resembled pseudoxanthoma elasticum [Figure 1]. The tongue was greatly enlarged, with a white coating and the lateral aspect showed indentations from the teeth [Figure 2]. Multiple purpuric and ecchymotic lesions were present on neck and bilateral upper limbs. Both hands showed scleroderma-like skin changes with firm, skin-colored nodules and postsurgical scar [Figure 3]. Other mucosae, hair, and nails appeared normal. Musculoskeletal examination showed enlarged bilateral anterior shoulders (shoulder pad sign positive), wasting of thenar and hypothenar muscles, partially restricted and painful joint movements, and no tenderness or contractures with a normal gait. No other relevant systemic examination findings were seen. A provisional diagnosis of systemic amyloidosis, primary or secondary, was made based on previous history of carpal tunnel syndrome, clinical features of nodular skin lesions, purpura, macroglossia, and rheumatoid-arthritis like arthropathy. Other differential diagnoses include rheumatoid nodules, sarcoidosis, lipid proteinosis, and mucinosis. Clinically, rheumatoid

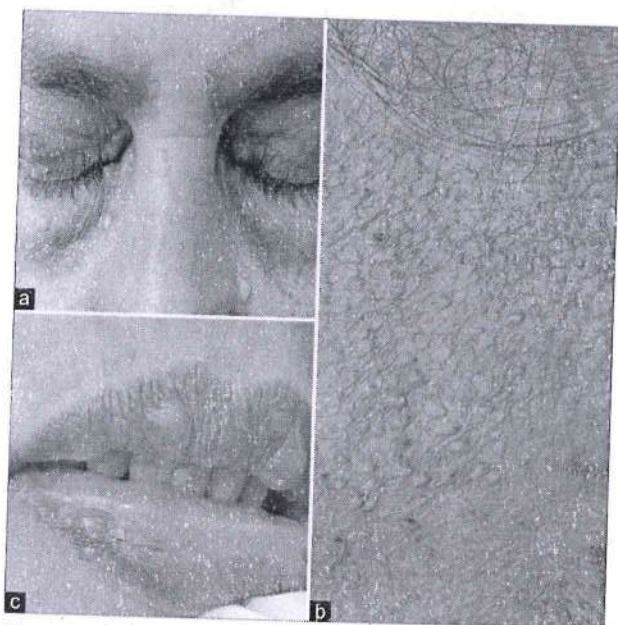


Figure 1: (a) Few papules, milia-like, a few coalescing to form band-like lesions over bilateral eyelids (b) Multiple skin coloured and firm papules grouped over neck along with purpura (c) Multiple shiny, smooth, firm, waxy coloured spherical nodules over both upper lips, lower lips, and vermillion border

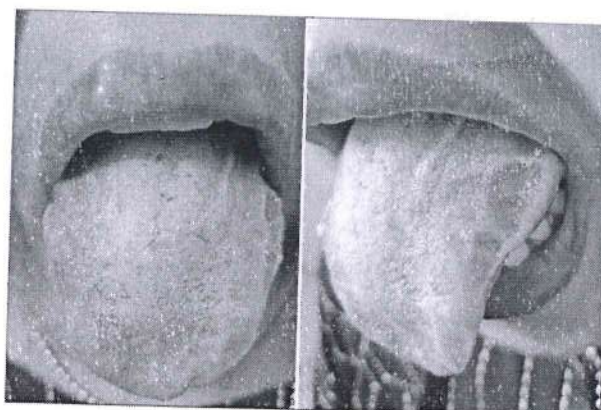


Figure 2: Macroglossia with a white coating and the lateral aspect showed indentations from the teeth



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A Rare Case of Pretibial Dystrophic Epidermolysis Bullosa: A Scientific Letter

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Dear Editor,

We would like to mention our epidermolysis bullosa case. A 15-year-old female patient presented to our dermatology department with cutaneous lesions distributed over both lower legs and dorsum of hands and feet, along with nail dystrophy since birth. The patient is the youngest daughter of a non-consanguineous marriage, and her elder sister has similar complaints but of milder grades. The patient has normal intellectual ability, currently studying in 9th standard with average academic performance. At the time of birth, her parents noticed a single fluid-filled lesion over her right lower leg, which gradually grew bigger in size and ruptured within 3-4 days, leaving an atrophic scar. The toenails of both feet and four fingernails of the left hand, sparing the left ring finger, have been absent since birth. The patient had several similar episodes of cutaneous lesions associated with itching over both shins and dorsum of feet and developed a contracture in the dorsum of the right foot leading to hyperextension of the right big toe. There is no history of photosensitivity, mucosal lesions, joint pain, or other significant systemic complaints. On clinical examination, there are multiple sclerotic depigmented plaques, a few plaques with the rim of hyperpigmentation distributed over both lower legs, dorsum of both hands and feet with mild scaling and yellowish crust over the right leg (Figs. 1 and 2). Old lesions healed with atrophic scars and post-inflammatory hypopigmentation with hyperextension of the right metatarsophalangeal joint of the right big toe. There are erosions over the anterior surface of the right lower leg, and right knee with no signs of secondary infection and single tense bullae of size 2 x 2 cm over the right leg with Nikolsky's sign negative and rounded border on bullae spread sign. The scalp, all mucosae, teeth, hair, palms, and soles are looking normal. The clinical differential diagnoses were dystrophic epidermolysis bullosa (DEB), lichen planus pemphigoid, and bullous lupus erythematosus. The routine blood and urine investigations were found to be normal. Serum anti-nuclear antibody was normal, hence ruling out the possibility of bullous lupus erythematosus. The potassium hydroxide microscopy from nail clippings was done to rule out fungal pathology. Histopathological examination showed a subepidermal cleft with significant inflammatory infiltrate just below the basement membrane zone along with dermal fibrosis. Specific immune deposits were not detected in the direct immunofluorescence study, and the lupus band test was negative. The presence of recurrent episodes of fluid-filled lesions associated with itching and nail dystrophy localized over both lower legs and dorsum of feet and hands with histopathology and immunofluorescence findings pointing toward the diagnosis of a rare pretibial variant of DEB. The patient was given emollients, antihistamines, and topical antibiotics and was explained the prognosis and course of the disease. The patient was advised to take proper protection to

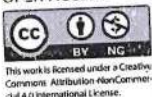


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A hospital-based cross-sectional study of clinico-epidemiological aspects of childhood leprosy with disability in the post-elimination era

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Summary

Background Childhood leprosy is an important indicator of active foci of transmission in the community in the post-elimination era. Childhood leprosy cases with disabilities are still prevalent, but are often undertreated or misdiagnosed due to diminishing awareness and the available studies on the same are limited.

Aims and objectives To study the clinical presentation, WHO grading, duration, relation with lepra reaction, smear positivity and neurological correlation of childhood leprosy cases with disability.

Materials and methods A cross-sectional study was conducted in the dermatology department of a tertiary care center including all recent cases of childhood leprosy (less than or equal to 13 years) with WHO grade 1 and grade 2 disability from October 2018 to June 2020.

Results Disability among childhood leprosy cases was detected in 18 (32.1%) out of 56 children. The most common type of disability observed was visible muscle wasting (26.7%). Based on WHO disability grading, 3 children (16.6%) had grade 1 disability and 15 children (83.4%) had grade 2 disability. Children with borderline tuberculoid lesions had maximum disability (17.8%). All had thickened peripheral nerves with increased incidence of lepra-reaction (27.7%) and slit skin smear positivity (38.8%). None of the children with disability had a second dose of BCG or rifampicin prophylaxis, even if leprosy cases were reported in the family earlier.

Conclusion Development of deformity was dependent on various factors including increasing age, delay in accessing health care, multiple skin lesions, multibacillary disease, smear positivity, multiple nerve involvement, and lepra reaction at the time of presentation. Active school surveys and campaigns are needed for early detection of leprosy and prevention of disability, with appropriate distribution of post-exposure prophylaxis.

Keywords: Leprosy, global leprosy situation, pediatric leprosy, high leprosy burden areas, leprosy reactions

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Haim-Munk syndrome caused by mutation in the CTSC gene in an Indian consanguineous family

Dear Editor,

Haim-Munk syndrome (HMS; OMIM #245010), also called keratosis palmoplantaris with periodontopathia and onychogryphosis or Cochin Jewish disorder, is an autosomal recessive rare disorder caused by a homozygous mutation in the *CTSC* gene encoding cathepsin C at chromosome 11q14. It was first described in 1965 by Salim Haim, a dermatologist, and Munk, a radiologist among members of a small Jewish community from Kochi, India.¹ This syndrome is characterised by palmoplantar keratoderma, early onset periodontitis, onychogryphosis, arachnodactyly, acroosteolysis, and pes planus.² Herein, we describe a case series of HMS in a single Indian consanguineous family, along with widespread ichthyosis, as an unusual association.

A 12-year-old girl, residing in Karnataka, South India, born of consanguineous parents [Figure S1], presented with palmoplantar keratoderma along with ichthyosis from 4

months of age. Antenatal, perinatal, and postnatal histories were non-contributory. There was no history of collodion membrane at birth. Her developmental milestones were normal. Her younger siblings, a 7-year-old girl, and a 4-year-old boy, had similar clinical symptoms from infancy. Additionally, similar complaints were reported in two maternal uncles. There was no systemic involvement in any child.

Dermatological examination of the proband showed thick erythematous plaques with deep fissures on the palmar and dorsal aspect of both hands and feet along with fixed contracture deformities involving all fingers [Figures 1a–c]. Well-defined psoriasiform plaques were present on the extensors of both elbows and knees and also on the gluteal region [Figures 1d–e]. In addition, other findings included thick scalp scaling, onychogryphosis of fingernails, and pes planus. Dental evaluation showed periodontitis, gingival hyperplasia and crowding of teeth. Her two younger siblings



Figure 1a: Thick erythematous plaques with fissures on the dorsal aspect of both hands and forearms in proband. Note the onychogryphosis of the fingernails.



Figure 1b: Thick hyperkeratotic plaques with deep fissures along with fixed contracture deformities involving both hands in the proband.

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Angiokeratoma corporis diffusum – a rare case report

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We report a case of a 22-year-old male patient with angiokeratoma corporis diffusum, which is a cutaneous feature of many lysosomal storage disorders, but we diagnosed it as Fabry disease (FD) as our patient had normal intelligence associated with coarse facies, acroparesthesia, ocular changes like dilated vessels in conjunctiva, and presence of vacuolated endothelial cells in histopathological examination. It is an X-linked inborn error of the glycosphingolipid metabolic pathway that is associated with protean manifestations and is a paradigm of a multi-system condition with symptoms expressing themselves in many organs. We report this rare case mainly to stress the importance of proper clinical evaluation in the diagnosis of FD in today's era of costly investigations like enzyme assay, which is not feasible in our setting. It also shows the importance of proper dermatological assessment, which has a highly positive predictive value in terms of assessing systemic morbidity in FD.

Keywords:

acroparesthesia, angiokeratoma corporis diffusum, Fabry disease

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Introduction

Angiokeratoma corporis diffusum (ACD) is a prominent cutaneous feature of lysosomal storage disorders, including Fabry disease (FD), GM1 gangliosidosis, aspartyl glucosaminuria, fucosidosis, β mannosidosis, sialidosis, galactosialidosis, and Kanizaki disease [1]. We report a rare case of ACD, which was further diagnosed to be FD according to the clinical evaluation and available investigations. FD is an X-linked inborn error of the glycosphingolipid metabolic pathway that is associated with protean manifestations.

Case report

A 21-year-old male patient presented with multiple pinhead-sized reddish skin lesions over the trunk and genital region for the past 5 years, which was insidious in onset and progressive in nature. He gave a history of bleeding from the lesions on scratching. There was a history of tingling sensation over hands and feet for the past 6 months. There was a history of third-degree consanguinity in his family. There was no history of visual problems or family history of similar lesions.

On general examination, grade 2 clubbing was noted in all finger nails. The patient had a coarse facies with swollen lips and bushy eyebrows. Dermatological examination showed multiple grouped as well as discrete dark-red to bluish-black nonblanchable papules over the trunk, scrotum, and both thighs. Lesions were mostly clustered over the lumbar area

and gluteal region (Figs 1–3). Few erythematous to hyperpigmented papules were also present over the tip and lateral borders of tongue (Fig. 4).

Fundus examination of both eyes showed dilated and tortuous veins in conjunctiva (Fig. 5). Complete blood count, renal function test, liver function test, urine analysis, and chest radiograph were normal. ECG and ECHO did not show any cardiovascular abnormality. Ultrasonography of the abdomen and radiograph skull was normal. Histopathological examination from a papule over back showed dilated capillaries along with vacuolated endothelial cells in the dermis (Fig. 6).

As all the lysosomal storage disorders that were mentioned to be associated with ACD were usually associated with impaired intelligence apart from FD, we came to the final diagnosis of FD in our patient as his intelligence was near normal. Other features that helped to arrive at our diagnosis included the presence of coarse facies, acroparesthesia, ocular changes, and presence of vacuolated endothelial cells in histopathological examination. An enzyme assay was not done as it was not available in our setting. The patient was on regular follow-up with supportive care.

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Arthroscopic Management of Snapping Scapular Syndrome due to Recalcitrant Scapulothoracic Bursitis – A Case Series

Raghavendra Kembhavi¹, Jojin Jose Chitten², Nagesh M Ingishetty¹

Learning Point of the Article:

An arthroscopic bursectomy is effective in recalcitrant snapping scapula syndrome.

Abstract

Introduction: Snapping scapula syndrome (SSS) is a rare pathological condition characterized by palpable and/or audible crackling sensation during scapulothoracic movements. Scapulothoracic bursitis with or without osseous lesions is commonly associated with this syndrome. The initial management is always non-operative methods with anti-inflammatory medications and physiotherapy modalities. However, if the symptoms persist beyond 3–6 months of non-surgical treatment, it should be categorized as refractory or recalcitrant bursitis and necessitate either open or arthroscopic surgical excision of the lesion.

Case Report: We successfully managed five patients with SSS with arthroscopic scapulothoracic bursectomy.

Conclusion: Arthroscopic scapulothoracic bursectomy is a successful surgical intervention for patients with scapulothoracic bursitis who do not respond to the conservative mode of management.

Keywords: Scapula dyskinesia, scapulothoracic bursitis, snapping scapula syndrome

Introduction

Snapping scapula syndrome (SSS) manifests as audible or palpable clicking of the scapula during movements of the scapulothoracic joint which can be associated with pain on rare occasions. It is an underdiagnosed and hence probably an under-reported condition [1].

The alignment and correct movement of the scapula are essential for the proper functioning of the glenohumeral joint. The scapulothoracic joint lacks true synovial articulation and is controlled by the dynamic periscapular muscles. The scapula glides on the posterior thorax covered with muscle layers which are facilitated by the infraserratus, subserratus, and trapezoid bursae [2]. The underlying pathology of SSS may be due to abnormalities of the muscular, bursal, and/or bony lesions around the scapula, and among these, the former two are the

most common [3]. These can also lead to scapula dyskinesia.

Scapular dyskinesia can be the cause or consequence of many forms of shoulder pain and dysfunction. It leads to alterations in the static scapular position and loss of dynamic control of scapular motion which can lead to an increase in anterior tilt and internal rotation and a decrease in scapular upward rotation. The anteriorly tilted scapula can compress the medial border against the ribcage and can lead to scapulothoracic bursitis which can result in persistent scapula dyskinesia [4].

SSS can also occur in patients with anatomical variations of scapula involving superomedial angle of scapula, retroscapular exostoses, Luschka's tubercle, or Sprengel deformities [5, 6].

We present a case series of SSS which were treated arthroscopically after failed conservative management.

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Non-Randomised Placebo-Controlled Trial on Functional Outcome of Intra-Articular Injection of Allogenic Platelet Rich Plasma (PRP) in Patients with Early Osteoarthritis (OA) Knees

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Abstract

Background: The advanced stage of knee osteoarthritis (OA) is disabling for the patients; hence, it is essential to control the degenerative process at the earliest. None of the current nonoperative treatment options except platelet-rich plasma (PRP) has been reported to halt the pathology and have more than a short-term relief. After realizing the regenerative potential of the PRP, there have been numerous studies on autologous PRP in OA knee; however, the outcomes have been contradicting among these. Hence, we wanted to evaluate the outcome of allogenic PRP in mild-to-moderate stages of knee OA with active synovitis, which do not respond to other conservative measures of treatment. **Methodology:** A non-randomized placebo-controlled trial was conducted in a tertiary care hospital between the years 2017 and 2018 for 1 year. We selected both male and female patients with symptomatic bilateral primary OA of knees with symmetrical radiological findings as per Kellgren–Lawrence grading 0–III with a minimum duration of symptoms of 6 weeks who were not responding to oral anti-inflammatory medications and physiotherapy. All the patients were evaluated using Western Ontario and McMaster Universities Arthritis Index (WOMAC) scores before PRP injection, then during follow-ups at 1 month, 3 months, 6 months, 12 months and 18 months post injection. **Results:** A total of 30 patients were included in this study of which five were males and 25 were females. The median age of OA patients was 60.0 years (Interquartile range = 53.7–66.5 years). We selected patients with bilateral symmetrical Kellgren–Lawrence grading with synovitis phenotype: 6 patients with grade 1 OA, 16 with grade 2 OA, and 9 patients with grade 3 OA. The WOMAC scores for pain and stiffness were significantly higher in the test knees compared to the controls at baseline. In the test knees, both the scores showed a serial reduction till 6 months after the injection. Thereafter, the scores began to gradually worsen. However, at 18 months follow-up the pain score was still significantly lower than the baseline. **Conclusion:** Allogenic PRP is safe and effective in selected patients with mild-to-moderate OA knee of synovitis/inflammatory phenotype in terms of pain relief and stiffness, especially in the first 6 months post injection. These effects continued till the end of 12 months for stiffness and 18 months for pain.

Keywords: Allogenic, joint degeneration, Kellgren–Lawrence, knee osteoarthritis, platelet-rich plasma, Western Ontario and McMaster universities arthritis index score

INTRODUCTION

Primary osteoarthritis (OA) knee is a degenerative cartilage disease with limited regenerative capacity. It is the most frequent cause of knee pain in the middle-aged and elderly population. It could affect the quality of life of the patient if not intervened early.^[1] Pain, swelling, and stiffness are the most common complaints of the patients, and it is proven that these symptoms are directly related to the inflammatory process in OA.^[2,3]

The conventional treatments of oral analgesics, physiotherapy modalities, intraarticular steroids, and hyaluronic injections provide only temporary symptomatic relief do not have any

effect on the underlying pathology.^[4,5] Nonetheless, there is no disease-modifying drug invented for primary OA knees, unlike in rheumatoid arthritis. Research has been underway to find an option of treatment that halts the inflammatory process

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Bilateral Sprengel Deformities, Mirror Movements Synkinesis, and Arthrogryposis Multiplex Congenita: A Novel Combination

Jojin Jose Chitten¹, Boblee James¹

Learning Point of the Article:

The combination of Sprengel deformities, mirror movements synkinesis, and arthrogryposis could co-exist and hence should be evaluated when one of them is observed clinically.

Abstract

Introduction: Bilateral Sprengel deformities, mirror movements synkinesis, and arthrogryposis are described in different combinations in various syndromes but never together.

Case Report: We present a 12-year-old girl who presented with bilateral shoulder deformities and difficulty in coordination while writing. On examination, she was noted to have bilateral Sprengel deformities with flexion contractures of upper-limb joints and mirror movements of both upper and lower-limb joints.

Conclusion: In the light of relevant literature, we may speculate that these three have a causal relation and even a genetic basis but further studies are needed to prove the same.

Keywords: Sprengel deformity, mirror movements, synkinesis, arthrogryposis.

Introduction

Sprengel deformity is a rare congenital anomaly of the shoulder girdle. It is caused by an interruption of the normal caudal migration of the scapula. Arthrogryposis is a clinical presentation in many syndromes but has never been associated with syndromes associated with Sprengel deformity. Sprengel deformity and arthrogryposis are rare anomalies and the etiopathogenesis of both is still unclear. Both anomalies rarely occur in isolation. There are congenital syndromes with mirror movements and either Sprengel deformity or arthrogryposis, but all three have never been reported together.

Case Report

A 12-year-old girl presented with non-progressive congenital

flexion deformities of bilateral elbows and complaints of difficulty in writing, typing, jogging, and difficulty in using the Indian toilet such that she had to sit with one leg extended for balance. She was the firstborn child of a second-degree consanguineous marriage. Her mother gave a history of delayed and decreased fetal movements during pregnancy. Her motor milestones were delayed though social adaptive and language milestones were normal. She was good at academics. She had attained menarche at the age of 12 years and has normal menstrual cycles. Family history was unremarkable. On clinical examination, she had prominence in the suprascapular region on both sides with trapezii contracture (Fig. 1) and mild-to-moderate restriction of cervical spine range of motion in rotation and lateral bending. She had 20° of internal rotation deformity bilaterally and abduction was restricted to 120° at both the

Author's Photo Gallery



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A Prospective Observational Study on Short-term Functional Outcomes of Primary Reverse Shoulder Arthroplasty in the Indian Population

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Abstract

Background: Reverse shoulder arthroplasty (RSA) is becoming more popular for specific indications globally with good functional outcomes reported. There is no study, to the authors' knowledge, on the outcomes of RSA in the Indian population. The present study aimed to fill the void. **Methodology:** A prospective observational study on the functional outcomes using University of California, Los Angeles (UCLA) and Constant scores in the first 27 consecutive patients who underwent RSA in a tertiary care hospital between 2019 and 2020 were assessed in periodic intervals up to a maximum of 1-year follow-up. **Results:** Twenty-seven patients underwent unilateral primary RSA and were included with a median age of 71 years (interquartile range [IQR]: 66–76). There was a statistically significant improvement in both the functional scores over the study duration. At a follow-up time of 6 months ($n = 27$ patients), the median improvement in UCLA score was 17 points (IQR: 12–19) and Constant shoulder score of 52 points (IQR: 47–60). Thirteen of these patients were followed up further up to 1 year, with a median improvement in UCLA score of 13 points (IQR: 21–25) and Constant shoulder score of 56 points (IQR: 49.50–66.50) from the preoperative scores. All 27 implants were radiographically stable. There was 7.4% complication rate; one scapular notching was noticed at the end of 1-year follow-up and one glenosphere dissociation in the immediate postoperative period. **Conclusion:** RSA provides consistent improvements in functional outcome measures in the Indian population with a low complication rate. Further studies with larger patient cohorts and longer follow-ups are needed to validate these findings.

Keywords: Constant score, glenosphere dissociation, Indian population, prospective observational study, scapula notching, short-term functional outcome, statistically significant, unilateral, University of California, Los Angeles

INTRODUCTION

The shoulder joint is the third most commonly replaced joint in the body after the hip and knee joints.^[1] In the current scenario, reverse shoulder arthroplasty (RSA) has become an essential tool in the armamentarium of shoulder surgeons. The original indication was primarily the low-demand elderly patient with rotator cuff arthropathy. The design of the RSA has improved substantially in the last decade as it relates to prior clinical limitations and this has enabled the surgeons to expand the indications to include even relatively younger patients with cuff arthropathy, primary glenohumeral arthritis, inflammatory shoulder arthropathy, comminuted proximal humerus fractures not amenable to surgical fixation, massive cuff tears without cuff tear arthropathy, and revision of a failed total shoulder arthroplasty.

RSA has become an increasingly popular surgery among orthopedic surgeons in the United States, since the Food and Drug Administration approved it in 2004, and as of now, it has surpassed anatomic total shoulder arthroplasty in numbers.^[2] However, in an Indian setup, the same enthusiasm is not evident for RSA and it remains an underutilized surgery due to various reasons. One of the salient reasons is the lack of

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Clinicoradiological Evaluation of Medial and Lateral Crossed Pinning Versus Lateral Pinning for Displaced Supracondylar Fractures of The Humerus in Children in Mes Medical College - A Prospective Comparison Study

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Abstract

Objectives: This study compared and evaluated the clinicoradiological outcome of displaced supracondylar fractures of the humerus in children who underwent closed manipulative reduction and two percutaneous k-wire fixation configurations [crossed medial and lateral configuration (Group I) or Lateral double-crossed configuration (Group II)]. **Materials and Methods:** The study encompassed 40 patients aged 3 to 12 with closed extension type supracondylar fractures who were enrolled between June 2012 and May 2014. All patients were managed with closed reduction and percutaneous K-wire fixation. Twenty-one patients were in Group I, whereas 19 were in Group II. Functional assessment was performed at 6 months using modified Flynn's criteria and classified as excellent, good, fair, or poor. The Chi-square test was applied to assess a connection between pin configuration and chosen variables. SPSS 17.0 was used for the statistical evaluation. **Results:** The findings showed that 72.5% of patients were male and 45% were between 6 and 8 years of age. There were 32 (80%), 6 (15%), and 2 (5%) individuals with posteromedial, posterolateral, and posterior displacements, respectively. Overall functional success was outstanding in 28 (70%) patients, good in 9 (22.5%), and fair in 3 (7.5%) patients, with outcomes similar between the two groups. **Conclusion:** Regarding biomechanical stability, lateral K-wire fixation is equally stable as crossed K-wire fixation.

Keywords: Supracondylar fracture of humerus; Closed reduction and K-wire fixation; Modified Flynn's criteria; Mann-Whitney U test; Baumann angle; Cubitus varus.



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INTRODUCTION

Fractures of the supracondylar humerus are frequently recognized as the most prevalent elbow fractures in adolescents globally.¹ The projected annual rate of children presenting with supracondylar fractures is 177.3/100000. This fracture is seen at the supracondylar area or the metaphysis of the distal humerus and is responsible for 65.4% of upper extremity fractures among younger individuals.¹⁻³ Displaced supracondylar

fractures are managed to achieve a complete functional recovery and a normal appearance of the elbow. Currently, closed manipulative reduction and percutaneous fixation are employed for the management of supracondylar fractures of type II and type III based on the modified Gartland classification, all under the control of an image intensifier. Nevertheless, there is disagreement regarding the most effective placement of the pins.

Role of Magnetic Resonance Imaging (MRI) in the Diagnosis of Rotator Cuff Injuries and Correlation With Arthroscopy Findings

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Abstract

Background and aim: The prevalent cause of shoulder pain is rotator cuff tears (RCT), which induce profound discomfort and morbidity. Hence, their detection and appropriate management become important to alleviate morbidity and enhance quality of life. Imaging has an important role in the diagnosis of such patients to guide for further management. A wide array of radiological approaches has been explored for the detection of RCT. The study aimed to assess the sensitivity (SN) and specificity (SP) of regular magnetic resonance imaging (MRI) in the diagnosis and characterization of RCT and furthermore to link the results of MRI with the arthroscopy findings. The limitations and pitfalls if any with MRI patients presenting were also addressed.

Materials and methods: The study was a diagnostic evaluation study conducted at the Department of Radiodiagnosis, Muslim Educational Society (MES) Medical College, Perinthalmanna, India, among individuals with RCT between December 1, 2015, and May 31, 2017. Patients who were referred for MRI and then taken up for arthroscopy were included. The findings for each tendon of rotator cuff on MRI were contrasted with that of arthroscopy, and the percentage of agreement was calculated. Additional findings relevant to the study were also noted. SN, SP, positive predictive value (PPV), and negative predictive value (NPV) of MRI were determined by taking arthroscopic findings as the gold standard.

Results: The study was comprised of 36 patients assessed using MRI and arthroscopy for RCT. The study participants ranged in age from 31 to 70 years, with a mean of 52.69 ± 8.86 years. The majority of the patients (69.4%) were between the ages of 41 and 60 years. MRI had 100% SN and SP for full-thickness supraspinatus (SS) tear, 50% SN and 100% SP for partial-thickness SS tear, 100% SN and 80% SP for full-thickness infraspinatus (IS) tear, 75% SN and 80% SP for partial-thickness IS tear, and 95% SN and 86.6% SP for subscapularis (SC) tear.

Conclusion: The MRI RCT investigation had a high SN, SP, and PPV compared to arthroscopy. The most frequently involved tendon reported in the present study was SS ($n=35$; 97.22%) followed by IS ($n=32$; 88.88%) and SC ($n=22$; 61.11%). The teres minor tendon was least commonly affected ($n=0$). Moreover, 61.11% ($n=22$) of the patients had joint effusion, 41.66% ($n=15$) had subacromial-subdeltoid bursal effusion, and 27.77% ($n=10$) had subcoracoid effusion, suggesting that RCT include joint effusion or bursal fluid. Acromioclavicular (AC) joint hypertrophy was found in 53% ($n=19$) of the patients, and 90% ($n=17$) were over 45 years old, indicating an association between age, AC joint hypertrophy, and RCT. Therefore, MRI has a good SN and SP for detecting various RCT. Therefore, it could be used to investigate a suspected RCT and should be considered a near-reference standard to arthroscopy for RCT diagnosis.

Categories: Radiology

Keywords: supraspinatus tendon, shoulder joint, rotator cuff tear, magnetic resonance imaging, arthroscopy

Introduction

The shoulder joint, a ball and socket joint with no defined axis of movement, offers an extensive spectrum of multiplanar rotation. Because of this range of motion, mobility is reduced. The rotator cuff compensates for the weak bony structure by shielding the shoulder anteriorly, posteriorly, and superiorly with its capsule and tendons [1,2]. Shoulder pain is the third most prevalent reason of pain in the musculoskeletal system following low back pain and knee pain, resulting in significant health consequences and a lower quality of life [3-5]. Rotator cuff tears (RCT) are frequent among individuals with shoulder pain, accounting for up to 86% of episodes [6]. Hence, their detection and appropriate management become important to reduce morbidity and improve quality of life.

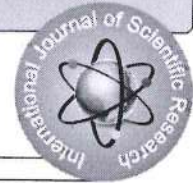
Imaging is important in the diagnostic workup of such patients to guide for further treatment. An array of radiological approaches has been applied for the detection of RCT. Each of these modalities presents its own set of limitations and advantages. Plain radiography, computed tomography, contrast arthrography,

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CORRELATION OF STRENGTH OF ROTATOR CUFF WITH FUNCTIONAL OUTCOMES OF PATIENTS FOLLOWING ARTHROSCOPIC SHOULDER CUFF REPAIR – A COHORT STUDY



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ABSTRACT

Background: Rotator cuff tears, with a prevalence of 20.7% in the general population, significantly impact daily activities and quality of life. Arthroscopic rotator cuff repair (ARCR) is widely used due to its benefits in reducing post-operative pain and facilitating early rehabilitation. This cohort study aimed to assess the correlation between the postoperative strength of the rotator cuff muscles and the functional outcomes post-ARCR. **Methodology:** A total of 34 patients were evaluated, with 26 completing the study. Preoperative and six-month postoperative assessments included isokinetic and isometric strength measurements, along with functional scores such as the Constant and American Shoulder and Elbow Surgeons (ASES) scores. **Results:** The results showed significant improvements in both strength and functional outcomes, with the Constant score increasing by 38 points and the ASES score by 53.8 points postoperatively. However, no significant correlation was found between the improvement in rotator cuff strength and the functional outcome scores. **Conclusion:** The study highlights the effectiveness of ARCR in improving both strength and functional outcomes, though it suggests that factors other than muscle strength may influence functional recovery.

KEYWORDS

Rotator cuff, Arthroscopic rotator cuff repair (ARCR), American Shoulder and Elbow Surgeons(ASES) score

INTRODUCTION –

The normal population has a 20.7% prevalence of rotator cuff tears (1). This results in discomfort and makes it difficult to do daily tasks like cleaning the home or engaging in sports, which call for a sufficient range of motion and strength in the shoulder. Consequently, there is a notable decline in the standard of living.

Following repair of the rotator cuff, the common parameters we take into account are the pain and function. These parameters improve postoperatively. The assessment tools used in most studies to compare function before and after rotator cuff repair are the American Shoulder and Elbow Surgeons (ASES) score and the Constant score (2). We have observed that parameters like range of motion and strength which are assessed by physical examination are not frequently reported and not documented by objective strength measures.

Arthroscopic rotator cuff repair (ARCR) has the advantages of better glenohumeral evaluation, less deltoid insult, less post operative pain and the advantage of early rehabilitation and recovery as compared to open and mini open repairs(1). Most patients appreciate improvements in their functional scores after undergoing arthroscopic cuff repair(2). This is also found to be true in the elderly population(3). ARCR appears to be effective and safe and on long term follow up patients have been shown to have improved clinical scores(4).

Biomechanical studies have described the function of the rotator cuff more as a muscle group which stabilizes the humeral head instead of its motor function. The joint is compressed by the cuff. The cuff also acts as a restraint to translation and sliding movement of the head during dynamic activity. The cuff also provides most of the stability for the shoulder in midrange positions during which the passive soft tissue restraints are relaxed.

In a study by Lee et al the muscle strength ratio measured preoperatively was found to be associated with the shoulder functional assessment postoperatively (5). The higher the pre operative strength ratios, better were the post operative functional outcomes. A

systematic review by Bravi et al found that 'Strength recovery' has been rarely used and poorly detailed in literature as a factor influencing to 'return to play'(6). We found that there were no studies previously done which have compared the importance of functional outcomes improvement with respect to the improvements in strength in arthroscopic rotator cuff repair postoperatively. Therefore, we examined the relationship and impact of rotator cuff muscle strength on functional outcome following rotator cuff repair in this study.

Methodology -

In a cohort research study conducted at a tertiary care teaching hospital, informed consent was obtained from each patient undergoing arthroscopic rotator cuff repair for rotator cuff tears. Prior to surgery, patients were clinically evaluated for preoperative pain, isokinetic and isometric shoulder strength, active range of motion (ROM), and functional scores using the Constant and ASES scores. The isokinetic and isometric strength of the shoulder was assessed using a Kin Com 125 AP dynamometer (Chattanooga Group, Tennessee, USA), which has been validated as a reliable tool for measuring the strength of the glenohumeral joint, particularly in internal and external rotation(7,8).

All rotator cuff repairs were performed arthroscopically, with patients positioned in the lateral decubitus position. Post-operative rehabilitation commenced the day after surgery with passive ROM exercises, progressing to active ROM exercises at six weeks postoperatively, with the goal of achieving full active ROM by three months. Patients were re-evaluated using the same protocol six months after surgery.

Prior to the strength tests, patients underwent a familiarization session that included a hands-on demonstration and a 5-minute warm-up consisting of brisk walking along a 20-meter corridor. Standardized instructions were provided, and patients were encouraged to exert maximum effort during the tests. All tests were administered by the same personnel to ensure consistency. Pilot tests were conducted to standardize the testing protocol. During the test, each participant was

Waxy Nodules: As a Cutaneous Diagnostic Mirror of Systemic Disease Mimicking Rheumatoid Arthritis

Dear Editor,

In practice, rheumatoid arthritis (RA) is a common diagnosis made when a middle-aged adult presents with bilateral symmetrical polyarthritis, even in the absence of rheumatoid factor and/or anticyclic citrullinated peptide antibodies. Primary systemic amyloidosis is a rare type of systemic amyloidosis, due to protein AL amyloid involving internal organs, peripheral nerve tissue, and skin usually idiopathic or associated with multiple myeloma. We report a case of primary systemic amyloidosis with chronic polyarthralgia which was diagnosed and treated as rheumatoid arthritis earlier.

A 54-year-old female was referred by the medical department for asymptomatic skin lesions present on her lips, hands, and both eyelids noticed since one year. Initially, she noticed raised small skin-colored lesions over eyelids along with an increase in size of tongue and gradually progressed with an increase in size and number of similar lesions over hands, neck, groin, and lips within a year. She was apparently normal four years back, when she developed pain in her right wrist followed by left wrist. She was diagnosed with carpal tunnel syndrome and surgical release was done. She had insidious onset, moderately severe nonradiating pain of both shoulder

joints, knee joints, and small joints of hands and was diagnosed with rheumatoid arthritis and started on systemic steroids, methotrexate, chloroquine, and colchicine since March, 2022 from another hospital. She was a diagnosed case of hypothyroidism and hyperuricemia on treatment since four years. There is no significant family history and is normotensive and nondiabetic.

On dermatological examination, multiple shiny, smooth, firm, waxy colored spherical papules and nodules, a few coalescing to form band-like lesions, and multiple milia-like lesions over bilateral eyelids, upper and lower lips including vermillion border, and buccal mucosa were present. Lesions over neck and bilateral crural folds resembled pseudoxanthoma elasticum [Figure 1]. The tongue was greatly enlarged, with a white coating and the lateral aspect showed indentations from the teeth [Figure 2]. Multiple purpuric and ecchymotic lesions were present on neck and bilateral upper limbs. Both hands showed scleroderma-like skin changes with firm, skin-colored nodules and postsurgical scar [Figure 3]. Other mucosae, hair, and nails appeared normal. Musculoskeletal examination showed enlarged bilateral anterior shoulders (shoulder pad sign positive), wasting of thenar and hypothenar muscles, partially restricted and painful joint movements, and no tenderness or contractures with a normal gait. No other relevant systemic examination findings were seen. A provisional diagnosis of systemic amyloidosis, primary or secondary, was made based on previous history of carpal tunnel syndrome, clinical features of nodular skin lesions, purpura, macroglossia, and rheumatoid-arthritis like arthropathy. Other differential diagnoses include rheumatoid nodules, sarcoidosis, lipid proteinosis, and mucinosis. Clinically, rheumatoid

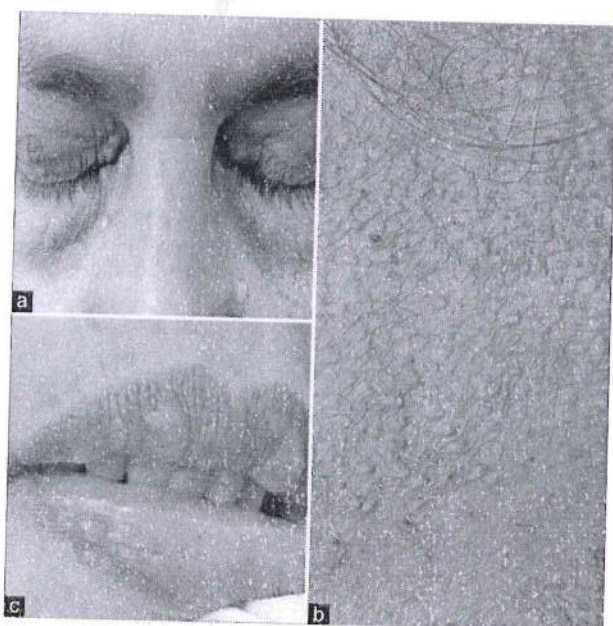


Figure 1: (a) Few papules, milia-like, a few coalescing to form band-like lesions over bilateral eyelids (b) Multiple skin coloured and firm papules grouped over neck along with purpura (c) Multiple shiny, smooth, firm, waxy coloured spherical nodules over both upper lips, lower lips, and vermillion border

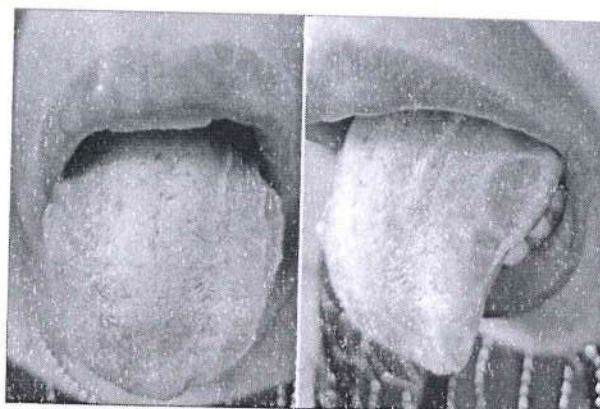


Figure 2: Macroglossia with a white coating and the lateral aspect showed indentations from the teeth

ORIGINAL RESEARCH

Comparative study of Cemented versus Uncemented Hemiarthroplasty in Geriatric Age Group

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Abstract

Background: Hemiarthroplasty is an effective surgical treatment option due to early ambulation with good functional outcome for fracture neck of femur. Cemented hemiarthroplasty is associated with low periprosthetic fractures and implant loosening, whereas on the other hand it may lead to pulmonary embolism and cardiac failure with cementing. We are conducting this study to compare and contrast the efficacy and safety profile of Cemented Hemiarthroplasty and Uncemented Hemiarthroplasty as a comparison to find out the preferred choice of surgical management.

Material & methods: The present retrospective Study was conducted from January 2020–January 2022 in Dr. B. R. Ambedkar Medical College, Bangalore, Karnataka. A total of 150 patients involved and 150 hips were considered after fulfilling the inclusion criteria. Among 150 fracture neck of femur patients, 120 patients were considered for this study who were in regular follow up.

Results: We assessed post op recovery by Harris hip scoring. The Average Harris hip score was 91 for cemented and 89 for uncemented. A shorter operation time was observed for uncemented group with an average operation time of 1 hour 15 mins whereas Cemented group showed an average of 1 hour 28 mins. Uncemented showed average intra operative blood loss of 200 mL while cemented showed an average of 250 mL. A shorter operation time was observed for uncemented compared to Cemented by almost 15 minutes. Two patients in the uncemented group developed loosening of prosthesis and had to be taken up for revision procedure compared to only one among the cemented group. There were no deep infections in the cemented group while there was one case of the same in cemented group.

Conclusion: Higher hip function scores, reduced post operative pain, reduced complications related to implants in the cemented group. There was no appreciable difference in death rate, cardiac and cerebral complications, general complications, wound related complications and number of revisions surgeries.

Key words: fracture neck femur, hemiarthroplasty, cemented, uncemented, geriatric, osteoporosis.

Introduction

Femoral neck fracture is a commonly encountered pathology in geriatric age group associated with not only post operative morbidity but also incidences of mortality due to

ORIGINAL RESEARCH

Usage of Titanium Elastic Nails for Surgical Management of Both Unstable and Stable Paediatric Femoral Diaphyseal Fractures: A Comparison

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Abstract

Background: Shaft of femur fractures are one of the commonly encountered cases contributing to 1.6% of fractures seen in paediatric age group. The fracture pattern also determines the outcome of the healing process. Factors contributing to this are anatomy and location of fracture, stable or unstable patterns. Flexible titanium elastic nailing has become revolutionary with respect to stabilization of femoral shaft fractures. It has become the surgical procedure of choice due to reduced hospital stay and avoiding spica cast. In this study we have made an effort to further analyze the comparative results among the unstable and stable fracture patterns. Post-operative criteria like residual pain, duration of hospital stay, timing of mobilization, duration needed for radiological union, onset of weight bearing, time taken for full weight bearing and residual deformity were analyzed.

Materials & methods: The present retrospective study was conducted in DR B R Ambedkar Medical College from March 2020 -March 2022. Forty paediatric patients aged 5-15(25 stable and 25 unstable) who visited the hospital with history of trauma to thigh along with symptoms of pain, unable to bear weight with an X-ray showing diaphyseal femoral shaft fracture were selected for this study. Informed consent was taken as a standard.

Surgical Plan: Fifty patients (25 unstable and 25 stable) who fulfilled the inclusion criteria treated with elastic titanium nailing. The follow up was at 4th week, 8th week, 12th week and at 24 weeks.

Results: After the completion of the study, we opined that the best results was seen in stable femoral diaphyseal fractures and had 2 instances of angular deformity and 1 instance of limb length discrepancy among the unstable variety.

Conclusion: The surgical technique of elastic intramedullary titanium nails lead to early fracture healing. The chances of angular deformity and limb length discrepancy among unstable fracture types show that additional stability may be required.

Keywords: Communitied femur fracture, TENS nail, pediatric fractures, femoral diaphyseal fractures.



ORIGINAL RESEARCH PAPER

Orthopaedics

VARIOUS MODALITIES OF TREATMENT OF PROXIMAL TIBIAL FRACTURES : A PROSPECTIVE LONGITUDINAL STUDY

KEY WORDS: Tibial plateau, Fracture, Articular

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ABSTRACT

Background: Tibial plateau fractures are one of the commonest intra-articular fractures. They result from indirect coronal or direct axial compressive forces. This makes about 1% of all fractures and 8% of the fractures in elderly. Nevertheless, tibial plateau fractures challenging remain because of their number, variety and complexity. With advancements the treatment of each fracture type is still not defined hence we have taken up this study to analyze various fracture patterns and its outcome. **Methods:** The study includes 40 patients having the fractures of the proximal tibial metaphyseal; metaphyseodiaphyseal with or without intra-articular extension (including upper third fractures of tibia), closed fractures, fractures with Open grade-I wounds (Gustillo Anderson Classification). The study excludes compound fractures having grade II and III (Gustillo Anderson) and Paediatric patients. The treatment method was based on the type of fracture, the amount of displacement, the amount of depression and surrounding skin condition of the tibial plateau. We used the Schatzker classification because it is closest to describing the specific fracture type and it is easy to apply. **Results:** In this study there were 40 patients with mean age of 39.18 (median 38.5 and min - max 25 to 55) with 25 male (62.5%) and 15 (37.5%) female with significant male preponderance. In this study road traffic accident was the commonest mode of injury (65%) and produced different types of fractures, followed by fall from height (22.5%), injury while playing sports (12.5%). **Conclusions:** The correct method of management of tibial condylar fractures depends on good clinical judgment. If rational treatment is to be instituted the surgeon must have sound knowledge of the personality of the injury and a clear understanding of the knee examination, imaging studies and must be familiar with variety of techniques available at present for treating tibial condyle fractures.

INTRODUCTION

Tibial plateau fractures are one of the commonest intra-articular fractures. They result from indirect coronal or direct axial compressive forces. This makes about 1% of all fractures and 8% of the fractures in elderly.

These fractures encompass many and varied fracture configurations that involve medial, lateral or both plateaus with varying degrees of articular depressions and displacements. Each fracture type has its own characteristic morphology and response to the treatment. It is essential to determine the force of injury since high-energy trauma is associated with considerable soft tissue and neurovascular damage. Apart from tibial plateau bony injury, meniscal tear and ligament injuries should also be assessed

High velocity injury sustained in automobile disasters and increase in road traffic accidents as a whole is creating an ever-growing problem. Since man has taken to traveling at high speeds in the sitting position with the loading edge composed of flexed hind limbs, when the machine in which the subject is traveling stops suddenly, most of the impact is taken at first upon the patella, then the tibia and femur in varying proportions and at various positions. The stationary lower limb may be struck by a moving object; this is the common pedestrian injury, the so called "bumper fracture", since the bumper of most vehicles being placed roughly at knee height. Thus road traffic accident is the main cause for tibial plateau fracture as it is mentioned in different studies. 1,2

Due to advancement, especially in orthopedic trauma a better understanding of biomechanics, quality of implants, principles of internal fixation, soft tissue care, antibiotics and asepsis have all contributed to the radical change. Thus we have advanced from the conservative approach to internal fixation in fractures as an acceptable mode of treatment. Nevertheless, tibial plateau fractures challenging remain because of their number, variety and complexity. With

advancements the treatment of each fracture type is still not defined hence we have taken up this study to analyze various fracture patterns and its outcome.

METHODS

This prospective longitudinal study performed at Dr.B.R. Ambedkar Medical College and Hospital, Bangalore, Karnataka during 2nd November 2020 to 2nd February 2022. The study includes 40 patients having the fractures of the proximal tibial metaphyseal, metaphyseodiaphyseal with or without intra-articular extension (including upper third fractures of tibia), closed fractures, fractures with Open grade-I wounds (Gustillo Anderson Classification) as given in Table 1 and Figure 1. The study excludes compound fractures having grade II and III (Gustillo Anderson) and pediatric patients.

The patients were first seen in the casualty. The history was taken followed by general and local examination of the patient. Concerned specialists undertook appropriate management of the associated injuries. Intensive care was given to those patients who presented with shock and immediate resuscitative measures were taken. Once the patient's general condition was fit, relevant X-rays were taken. Higher investigations such as CT scan were done for tibial plateau fractures whenever necessary.

The treatment method was based on the type of fracture, the amount of displacement, the amount of depression and surrounding skin condition of the tibial plateau. We used the Schatzker classification as shown in Figure 2 because it is closest to describing the specific fracture type and it is easy to apply. 4,5 Based on fracture pattern surgical or conservative treatment was done for all type of fracture. The patients were taken for surgery at the earliest possible time depending on their medical condition, skin condition and the amount of swelling. All surgeries were done under C-arm image intensifier control. Fractures were fixed either with



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EXPERIENCE

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- **Visiting Registrar**, Orthopaedic Department, Sun Rise Hospital, 04/05/2024 - 19/05/2024
- **Junior Resident**, Orthopaedic Department, Sree Mookambika Institute of Medical Sciences, 2020 - 2023
- **Junior Doctor**, Orthopaedic Department, Alifar Hospital, 10/01/2018 - 17/07/2020
- **Internship(MBBS)**, PSG Medical College, 19/10/2016 - 18/10/2017

DUTIES & RESPONSIBILITIES

- Stay updated on surgical techniques and field advancements. Conduct preoperative evaluations, ensuring patient readiness.
- Provide postoperative care, monitor recovery, and address complications.
- Respond to orthopedic emergencies, making quick and informed decisions.
- Collaborate with multidisciplinary teams for comprehensive patient care. Engage in clinical research, publish findings, and present at conferences.
- Instruct and mentor medical students, residents, and fellows. Participate in educational programs and contribute to future surgeon training.
- Attend conferences to stay current with orthopedic developments.
- Educate patients on conditions, treatment options, and postoperative care.

PROFILE

Seasoned Orthopedic Surgeon with over 6 years of hands-on experience in diagnosing and treating a diverse range of musculoskeletal conditions. Proficient in both elective and emergency surgeries, including joint replacements, arthroscopy, and trauma cases. Adept at employing advanced surgical techniques, staying abreast of the latest medical advancements, and delivering compassionate patient care. Skilled in collaborating with interdisciplinary teams, effective communication with patients and families, and maintaining the highest standards of safety. Committed to ongoing professional development, I am seeking a challenging position where my expertise can contribute to advancing orthopedic care, while allowing for continued growth in this dynamic field.

EDUCATION

- **MS Orthopaedic**, Sree Mookambika Institute of Medical Sciences, 2020- 2023
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- **MBBS**, PSG Medical College, Coimbatore, 2011- 2016
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SKILLS

- Clinical Knowledge
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- Surgical Expertise
- Manual Dexterity
- Communication Skills
- Attention to Detail
- Ethical Practice
- Research Skills
- Time Management
- Empathy
- Humane

Functional Outcome of Bimalleolar Ankle Fractures – A Prospective Study

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Abstract

Background: Ankle fracture ranks second among lower limb fractures, accounting for about 10% of all fractures. It occurs in about 137 per 1 lakh people each year. Bimalleolar fractures are the most common fracture in outpatient as well as in emergency department which accounts for 1/4th of all ankle fractures. Treatment of this fracture is complicated and challenging as the outcome will influence the locomotive power. Improper and inadequate fixation will cause long term disability as the body weight is transmitted through the ankle joint. This study was conducted to evaluate the functional outcome of bimalleolar ankle fractures treated with various surgical modalities. We also try to delineate the types of fractures occurred and its outcome after surgical fixation and also to understand the advantages and disadvantages of various implants used along with its complications. **Aims and Objectives:** To determine the functional outcome of surgical management of bimalleolar ankle fractures and to know the risks and complications associated with surgical fixation of bimalleolar ankle fractures. **Subjects and Methods:** A prospective study is conducted among 40 patients who came to the Emergency Department and to Orthopaedics Outpatient Department in Sree Mookambika Institute of Medical Sciences between April 2021 and September 2022 were analyzed. We have included bimalleolar ankle fractures with Lauge–Hansen classification (SER4, SAD 2, PER 3, PAB 3), Denis–Weber Type (A2, B2, C2, C3) in this study and we have excluded patients with Lauge–Hansen classification (SER1,2,3, SAD1, PER1,2,4, PAB1,2), Denis–Weber Type (A1, A3, B1, B3, C1). Systemic infections, open injury, fracture with dislocation, skin diseases over the incision site Trimalleolar ankle fracture, previous arthrodesis at target level. Based on the fracture pattern, the patients were planned for surgical fixation with appropriate implants. **Results:** In our present study of 40 patients, we assessed the functional outcome based on Baird and Jackson's scoring system. Based on which 21 patients (52.5%) had excellent outcome, 14 patients (35%) had good outcome, 3 patients (7.5%) had fair outcome, and 2 patients (5%) had poor outcome. Out of total population, 35 patients (87.5%) had no complications followed by 3 patients (7.5%) had superficial infection and 2 patient (5%) who had ankle stiffness. **Conclusion:** Medial malleolus fracture can be effectively treated by various modalities such as Screw fixation, tension band wiring (TBW) and K-wire fixation, giving excellent to good results. Among which TBW and Screw fixation are relatively better than K-wire fixation for medial malleolus fracture. Similarly, lateral malleolus fracture can be treated with plate fixation, screw fixation and K-wire fixation which gives excellent to good results. Among which plate fixation (locking compression plate) is better than K-wire and screw fixation for lateral malleolus fracture. Superficial skin infection is the most common complication we encountered in our study.

Keywords: Baird and Jackson's scoring system, Denis–Weber classification, K-wire, Lauge–Hansen classification, locking compression plate, screw, semitubular plate and reconstruction plate, tension band wiring

INTRODUCTION

Ankle joint is usually highly susceptible to injuries as it is relatively mobile and bear much of the stresses associated with weight bearing. The ankle joint supports more weight per unit area than any other joint in the body. Ankle joint fractures rank second among lower limb fractures in frequency, accounting for 10% of all fractures. It occurs in about 137 per 1 lakh people each year.^[1] Bimalleolar fractures are the most common fracture

in outpatient as well as emergency department accounts for 1/4th of all ankle, i.e., 2.5% of all fractures. Since our body

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Restoration of Testicular Cytoarchitecture and Antioxidant Markers by Hemidesmus Indicus in MSG-Exposed Wistar Rats

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Conflict of interest: Nil

Abstract

Background: Much emphasis has been focused to the issue of infertility linked to the impact of food additives and enhancers on testicular toxicity. Because of the natural chemical components found in plants, herbal medications are becoming a viable option to alleviate these detrimental effects on the testes.

Aim: The purpose of this study was to assess how well Hemidesmus indicus ethanolic extract safeguard rat testicular structure from the damage brought about by Monosodium glutamate (MSG) and how antioxidant markers were altered.

Methodology: The study involved Twenty-four (12-week old) male wistar rats were divided into four groups at random: six animals each for the Control group (C), MSG group (MSG), Hemidesmus indicus ethanolic extract (HIE) group, and paired Hemidesmus indicus ethanolic extract and MSG (HIE+MSG) group. The study was conducted over 30 days.

Results: The left testis was evaluated for antioxidant enzyme activity at the end of the study, and the right testis was subjected to a histological examination. The rats that were subjected to MSG showed significant cyto-architectural changes, including diminished growth of germ cells (including spermatids), disruption of the basal lamina, cytoplasmic vacuolation, and abnormalities in the levels of antioxidants in the testicles. Positively, there was a remarkable and steady alleviation in these effects in the group that received MSG and HIE treatment.

Conclusion: The present study highlights the potential of ethanolic extract from Hemidesmus indicus as protective measure against testicular alterations caused by MSG, indicating the necessity for additional research on the effects of this extract on reproductive health and male fertility.

Keywords: Hemidesmus indicus Extract, Monosodium glutamate, Testis cytoarchitecture, Antioxidants, Seminiferous tubules, SOD, Glutathione.

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Introduction

Infertility presents a significant global health challenge due to its profound psychosocial repercussions. Various chemicals and food additives have been associated with infertility concerns. One such additive, Monosodium glutamate (MSG), has stirred considerable debate both domestically and internationally regarding its safety (Moore et al., 2003). MSG, a salt of naturally occurring glutamic acid, serves as a taste enhancer in numerous food products. Despite being a naturally abundant amino acid essential for human metabolism, excessive MSG consumption has raised safety concerns, particularly regarding its potential to increase brain glutamate levels and disrupt normal functioning,

given its role as a neurotransmitter (IFIC, 1994). Although studies have shown that MSG is hazardous to humans and animals, it is prized for its ability to enhance flavor and stimulate hunger (Andrew et al., 2007). Russel and Blaylock (1994) pointed out that a lot of taste-enriching chemicals have excitotoxins in them, and MSG is a common ingredient in food because of the Glutamate Association's persistent lobbying, which tends to minimize research findings. Samuels (1999) goes on to describe MSG as a neurotoxin that can cause harm to the brain and retinal cells, endocrine changes, kidney damage, and retinal degeneration. Furthermore, a number of studies point to a possible connection between MSG

RESEARCH ARTICLE

Correlation between inflammatory markers and platelet metrics in predicting ischemic stroke outcomes

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ABSTRACT

Background: The burden of ischemic stroke, a leading cause of death and long-term disability globally, underscores the need for predictive indicators that can guide clinical interventions. Exploring the relationship between inflammatory and thrombotic biomarkers, such as C-reactive protein (CRP) and mean platelet volume (MPV) offers insights into their potential role in forecasting clinical outcomes in stroke patients. **Aims and Objectives:** To investigate the association between MPV and CRP levels in predicting clinical outcomes in patients following ischemic stroke. **Materials and Methods:** The study was conducted at the government medical college in Kozhikode. There were 108 subjects with the same number of cases and age-matched controls. The levels of MPV and CRP were analyzed, and statistical methodology was applied to establish the correlation between the measured variables and clinical outcomes after stroke. **Results:** The results showed that the level of MPV and CRP was observed significantly in a stroke; there was a noticeably increased level of the above factors; an interesting result was obtained according to its correlation in the case where a positive relationship was established, which means that there is a strong connection between these biomarkers, the pathophysiologic mechanisms of a stroke, and further prognosis. **Conclusion:** MPV and CRP can be used as determining predictors for predicting ischemic stroke; this case can provide different viewpoints to understand the prognostic factor in clinical practice. This test can be the best method, in conjunction with routine testing, to determine the current and further, status of the patient. However, future longitudinal analysis will be needed to acquire patients' general findings and test for validation results with predictive markers.

KEY WORDS: Ischemic Stroke Outcomes; Mean Platelet Volume; C-Reactive Protein; Stroke Prognosis; Biomarkers in Stroke; Platelet Activation; Inflammatory Markers; Stroke Biomarker Predictability; Clinical Stroke Management

INTRODUCTION

Ischemic stroke stands as one of the leading causes of severe long-term disability and mortality globally.^[1] Historically, this has made the condition a significant health-care challenge. Although acute management and prevention measures have

significantly improved over the years, our ability to predict outcomes and individualize patient interventions remains rudimentary. One of the promising prospects in post-stroke outcome prediction is the role of biomarkers, based on recent research. Mean platelet volume (MPV) and C-reactive protein (CRP) have garnered attention as potential measurements.^[2] They might reveal disease severity and forecast functional trajectories over an extended recovery period. MPV is a straightforward metric derived from routine complete blood counts, and it essentially measures platelet size, thereby acting as an indirect marker of platelet activation.^[3] Increased thrombotic activity is a hallmark of many cardiovascular diseases, several of which contribute to the atherothrombotic

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RESEARCH ARTICLE

Exploring the diagnostic potential of mean platelet volume and C-reactive protein levels in ischemic stroke patients

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ABSTRACT

Background: Ischemic stroke remains one of the leading causes of morbidity and mortality worldwide. Thus, developing more efficient tools to diagnose the condition promptly is critical. Mean platelet volume (MPV) and C-reactive protein (CRP), markers that reflect thrombotic and inflammatory pathways, respectively, are closely associated with the pathophysiology of ischemic stroke and may serve as biomarkers. **Aims and Objectives:** This study aimed to assess the diagnostic potential of MPV and CRP when measured in patients with ischemic stroke against these markers' levels in healthy persons. The association between these two biomarkers, as measured in ischemic stroke cases, was also explored. **Materials and Methods:** A cross-sectional comparison study recruited 54 patients with acute ischemic stroke and 54 age- and sex-matched healthy persons at Government Medical College, Kozhikode. MPV and CRP were measured 24 h post-stroke. The variable comparisons across the groups were made using SPSS; similarly, correlation tests were run considering all subjects experiencing stroke. **Results:** Patients with ischemic stroke had higher MPV levels of 9.17 ± 0.48 fL than controls: 8.25 ± 0.45 fL $P < 0.001$. The CRP levels were similarly higher in the stroke group: 3.087 ± 1.11 mg/L versus 0.437 ± 0.24 mg/L, $P < 0.001$. MPV and CRP had a significant positive correlation after analyzing patients with ischemic stroke ($r = 0.332$, $P = 0.014$). **Conclusion:** The results show that MPV and CRP are robust biomarkers for diagnosing ischemic stroke early, as they represent the underlying inflammatory and thrombotic processes. Implementing them in routine checks can promote early detection and management, improving patient outcomes. Further, longitudinal research is critical to confirm and refine their predictive value.

KEYWORDS: Ischemic Stroke; Mean Platelet Volume; C-reactive Protein; Stroke Biomarkers; Thrombosis; Inflammation; Acute Ischemic Stroke; Platelet Activation; Stroke Management

INTRODUCTION

Ischemic stroke is currently one of the leading death and long-term disability causes worldwide, affecting millions of patients annually. Timely and accurately identifying the condition is essential for minimizing potential brain

damage and optimizing patient outcomes.^[1] However, while neuroimaging is the gold standard for stroke identification, it requires expensive equipment unavailable in many medical settings worldwide, especially those in under-resourced areas.^[2] Therefore, there is an urgent need for simple and affordable biomarkers that are instrumental in the early detection of ischemic stroke and assessment of its severity.^[3]

The emergent potential biomarkers, in this case, are mean platelet volume (MPV) and C-reactive protein (CRP).^[4] MPV is a measure of platelet size derived quickly during routine complete blood count tests, with research showing that greater MPV values reflect platelet activation and aggregation.^[5] More

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RESEARCH ARTICLE

Association of obesity parameters and lipid profile in patients with both diabetes mellitus and hypertension in a tertiary care center in North Kerala

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ABSTRACT

Background: Diabetes mellitus (DM) and hypertension are modern-day epidemics that determine the health status of both low- and high-income countries throughout the world. Dyslipidemia and obesity are risk factors that contribute greatly to these diseases. Body mass index (BMI), waist circumference (WC), waist-hip ratio (WHR), waist-height ratio, and lipid profile can detect both general and abdominal obesity. **Aim and Objective:** This study was conducted to find the association between these obesity parameters and lipid profile in patients with both type 2 DM and hypertension. **Materials and Methods:** This was a case-control study conducted in the age group of 30–75 years. Cases were patients with both DM and hypertension. Healthy controls were selected from the general population (hospital staff). 64 subjects were taken in each group in a 1:1 ratio. Anthropometric measurements and blood investigations including blood sugar, serum insulin, lipid profile, and insulin resistance (IR) were measured. Analysis of variance and Pearson's correlation were done. **Results:** The mean age among the cases was 58.50 ± 6.58 years while among the controls was 48.72 ± 9.56 years. Mean anthropometric measurements were found to be significantly higher among the cases compared to the controls ($P < 0.001$). A significant positive correlation was found between IR and BMI, WC, and WHR among patients with both DM and hypertension ($P < 0.05$). **Conclusion:** The use of a combination of the four obesity parameters will yield better results in the detection of obesity and timely intervention can be made to reduce the complications associated with DM and hypertension. WC is a simple tool to exclude IR and to identify those at risk to develop metabolic disease and therefore would benefit most from lifestyle modifications.

KEY WORDS: Diabetes Mellitus; Hypertension; Insulin Resistance; Body Mass Index; Waist Circumference; Waist-hip Ratio; Lipid Profile

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INTRODUCTION

Non-communicable diseases, especially diabetes mellitus (DM) and hypertension, are a major health concern throughout the world. During 2019, non-communicable diseases accounted for 65% of the total deaths in India.^[1] DM is seen among 8% of the population with a projection of 10%

Sensory nerve conduction parameters in patients with hypothyroidism

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Abstract: *Background:* Early determination of sensory nerve dysfunction in hypothyroidism can play a significant role in medical management of neuropathies. *Objectives:* To find out the sensory nerve conduction status of peripheral nerves to evaluate presence of sensory nerve dysfunction in hypothyroid patients. *Materials and Method:* 32 females and 8 males with hypothyroidism and 40 control groups were selected. Sensory nerve conduction parameters of ulnar, median and sural nerve in the hypothyroid group were compared to that of the control group. The relationship of age, sex and BMI with alterations in sensory nerve function was also determined in the hypothyroid group. *Result:* Among the 32 female patients 15 (46.88%) had altered sensory nerve conduction parameters. Only 2 (25%) out of the 8 male patients had altered sensory nerve conduction parameters. Though females were more affected than males the difference was not statistically significant ($p>0.05$). *Conclusion:* There was significant alteration in the sensory nerve conduction parameters in hypothyroid patients. Among the altered parameters, prolonged sensory distal latency and decreased sensory nerve conduction velocity in median nerve was the most common finding.

Keywords: hypothyroid, neuropathy, Nerve conduction velocity.

Introduction

According to the Indian Thyroid Society (ITS), around 42 million people in India suffer from diseases related to thyroid gland, hypothyroidism being the most prevalent disorder affecting one in every eight women [1]. The prevalence of neurological complications have been reported to be around 79% in hypothyroidism [2].

Sensory symptoms are usually the presenting features of neuropathy. Nerve conduction studies assess the shape, amplitude, latency, and conduction velocity of an electrical signal conducted over the tested nerve. They can help determine whether the neuropathy is the result of damage to the axons (axonal neuropathy) or the myelin (demyelinating neuropathy), or both (mixed)[3]. The sensory nerve conduction studies are more sensitive in detecting early or mild disorders of peripheral nerves when compared to the motor nerve conduction studies [4].

This study has been designed to find out the sensory nerve conduction status of peripheral nerves in order to evaluate the presence of sensory nerve dysfunction in hypothyroid patients. The study also aims to find out the association between age, gender and body mass index with the presence of neurological deficits in hypothyroid patients.

This peripheral polyneuropathy, a progressive nerve disorder, can become chronic disability if undetected. Studies show that this neuropathy is reversible. Hence nerve conduction study can be used to estimate the response of peripheral nerve dysfunction to L-Thyroxine replacement therapy. There fore early electrophysiological determination of sensory nerve dysfunction in hypothyroid patients can play a significant role in the medical management of entrapment neuropathies before switching on to surgical modalities of treatment.

RESEARCH ARTICLE

A case-control study to assess the association of obesity and insulin resistance in hypertension at a tertiary care hospital in North Kerala

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ABSTRACT

Background: Non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally. Cardiovascular diseases account for most of the NCD deaths, followed by cancers, respiratory diseases, and diabetes. Detection, screening, and treatment of NCDs are the key components of response to NCDs. **Aim and Objective:** The objective of this work is to study the association of body mass index (BMI), abdominal obesity, and insulin resistance with hypertension and those with both diabetes and hypertension. **Materials and Methods:** A case-control study was done among 30–70 years old people who came to Government Medical College, Kozhikode between August 2014 and July 2015. They were divided into two study groups and one control group. Complete history, physical, and laboratory examination was done among them and the data were entered in a pro forma. **Results:** The mean ages in each group were 57.73, 58.5, and 48.71, respectively, in each group. The male: female ratio was 1.37:1, 1.06:1, and 1:1 in each group. BMI, waist circumference, waist hip ratio, and waist-to-height ratio (WHtR) were increased progressively in patients with hypertension and those with both hypertension and diabetes mellitus, respectively. Insulin resistance was highest in patients with both hypertension and diabetes mellitus. **Conclusion:** Obesity is an important contributor to the development of Type 2 diabetes and hypertension. Among the parameters to measure obesity, WHtR is considered the supreme. Insulin resistance is found in hypertensives and those with diabetes and hypertension.

KEY WORDS: Hypertension; Type 2 Diabetes Mellitus; Insulin Resistance; Abdominal Obesity

INTRODUCTION

Hypertension or elevated blood pressure is a serious medical condition that significantly increases the risk of heart, brain, kidney, and other diseases. It is estimated that globally, 1.28 billion adults aged 30–39 years suffer from hypertension.

About two thirds of this population lives in low- and middle-income countries. It is a premature cause of death worldwide. About 46% of the individuals with hypertension are unaware of their hypertensive status.^[1] Around 7.5 million deaths or 12.8% of the total of all annual deaths worldwide occur due to high blood pressure.^[2] This accounts for 57 million disability adjusted life years (DALYS) or 3.7% of total DALYS.^[3]

National Family Health Survey-5 (NFHS-5) data in India show that the prevalence of elevated blood pressure or those taking medicine to control blood pressure is 30.2% in men and 25.3% in women. The proportion of mildly elevated blood pressure in males and females were 15.7% and 12.4%, respectively. Whereas, the proportion of moderately or

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Nuclear morphometric study of malignant breast lesions with histopathological correlation in South Indian population

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Abstract:

Background: nuclear morphometric measurements like major axis, minor axis, nuclear area and nuclear perimeter vary according to malignant grades of breast carcinoma. **Materials and methods:** Diagnosis of malignant cases was done in 31 patients by correlation of clinical history, radiological findings, adequacy of smear, predominant patterns and individual cell cytomorphology. Morphometric values like major axis of nucleus, minor axis of nucleus, nuclear area and nuclear perimeter were measured using ProgresR capture pro 2.9.0.1 software. **Result:** 16 cases (51.61%) were diagnosed as grade 1, eight (25.80%) cases were grade 2, seven (22.58%) cases were grade 3 using Robinson's cytological grading. One-way ANOVA test showed that these cytodiagnostic categories are significantly different from each other for the nuclear parameters. (p value < 0.01). **Conclusion:** as there is grey area in diagnosing breast lesions from FNAC, nuclear morphometry can be pivotal in prompt diagnosis and also improvement in mortality of patients with malignant breast carcinoma.

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Introduction

Breast cancer is the second most common cancer among women in India and accounts for 7% of global burden of breast cancer and one-fifth of all cancers among women in India.¹

A definitive cancer diagnosis is given in approximately two-thirds of screen detected cancers by fine needle aspiration cytology as a part of triple diagnosis. The other one- third requires further investigation to give the go-ahead for more extensive definitive surgery. The reason may be due to discordance with radiological findings, doubts about invasion, or a relatively bland cytology as in low-grade cancers, mainly lobular carcinoma of classic type and tubular carcinoma.²



African Journal of Biological Sciences



Effect of ethanolic extract of *Hemidesmus indicus* on spermiogram and sex hormone levels of wistar rats

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ABSTRACT

Male infertility poses an emerging concern in public health circles. While surgical procedures and interventions are available, they come with hefty costs. Given their perceived safety and affordability, herbal remedies have gained popularity in addressing infertility. *Hemidesmus indicus* (HI), a traditional medicinal plant, is renowned for its purported efficacy in enhancing semen quality. Thus, this study aimed to evaluate the reproductive effects of *Hemidesmus indicus* (HI) extract on sperm abnormalities elicited by Monosodium Glutamate (MSG). Subfertile rats induced with Monosodium glutamate (MSG) were orally administered the ethanolic extract of *Hemidesmus indicus* (400mg/Kg body weight) for 30 days. The extract's impact on sperm count, motility, viability, morphology, testis weight, semen pH, was compared with control and MSG-treated groups. The results revealed that *Hemidesmus indicus* extract significantly boosted sperm count ($p < 0.001$), and viability ($p < 0.001$) motility ($p < 0.001$), compared to the MSG group, which experienced notable declines in these parameters. Abnormal sperm morphology was significantly higher in the MSG group ($p < 0.001$) but significantly reduced in the HIE group ($p = 0.007$) and MSG+HIE group ($p = 0.001$) compared to the MSG group. These findings indicate that *Hemidesmus indicus* extract mitigated the adverse effects of monosodium glutamate on sperm parameters, suggesting its potential in enhancing fertility and safeguarding the reproductive system against monosodium glutamate-induced damage.

Keywords ; *Hemidesmus indicus* Extract, Monosodium Glutamate, Spermiogram, sperm count, sperm morphology, male sex hormones

THERAPEUTIC EFFECTS OF HEMIDESMUS INDICUS EXTRACT IN ALLEVIATING MONOSODIUM GLUTAMATE - INDUCED TESTICULAR DAMAGE

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Abstract

Much emphasis has been focused to the issue of infertility linked to the impact of food additives and enhancers on testicular toxicity. Because of the natural chemical components found in plants, herbal medications are becoming a viable option to alleviate these detrimental effects on the testes. The purpose of this study was to assess how well Hemidesmus indicus ethanolic extract safeguard rat testicular structure from the damage brought about by monosodium glutamate (MSG) and how antioxidant markers were altered. The study involved Twenty-four (12-week old) male Wistar rats were divided into four groups at random: six animals each for the Control group (C), MSG group (MSG), Hemidesmus indicus ethanolic extract (HIE) group, and paired Hemidesmus indicus ethanolic extract and MSG (HIE+MSG) group. The study was conducted over 30 days. The left testis was evaluated for antioxidant enzyme activity at the conclusion of the time, and the right testis was subjected to a histological examination. The rats that were subjected to MSG showed significant morphological changes, including diminished growth of germ cells (including spermatids), disruption of the basal lamina, cytoplasmic vacuolation, and abnormalities in the levels of antioxidants in the testicles. Positively, there was a noticeable and steady alleviation in these effects in the group that received MSG and HIE treatment. The present study highlights the potential of ethanolic extract from Hemidesmus indicus as a therapeutic measure against testicular alterations caused by MSG, indicating the necessity for additional research on the effects of this extract on reproductive health and male fertility.

Keywords: Hemidesmus Indicus Extract, Monosodium Glutamate, Histology of Testis, Antioxidants, Seminiferous Tubules, SOD, Glutathione.

1. INTRODUCTION

Infertility presents a significant global health challenge due to its profound psychosocial repercussions. Various chemicals and food additives have been associated with infertility concerns. One such additive, monosodium glutamate (MSG), has stirred considerable debate both domestically and internationally regarding its safety (Moore, 2003). MSG, a salt of naturally occurring glutamic acid, serves as a taste enhancer in numerous food products. Despite being a naturally abundant amino acid essential for human metabolism, excessive MSG consumption has raised safety concerns, particularly regarding its potential to increase brain glutamate levels and disrupt normal functioning, given its role as a neurotransmitter (IFIC, 1994).

Evaluating the Role of Micronutrients and Hormones in Cognitive Function: A Comparative Study in Children with Learning Disabilities Undergoing Speech Therapy

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ABSTRACT

Background: Children with learning difficulties have significant challenges, affecting their cognitive ability and general development. Recent studies have highlighted the importance of micronutrients and hormonal balances in determining cognitive ability. However, knowledge of the connection between these physiological markers and mental processes in children with learning impairments is still growing. **Objectives:** The main aim of this research was to assess the concentrations of essential micronutrients (specifically Vitamin D, C, B vitamins, Magnesium, and Zinc) as well as hormones (Thyroxine, Epinephrine, and Norepinephrine) in children who have been identified with learning difficulties. In addition, the research's objective was to compare the aforementioned biochemical levels with those of a control group with comparable age and sex characteristics. One of the study's primary objectives was to investigate the correlation between the aforementioned biochemical parameters and cognitive abilities, as assessed by the Language Proficiency Test (LPT) scores in children undergoing speech treatment. **Materials and Methods:** 160 children between the ages of 6 and 13 were enrolled in this



The Correlation Between Serum Magnesium & Zinc with Lipoprotein-Associated Phospholipase A2 (Lp-PLA2) In Patients with Metabolic Syndrome

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Abstract: Metabolic syndrome (MS) increases cardiovascular disease and death risk. Many studies have found a link between vascular inflammation and metabolic disorders. Discovering unique and specific blood-based indicators for vascular inflammation, particularly in metabolic syndrome related to obesity, such as (lipoprotein-associated phospholipase A2) and Lp-PLA2, could provide valuable assistance in identifying individuals at an elevated risk for cardiovascular incidents. Lp-PLA2 has been implicated in metabolic dysregulation, playing a crucial role in the onset of microvascular dysfunction and the exacerbation of oxidative stress. Lp-PLA2 is essential in the pathogenesis of atherosclerosis and may be used as a biomarker to predict future cardiovascular events. The study comprised 200 participants categorized into two groups: individuals diagnosed with MS (Metabolic Syndrome) (Test, n = 100) and those without MS (controls, n = 100). The serum activity levels of hs-CRP and Lp-PLA2 were measured and subsequently analysed for correlation with micronutrients (magnesium (Mg) and zinc (Zn)) and lipoprotein markers (Ox LDL, Apo-A1, and Apo-B). The study showed a significant correlation between Lp-PLA2 and the Mg level of patients with MS, whereas Hs-CRP did not exhibit a significant correlation. The test population did not exhibit a noteworthy elevation in oxidized LDL level, despite the presence of inflammatory changes as indicated by the level of Lp-PLA2. A significant correlation was observed between the Zn level in patients with MS and Lp-PLA2, whereas Ox LDL did not exhibit a significant correlation. The current study revealed a significant link between Mg and Zn and CVD risk in the Kerala population. The study found elevated levels of LpPLA2, an emerging biomarker for cardiovascular risk, in people with MS.

Keywords: Metabolic syndrome. Vascular inflammation, Oxidative stress, Lp-PLA2, Cardiovascular disease, Micronutrients.

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THERAPEUTIC EFFECTS OF HEMIDESMUS INDICUS EXTRACT IN ALLEVIATING MONOSODIUM GLUTAMATE - INDUCED TESTICULAR DAMAGE

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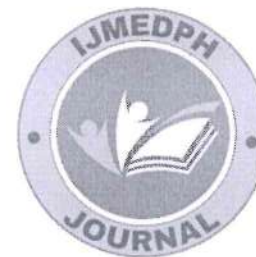
Abstract

Much emphasis has been focused to the issue of infertility linked to the impact of food additives and enhancers on testicular toxicity. Because of the natural chemical components found in plants, herbal medications are becoming a viable option to alleviate these detrimental effects on the testes. The purpose of this study was to assess how well *Hemidesmus indicus* ethanolic extract safeguard rat testicular structure from the damage brought about by monosodium glutamate (MSG) and how antioxidant markers were altered. The study involved Twenty-four (12-week old) male Wistar rats were divided into four groups at random: six animals each for the Control group (C), MSG group (MSG), *Hemidesmus indicus* ethanolic extract (HIE) group, and paired *Hemidesmus indicus* ethanolic extract and MSG (HIE+MSG) group. The study was conducted over 30 days. The left testis was evaluated for antioxidant enzyme activity at the conclusion of the time, and the right testis was subjected to a histological examination. The rats that were subjected to MSG showed significant morphological changes, including diminished growth of germ cells (including spermatids), disruption of the basal lamina, cytoplasmic vacuolation, and abnormalities in the levels of antioxidants in the testicles. Positively, there was a noticeable and steady alleviation in these effects in the group that received MSG and HIE treatment. The present study highlights the potential of ethanolic extract from *Hemidesmus indicus* as a therapeutic measure against testicular alterations caused by MSG, indicating the necessity for additional research on the effects of this extract on reproductive health and male fertility.

Keywords: *Hemidesmus Indicus* Extract, Monosodium Glutamate, Histology of Testis, Antioxidants, Seminiferous Tubules, SOD, Glutathione.

1. INTRODUCTION

Infertility presents a significant global health challenge due to its profound psychosocial repercussions. Various chemicals and food additives have been associated with infertility concerns. One such additive, monosodium glutamate (MSG), has stirred considerable debate both domestically and internationally regarding its safety (Moore, 2003). MSG, a salt of naturally occurring glutamic acid, serves as a taste enhancer in numerous food products. Despite being a naturally abundant amino acid essential for human metabolism, excessive MSG consumption has raised safety concerns, particularly regarding its potential to increase brain glutamate levels and disrupt normal functioning, given its role as a neurotransmitter (IFIC, 1994).



Original Research Article

THE INFLUENCE OF MICRONUTRIENTS ON COGNITIVE FUNCTIONS IN CHILDREN WITH LEARNING DISABILITIES: A CONTROLLED STUDY

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ABSTRACT

Background: The Cognitive development of children with learning disabilities is challenging in pediatric and child psychology. Moreover, according to recent research, serum levels of micronutrients can contribute not only to cognitive dysfunction but also to cognitive function. Therefore, there is a hypothesis that dietary supplementation can change the results of cognitive therapies for children with learning disabilities (LD). **Objectives:** The present study aimed to test the theory of cognitive improvement due to the intake of specific micronutrients. The research question was whether there is a difference in cognitive improvement between children with LD who receive the supplementation and those who do not. If so, what micronutrients appear to have the most significant effects.

Materials and Methods: The controlled study involved two groups of 60 children with diagnosed LD. Test one received the supplementation targeted at seven micronutrients, and the control group was administered a placebo. Beforehand to the beginning and after six months of supplementation, children undertook standardized tests, and the serum levels of targeted micronutrients were measured. The collected data were analyzed statistically.

Results: Cognitive test scores of the test group significantly improved, and those changes were sustained until the end of the testing period. Vitamin D and Folate serum levels correlated with the standardized test scores. The regression analysis proved the correlation above.

Conclusion: The supplementation with targeted seven micronutrients positively influences cognitive function in children with LD. The implication for practice includes considering the nutritional status of such children from a cognitive point of view.

Keywords: Micronutrients, Cognitive Functions, Learning Disabilities, Dietary Supplements, Cognitive Improvement, Neurodevelopmental Disorders, Nutritional Interventions.

INTRODUCTION

Learning disabilities in children are a heterogeneous group of neurodevelopmental disorders, markedly impairing information processing and substantially affecting academic achievements and activities of daily living.^[1] However, several factors are involved in the etiology of LD, including genetic,

environmental, and neurobiological factors. Recent research suggested that adequate nutritional status, particularly with micronutrients, plays a prominent role in cognitive development and related functions.^[2] Micronutrients include vitamins and minerals essential for the brain's structure and functional biology. Vitamin D, Folate, Vitamin B12, and others were particularly noted for their neuroprotective and functional assets in maintaining

Correlation of micronutrient status with atherogenic index and oxidative stress markers in metabolic syndrome

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ABSTRACT: The prognostication of cardiovascular events in people with metabolic syndrome (MetS) is paramount due to their heightened risk profile. MetS is typified by a cluster of medical conditions such as raised blood pressure, hyperglycemia, central adiposity, and anomalous levels of cholesterol or triglycerides, which collectively increase the likelihood of developing cardiovascular disease. Anticipating cardiovascular events in these individuals enables enhanced prevention approaches, more efficient management, and better patient results. The present investigation involved an examination of the correlation between a range of biomarkers, namely Lp-PLA2, Apo A1, Apo B, hs-CRP, OxLDL, MDA, and Vitamin C, and the atherogenic index in a population afflicted with MetS. The results indicated no statistically significant association between the markers mentioned above and the atherogenic index within the sample population. This suggests that these markers may not possess sufficient predictive value for cardiovascular events in this demographic. Nevertheless, it was noted that although there was no discernible correlation with the atherogenic index, the MetS cohort exhibited increased serum concentrations of Lp-PLA2, OxLDL, and MDA. The markers mentioned above are widely recognized as reliable indicators of inflammation and oxidative stress, two crucial processes in the development of atherosclerosis and subsequent cardiovascular events. As a result, the increased prevalence of MetS may indicate heightened susceptibility to cardiovascular

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The Role of Lp-PLA2 as a Mediator Between Serum Magnesium and Zinc Levels and Cardiovascular Risk in Patients With Metabolic Syndrome

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Abstract

Background: Metabolic syndrome (MetS) is a collection of conditions that includes abdominal obesity, low high-density lipoprotein (HDL) levels, high triglycerides, hypertension, and impaired glucose metabolism, all of which are risk factors for cardiovascular diseases. Of the biomarkers above, lipoprotein-associated phospholipase A2 (Lp-PLA2) has been highlighted as a critical link between inflammation and the pathogenesis of atherosclerosis, which strongly predicts cardiovascular events. Micronutrients like magnesium and zinc are essential in maintaining metabolic and cardiovascular health, but these micronutrient deficiencies occur frequently among individuals with MetS. This study aimed to consider the association between serum magnesium and zinc levels with Lp-PLA2 and how these associations could link pathways in cardiovascular risk among MetS patients.

Methods: This was a comparative cross-sectional study of 100 cases diagnosed as MetS and compared with an equal number ($n = 100$) of age and matched healthy control. Blood magnesium, zinc, and Lp-PLA2 levels were determined by colorimetric assay. We also tested the association of Lp-PLA2 with levels of micronutrients, and we evaluated whether Lp-PLA2 was a mediator in the pathway between MetS and cardiovascular risk. The data were analyzed on IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp; the results will be considered statistically significant if $p < 0.05$.

Results: The serum magnesium and zinc concentrations in patients with MetS were significantly lower than in the controls ($p < 0.001$). The Lp-PLA2 level was much higher in the MetS group than the no-MetS, and it correlated inversely with serum Mg ($r = -0.35$, $p < 0.001$) or Zn levels ($r = -0.42$, $p < 0.001$). After multivariate analysis, the mediating effect of Lp-PLA2 in the pathway from micronutrient deficiency to cardiovascular risk was maintained, whereby high levels were associated with increased atherogenic index and oxidative stress markers.

Conclusions: These results show that Lp-PLA2 is an intermediate step in the relationship between low levels of some micronutrients and cardiovascular risk among MetS patients. Our findings indicate that a sufficient magnesium and zinc status might offer cardiovascular protection through lessening Lp-PLA2 activity. These observations demonstrate the potential benefits of high-risk enrichment and dietary intervention for detecting and controlling micronutrient deficiencies in MetS subjects to impede further cardiovascular diseases.

Keywords: atherogenic index; cardiovascular risk; lipoprotein-associated phospholipase a2; metabolic syndrome; micronutrient deficiency; oxidative stress.

Evaluating the Role of Micronutrients and Hormones in Cognitive Function: A Comparative Study in Children with Learning Disabilities Undergoing Speech Therapy

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ABSTRACT

Background: Children with learning difficulties have significant challenges, affecting their cognitive ability and general development. Recent studies have highlighted the importance of micronutrients and hormonal balances in determining cognitive ability. However, knowledge of the connection between these physiological markers and mental processes in children with learning impairments is still growing. **Objectives:** The main aim of this research was to assess the concentrations of essential micronutrients (specifically Vitamin D, C, B vitamins, Magnesium, and Zinc) as well as hormones (Thyroxine, Epinephrine, and Norepinephrine) in children who have been identified with learning difficulties. In addition, the research's objective was to compare the aforementioned biochemical levels with those of a control group with comparable age and sex characteristics. One of the study's primary objectives was to investigate the correlation between the aforementioned biochemical parameters and cognitive abilities, as assessed by the Language Proficiency Test (LPT) scores in children undergoing speech treatment. **Materials and Methods:** 160 children between the ages of 6 and 13 were enrolled in this

Maternal complications of hypertension in pregnancy – A five year study

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Abstract

Introduction: Hypertension is the most common medical problem encountered in pregnancy. Approximately 18% of maternal deaths worldwide are due to hypertension complicating pregnancy. For every woman who dies, it is estimated that 20 others suffer severe morbidity or disability. The proportion of women surviving severe maternal complications has been proposed as a useful gauge for the evaluation of the quality of maternal health care and its determinants, with the potential to complement the information obtained from the reviews of maternal deaths.

Objectives: To study the prevalence and document the incidence of various maternal complications in women with hypertension in pregnancy.

Materials and Methods: A retrospective study was conducted at JSS hospital, Mysuru.

The medical records of women with hypertension in pregnancy from 2011 to 2015 were retrieved. The maternal complications were documented.

Results: The prevalence of hypertension in pregnancy was 8.5%. Mild pre eclampsia was the most commonly encountered problem. Majority of the women developed hypertension only after 34 weeks. However, various complications such as abruptio placentae, HELLP, acute renal shutdown, disseminated intravascular coagulation, posterior reversible encephalopathy syndrome, retinal changes, and ascites were observed. The mortality rate was 1.6%.

Conclusion: Hypertension continues to be a leading cause of maternal morbidity and mortality. However, with timely management, the complications and mortality can be reduced.

Keywords: Hypertension, Pregnancy, Pre eclampsia, Eclampsia, HELLP.

Introduction

Hypertension complicates 2-3% of all pregnancies, and accounts for nearly 18% of maternal mortality globally. The national high blood pressure education program working group classifies hypertensive disorders in pregnancy as: Chronic hypertension, gestational hypertension, pre-eclampsia/eclampsia and pre-eclampsia superimposed on chronic hypertension.¹ Pre-eclampsia is a disorder specific to pregnancy, affecting multiple organ systems. There is vasospasm of small vessels and formation of microthrombi leading to reduced organ perfusion. It complicates about 3-6% of pregnancies, and is more commonly seen in primigravidas.^{2,4} Hypertension in pregnancy can have life threatening maternal and perinatal complications.^{5,6} Some of the common maternal complications are abruptio placentae, HELLP syndrome, eclampsia, acute tubular necrosis, disseminated intravascular coagulation and maternal mortality. The various perinatal complications are preterm delivery, IUGR, intra uterine and neonatal demise.⁷ Additionally, women with pre-eclampsia are at a higher risk of developing premature cardiovascular and cerebrovascular diseases and other chronic illnesses later in life. Although extensive research has been done, the cause of pre-eclampsia remains elusive.⁸

The objectives of our study were: To study the prevalence of different types of hypertensive disorders in

pregnancy among patients referred to a tertiary care hospital.

To identify the incidence of various maternal complications in these patients.

To determine whether early detection and referral can decrease complications.

Materials and Methods

A retrospective study was conducted in the Department of Obstetrics & Gynaecology at JSS hospital, Mysuru, which is a tertiary care teaching and referral centre. Patient records from January 2011 to December 2015 were retrieved from the medical records department. The demographic parameters such as the age, parity, residence and occupation were documented. The presence of multiple pregnancy, period of gestation at detection of hypertension, type of hypertension, the anti hypertensive drugs taken and use of magnesium sulphate were recorded. The various maternal complications studied were eclampsia, retinal changes, ascites, renal failure, abruptio placentae, DIC, HELLP, PRES, ICU stay, ventilator support and maternal mortality.

Statistical Analysis

The collected data was analyzed using the SPSS software, version 21.0.

CLINICAL PROFILE OF THROMBOCYTOPENIA IN 3RD TRIMESTER OF PREGNANCY AND MATERNAL AND FETAL OUTCOME IN GESTATIONAL THROMBOCYTOPENIA

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Abstract

Background: Thrombocytopenia is the second leading cause of blood disorders in pregnancy. It complicates 7 – 10% of pregnancies. Gestational thrombocytopenia, a mild thrombocytopenia occurring in the third trimester with spontaneous resolution in the post-partum, is the most common cause in pregnancy. The present study aimed to determine the clinical profile of thrombocytopenia in the third trimester and maternal and foetal outcomes in gestational thrombocytopenia. **Materials and Methods:** The study is a hospital based prospective study conducted in the Department of OBG, Government Medical College Kottayam for a period of fifteen months. The study was conducted on 164 antenatal women in their third trimester of pregnancy with thrombocytopenia. Data was collected using a proforma and the course of the pregnancy and investigation profile was monitored. The etiological factors of thrombocytopenia and the maternal and foetal outcomes of gestational thrombocytopenia were analyzed. Statistical analysis was done using SPSS version 24. **Result:** 164 antenatal women in their third trimester with thrombocytopenia were followed up. 37.2% of the study population belonged to 26 to 30 years old. 45.7% were primigravidae. 72.6% had mild thrombocytopenia only. 3.7% had severe disease. The most common cause of thrombocytopenia was gestational thrombocytopenia (75.6%). The second common cause was preeclampsia-HELLP syndrome. Preterm deliveries comprised of 15.3% of gestational thrombocytopenia ($p < 0.001$). There was significant association between gestational thrombocytopenia with abruptio placenta ($p < 0.003$), with mild post-partum haemorrhage ($p < 0.008$), with blood product transfusion ($p < 0.001$). While analyzing the foetal outcome, though there were no still- births, there was significant association with foetal growth restriction and birth asphyxia in the study. There was no significant association with neonatal thrombocytopenia. **Conclusion:** It is concluded that gestational thrombocytopenia is the most common of thrombocytopenia in the third trimester of pregnancy and that significant maternal and foetal adverse outcomes is to be anticipated in such cases.

INTRODUCTION

Thrombocytopenia is defined as blood platelet count less than 1,50,000. It is the second leading cause of blood disorders in pregnancy, the first being anemia. It complicates 7 – 10 % of all pregnancies.^[1] It is classified as mild with a platelet count of 1 to 1.5 lakhs, moderate with a count of 50000 to 1 lakh and severe when the count is less than 50000.^[2] Though most cases are mild, with severe thrombocytopenia, it can lead to maternal

and fetal life-threatening conditions. Causes include Gestational thrombocytopenia (most common), Idiopathic thrombocytopenia (ITP): a pre-existing cause, HELLP syndrome and severe Pre-eclampsia, Acute fatty liver of pregnancy (AFLP), other rarer causes like Thrombotic thrombocytopenic purpura, Hemolytic Uremic syndrome, Disseminated intravascular coagulopathy, Systemic Lupus Erythematosus, Antiphospholipid antibody syndrome.^[3] Gestational Thrombocytopenia is the most common cause. Exact aetiology is not known

Original Research Article

PREGNANCY OUTCOME OF ISOLATED OLIGOHYDRAMNIOS IN UNCOMPLICATED TERM PREGNANCIES: AN OBSERVATIONAL COMPARATIVE STUDY

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ABSTRACT

Background: Oligohydramnios and its outcome are a relevant issue related to mother and fetus. Purpose of this study is to establish the obstetric and perinatal outcome in pregnancy associated with isolated oligohydramnios as compared to women with normal liquor. **Materials and Methods:** This is an observational comparative study done at Al Azhar Medical College, Thodupuzha, Kerala, India on 50 pregnant women of 37 weeks of gestation or more and diagnosed to have oligohydramnios without any high-risk factors. Age, parity, gestational age matched patients without any high-risk factors and AFI >5 CM attending the opd /ward were taken as controls. In each group there were 25 subjects. After getting informed consent those who fulfilled the inclusion criteria were followed through the delivery and immediate neonatal outcome were assessed. Parameters like age parity, amniotic fluid volume, gestational age at delivery, mode of onset of labour, indication of Induction, methods of induction, need for augmentation of labour, CTG patterns, colour of liquor, mode of delivery, indications of caesarean section, distribution of APGAR SCORE were analysed. **Result:** There was significant difference in maternal outcome in patients with isolated oligohydramnios in the form of increased rates of induction of labour, augmentation of labour, meconium-stained liquor, non-reassuring fetal heart pattern, and caesarean section rates without any significant effects on neonatal outcome. **Conclusion:** Isolated oligohydramnios has increased rate of induction of labor, meconium-stained liquor, CTG abnormalities and caesarean section rates without significant increase in neonatal morbidity and mortality.

INTRODUCTION

Amniotic fluid is very important for growth of fetus in sterile environment, avoidance of external injury and reduction of impact of uterine contractions. Oligohydramnios is a condition where amniotic fluid volume is very low and it has been associated with poor pregnancy outcomes. It can cause increased risk of intrauterine growth restriction, meconium aspiration syndrome, severe birth asphyxia, low Apgar score and maternal morbidity in the form of increased risk of induction of labor, operative interventions etc.^[1,2] Thus evaluation of amniotic fluid has become an integral part of antenatal fetal assessment.

According to some studies oligohydramnios has significant impact on maternal and neonatal outcome while some others observed that isolated oligohydramnios had no adverse effect on perinatal

outcome.⁵ The incidence of oligohydramnios with general reporting rate is 1 and 3 percent. Oligohydramnios per se does not lead to maternal complications but its underlying cause may. Irrespective of the cause, mother is at risk of caesarean delivery for fetal distress secondary to growth restriction, malformations or umbilical cord compression.^[3-5]

Chauhan and associates performed a meta-analysis of 18 studies in which they found that oligohydramnios has increased risk of caesarean section for fetal distress and increased risk of low APGAR score.^[6] Baron et al reported that cord compression during labor is very common in oligohydramnios and it can cause variable decelerations and increased rate of caesarean section.^[7] Divon et al studied 638 women with post term pregnancy in labor and found that only those

ANALYSIS OF CAESAREAN SECTION RATES BY AUDITING ROBSON'S TEN GROUP CLASSIFICATION; A SINGLE CENTRE APPROACH

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ABSTRACT

Background: The rate of caesarean section is rising day by day and it has become a major health concern. Caesarean section is associated with both maternal and perinatal morbidity and mortality for present and future pregnancies. So, an audit of caesarean section is very important for analysing the indications for caesarean section and make recommendations for decreasing caesarean delivery rates. Robsons ten group classification system analyses the caesarean section rates and allow us to bring changes in our practice. **Materials and Methods:** This was a cross-sectional study conducted in al Azhar medical college, Thodupuzha, Idukki, Kerala. a single hospital from march 2024 to march 2025, study population included 739 pregnant women, in that 348 underwent caesarean section and they were grouped according to Robsons ten group classification system after collecting data and analysed. **Result:** Out of 348 women who underwent caesarean section the overall caesarean section rate was 47.09% and according to Robsons 10 group classification system after grouping, group 5 (previous LSCS) had the maximum contribution followed by group 2 (nulliparous >37 weeks, induced) they contributed 33.33% and 26.15% respectively. The most common indication for caesarean section was previous LSCS followed by foetal distress followed by meconium-stained liquor which was 37.93%, 19.25%, 13.22% respectively. **Conclusion:** Defining optimal caesarean section rate in any setting won't be realistic due to different health status of patients. Robson's ten group classification system helps in auditing the caesarean section rates and helps us to analyse the major contributor of increasing caesarean section rates. Group 5 and group 2 contributed the maximum caesarean section rates. It is important to individualise every labour, and offering TOLAC for women with previous LSCS after proper patient selection and counselling regarding risks and benefits. The same time changing the norms for nonprogression of labour, proper training for obstetricians for CTG interpretation in case of foetal distress, trying amnioinfusion for meconium-stained liquor and encouraging obstetricians to perform versions when not contraindicated can reduce the cs rates.

INTRODUCTION

The rate of cesarean section is increasing worldwide and it is always going beyond who recommended rate of 15% for all deliveries.^[1] but increased cesarean section rate > 16% does not reduce maternal and neonatal mortality.^[2,3] At the same time there is increased chance of placenta accreta, retained placenta and uterine rupture with chances of peripartum hysterectomy when number of cesarean sections increases.^[4-6]

The factors responsible for increase in the cesarean section rates are maternal characteristics, socio economic and medicolegal causes and malpractice.^[7]

Other common factors include maternal request, hospital system factors, type of care provided by insurance and finally obstetrician's choice. All these factors are very complicated and non-separable.^[8]

Recent national family health survey (NFHS-5, 2019-2021) states that the cesarean section rate in India was increased from 17.2% to 21.5%. in many other parts of country, the rate of cesarean section was high such as in Telangana it is 60.7% and in Tamil Nadu it is 38.8% and in Kerala it is 42.4%. the lowest cesarean section rates found in Nagaland and it is 5.2%.^[9]

There are so many classification systems but there is no internationally accepted standardized classification system for comparison and monitoring of cesarean section rates. And those were not very

PREGNANCY OUTCOME OF MECONIUM-STAINED AMNIOTIC FLUID IN UNCOMPLICATED TERM PREGNANCIES: A CASE CONTROL STUDY

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Abstract

Background: Evaluation of fetal wellbeing during labor is on the basis of fetal activity and color of liquor in labor in vertex presentation. When there is meconium-stained liquor during labor it could be a sign of fetal distress and response to hypoxic insult. **Materials and Methods:** This is a hospital-based case control study conducted at AL Azhar Medical College, Thodupuzha, Kerala, over a period of one year. All uncomplicated pregnant women of 37-42 weeks of gestation who had meconium-stained amniotic fluid following spontaneous rupture of membrane or artificial rupture of membrane were included in the study. Grading of MSL, FHR abnormality, mode of delivery, APGAR score, NICU admission were measured. **Result:** A total of 339 pregnant women were studied, in that 113 had MSL and taken as study group and rest 226 as control group. In this 52% had abnormal FHR, 28% had spontaneous vaginal delivery, 22% had instrumental delivery, 50% had cesarean section. Rate of low APGAR score was higher in study group. 47% babies had NICU admissions. Incidence of meconium aspiration syndrome in our study was 1.2%. **Conclusion:** When fetal scalp PH and umbilical cord lactate estimation facilities are not available association of MSL with abnormal FHR should be taken as fetal distress and consideration of early operative intervention are necessary.

INTRODUCTION

Fetal wellbeing is evaluated mainly on the basis of fetal movements, FHR pattern, and color of amniotic fluid. Presence of meconium-stained liquor is always considered as a sign of fetal distress, although the real cause is not known but it is considered as a physiological maturity of fetus also.^[1,2] When there is meconium aspiration it neutralizes the surfactant action and promote inflammation of lung tissues and sometimes it can lead to pulmonary vascular and pulmonary hypertension. So there are conflicting outcomes have been reported when there is meconium stained liquor which differs with degree of meconium staining.^[3]

One of the main reason for increased operative deliveries are due to MSAF. 1 When there is presence of meconium below the vocal cord is known as meconium aspiration syndrome 4 According to previous studies only 5% of neonate born through meconium stained amniotic fluid develop MAS.^[4] Many studies suggest that perinatal mortality is less with MSAF. But there is significant association between the consistency of meconium

and abnormal FHR patterns, increased rate of cesarean section and Low APGAR score.^[1,5]

So the present study was done to find out the maternal and perinatal outcome with meconium stained amniotic fluid at term pregnancies as the direct and indirect effect of MSL remain uncertain, but it should be considered as predictor of maternal and perinatal morbidity and mortality.^[6]

MATERIALS AND METHODS

It is a hospital-based case control study conducted in the Department of obstetrics and gynecology, Al Azhar Medical College, Thodupuzha, Kerala, from march 2020 to march 2021. Study population comprised of a total of 339 pregnant women, in that 113 patients had meconium-stained liquor and taken as study group and rest 226 patients had normal liquor and taken as control group after spontaneous or artificial rupture of membrane. Meconium-stained liquor was graded as thick MSL and thin MSL and were monitored continuously with CTG. MSL is considered thick when the fluid is green in color, viscous, tenacious and containing large amount of particulate material and thin if the fluid is

PREGNANCY OUTCOME OF ELECTIVE AND EMERGENCY CAESAREAN SECTION IN UNCOMPLICATED TERM PREGNANCIES: AN OBSERVATIONAL COMPARATIVE STUDY

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Abstract

Background: The most performed surgical procedure in obstetrics is cesarean section. Purpose of this study is to establish the maternal and neonatal outcome after emergency and elective cesarean section, and identifying preventable risk factors wherever possible. **Materials and Methods:** This is an observational comparative study done at Al Azhar medical college Thodupuzha, Kerala, India on 185 pregnant women who underwent cesarean section and who fulfilled the inclusion criteria in the department of obstetrics and gynecology. After taking consent patients were identified into two groups based on type of cesarean section that is elective or emergency. In elective cesarean section group 79 women were studied whereas emergency cesarean section group 106 women were studied. Maternal parameters like indication of cesarean section, intra operative and post-operative complications were analyzed. neonatal parameters like respiratory distress syndrome, NICU admissions, Apgar score were analyzed. **Result:** Most number of cases in elective cesarean section group underwent cesarean section for prior cesarean section for maternal request (89%) and for emergency cesarean section for fetal distress (32%). Intraoperative, post-operative complications and adverse neonatal outcome were more with emergency CS group. **Conclusion:** Adverse maternal and neonatal outcome was found to be more in emergency cesarean section compared to elective cesarean section. Inducing labor with proper indication, assessment of cephalopelvic disproportion and intrapartum monitoring using partogram are some of the preventable factors identified to reduce adverse outcome.

INTRODUCTION

The most performed major surgical procedure in obstetrics is caesarean section. The common indications are prior caesarean section, uterine dystocia, abnormal presentation and foetal distress. On the basis of timing and urgency of performing, caesarean section can be classified into emergency and elective. elective caesarean section is planned procedure whereas emergency caesarean section is when it is done in an obstetric emergency where complication of pregnancy suddenly arises during the process of labor.^[1] most of the caesarean sections are being performed for the indications of prior caesarean section.^[2] These women are more likely to undergo caesarean section in subsequent pregnancies for which risks are even greater. The acceptable rate of caesarean section is 5-15% according to WHO but in most of the countries this threshold has been crossed.^[1] The indications for

rise in caesarean section is anxiety of mother about the delivery, family's request for baby's delivery at particular time, mothers wish to have a caesarean section on account of precious pregnancy,^[1] rise in average maternal age, decrease in vaginal breech delivery, decrease in instrumental delivery, increase in labour induction, fear of litigation by the obstetrician etc.

In India the highest rate is in Telangana (58%) followed by Andhra Pradesh (40.1%) and Kerala (35.8%). The lowest rate of caesarean section is seen in Nagaland (5.8%) followed by Bihar (6.2%).^[1] Caesarean section is a surgical procedure with numerous complications for both mother and baby such as postpartum haemorrhage, surgical site infections, need for blood transfusion, endometritis, trauma to viscera, prolonged hospital stay etc. for the mother and respiratory distress syndrome, TTN (transient tachypnea of new born), hypothermia, foetal injury like skin laceration, cephalhematoma,

Research Article

Estimation Of Fetal Weight a Simple Formula

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Abstract Background: A quick and easy method of estimation of foetal weight in utero is an obvious benefit to the clinician practicing modern obstetrics as the perinatal mortality and morbidity is affected not only by foetal age but also by the foetal weight. **Materials and Methods:** symphysiofundal height (SFH) and abdominal girth (AG) was measured in 196 pregnant women attending the OPD or Maternity ward at term. The station of the head was found and various methods of calculation of baby weight was used to estimate the baby weight. The actual weight of the baby was measured at the time of birth and statistical analysis done. **Results:** All the method of clinical estimation of foetal weight, overestimated the actual birth weight by 1 to 2 gms / 100gms (table I). Estimation of foetal weigh by different method shows that the clinical method is the best method (table ii, & table iii). 38% of babies could be estimated within 100 gms of their actual birth weight (table ii) and 64% of foetuses could be estimated within 10% of their actual birth weight (table iii). This was better than that obtained by Tivari and Sood (1989) ⁷ which was 59% by the same method, where the correct was not defined as within 10% of actual birth weight. **Conclusion:** The sample comprised of 195 patients. The age group of the patients were from 18 to 38 yrs. There were 38 primigravidas, 56 second gravidas, and 4 grand multiparas. Height varied from 141 cm to 168 cm, weight was between 44 kg to 72 kgs. Of the 195 gravidas studied, the mean actual birth weight of their babies was 2781 grams. Which was lower than mean birth weight estimated by various clinical methods. All the clinical estimation of the birth weight overestimated the actual birth weight by 1 to 2 gm/100gms.

Keywords: Foetus, Fetal Weight, Ultrasound, Pelvimeter, Primigravidas, Gravidas

INTRODUCTION

A quick and easy method of estimation of foetal weight in utero is an obvious benefit to the clinician practicing modern obstetrics as the perinatal mortality and morbidity is affected not only by foetal age but also by the foetal weight. Foetal weight has also become increasingly important in conditions like management of preterm babies, small for gestation babies, decision for delivery in growth restricted babies, mode of delivery in breech presentation, induction of labour before term in complicated pregnancies, evaluation of foeto pelvic disproportion

Assuming a crude birth rate of 25/ 10,000, there are 23 million births in India every year of which approximately 17.5 million takes place in rural India, which are under domiciliary condition. For these cases we have to search for a clinical method for foetal weight estimation, which is easy, reliable, and can be applied at PHC level by the birth attendants.

An ideal method of foetal weight estimation should have the following advantages

1. Does not need ultrasound, which is not available in most of the PHCs
2. Does not need pelvimeter
3. Considers abdominal girth in calculating baby weight which is to an extent affected by the

uterine volume unlike in Johnsons or Mhaskars formula where it is not considered

4. Does not involve internal examination to determine station of the head which needs expertise that is not expected of a domiciliary birth attendant.

Thus, this study was conducted in order to estimate the foetal weight by a simple and easy method which can be taught to the medical and paramedical staff and the birth attendant under MCH teaching programme as to improve the perinatal morbidity and mortality.

Aim of study

This study was conducted over a period of one year on 195 patients who reported in third trimester of pregnancy and delivered within one week of examination. The Aim of the study was to formulate and evaluate a simple formula for clinical estimation of foetal weight which will be useful at PHC level by the birth attendants.

Null hypothesis is symphysiofundal height (SFH) multiplied by abdominal girth (AG) equals to birth weight (BWT) in grams

SFH x AG = BWT in grams

The actual birth weight was then compared with clinical estimation of birth weight by:

Original Research Article

RELATIONSHIP BETWEEN BASELINE HEART RATE AND POST SPINAL SUBARACHNOID BLOCK HYPOTENSION IN PATIENTS UNDERGOING CESAREAN SECTION – A RANDOMIZED DOUBLE BLIND STUDY

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Keywords:

HR - Heart Rate, BP - Blood Pressure,
 LSCS - Lower Segment Cesarean
 Section, SAB - Sub Arachnoid Block,
 T4-Thoracic Vertebrae, L3- Lumbar
 Vertebrae.

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Abstract

Background: To study the relationship between baseline heart rate and post spinal subarachnoid block hypotension in patients undergoing cesarean section. **Materials and Methods:** After obtaining approval from the ethics committee of Sri Ramachandra Medical College, 30 pregnant patients were selected for the study. The patients were divided into three groups based on the average baseline heart rate. Group I with baseline heart rate < 80 beats/min. Patients with baseline heart rate between 80 – 90 beats/min and > 90 beats/min were grouped into Group II and Group III respectively. **Result:** All the 30 patients completed the study. Among them 12 patients belonged to Group I (heart rate < 80beats/min). Group II (heart rate 80- 90beats/min) and Group III (heart rate > 90beats/min) had 10 patients and 8 patients respectively. Frequency of distribution of the number of patients is shown in the table (Table I). Group I had 40% of patients. Group II had 33.3% and Group III had 26.7% of patients. Fig 1 shows the distribution of patients in the three groups. **Conclusion:** From our study, we conclude that baseline heart rate can be used as a predictor of hypotension in cases of post spinal subarachnoid block in parturients. As the baseline heart rate increases, chances of hypotension also increase proportionately requiring more ephedrine to treat it. It does not depend upon the age, weight and height of the patients.

INTRODUCTION

Regional anaesthesia is the most commonly administered anesthesia technique in obstetrics. Among them spinal anesthesia is the commonest. The term 'Spinal Anesthesia' was coined by Leonard Coming in 1885. Cocaine was the first local anesthetic. It was first introduced into practice in eye surgeries by Carl Koller in 1884. It was used in surgery as a spinal anesthetic by August Bier in 1899.

Main advantages of spinal anesthesia for cesarean delivery are its simplicity, speed, reliability and minimal fetal exposure to depressant drugs². Mother remains awake during the surgery. Risk of aspiration is reduced. Non-behavioral assessment of neonates is better with spinal anesthesia than general anesthesia. A denser sacral nerve root blockade, more motor blockade and less shivering are the

other features of spinal anesthesia when compared to epidural anesthesia.

T4 level block is the target for spinal anesthesia in cesarean delivery. Lidocaine 60-75mg or bupivacaine 10-15mg can be introduced into subarachnoid space at L3-L4 or L2-L3 interspace. Fentanyl 10-20 micrograms may be added to augment the sensory blockade. Prolongation of the blockade may be brought into effect by epinephrine. Disadvantages include hypotension, intrapartum nausea and vomiting, possibility of post dural puncture headache and limited duration of action³. Maternal hypotension for more than 2 minutes may adversely affect the Apgar scores. Prehydration with lactated Ringer's solution, maintaining left uterine displacement during anesthesia and prophylactic administration of ephedrine can decrease the incidence of hypotension.

Conclusions: Despite interest in O&G, many junior doctors report minimal exposure to the speciality with few senior mentors and research opportunities. This highlights a clear need for formal mentorship programmes during foundation training in the UK. We hope to analyse data from our post mentorship questionnaire to gain feedback on the effectiveness of the pilot scheme and implement changes for future mentorship programmes

EP.0869 | Undergraduate medical student's views on feedback: a Malaysian medical school study

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Objective: The objective of this study was to explore the students' perception of their feedback experience and to identify any concerns.

Design: It is crucial that learners receive regular, constructive and effective feedback and are encouraged to act and reflect on it (General Medical Council, 2015). As feedback is a powerful tool in learning, researching on how it works in our context is important to enhance its effectiveness (Hattie & Timberley, 2007). Addressing students' views and improving strategies of providing feedback for enhancing their learning is crucial in ensuring acceptability, student satisfaction and feedback seeking behaviour. In coherence with phenomenological approach, data collection was done by in depth personal interview of stage 5 MBBS students in our institution. The discussions were audio recorded so that we could listen to it repeatedly for analysis. Additionally, note taking was done to understand the emotions of the participants as this will facilitate data analysis.

Method: A qualitative analysis was done to understand the student satisfaction by Coding and thematic analysis of the transcribed data from the interviews (Braun and Clarke's, 2006)

Results: A total of five students participated in the in depth interview and it revealed that the students unanimously felt that their experiences on feedbacks are valuable. Students' perception of the concept of feedback and the usefulness of feedback has improved over the years. Feedback varied with the module and the context. Students value timely in person feedback in a supportive atmosphere more than written comments and they shared suggestions for improvement.

Conclusion: The evidence from this study provides an increased understanding of our students' experience on the feedback. Results from this study is also of interest to the faculty developers and other medical schools if they have a similar context. The results can be used to address the highlighted issues and to improve the strategies in providing feedback as understanding learner perspectives and empowering the learners to seek and utilise the feedback are key steps to ensure the benefits of feedback. (Bowen, Marshall & Murdoch-Eaton, 2017).

EP.0870 | Vulval training in gynaecology: A trainees' perspective of the welsh lady-garden

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Singleton Hospital, Swansea, UK

Objectives: The management of vulval conditions remains an integral part of general gynaecology practice, yet the number of referrals to specialist Vulval clinics (from both primary and secondary care) appears to be increasing. The British Society for the Study of Vulval Disease has 101 registered vulval clinics throughout the UK, with only 3 clinics registered in Wales. The impetus for this study has come from local gynaecology trainees who have expressed a lack of confidence in management of vulval conditions. The aim of our study was to determine the Welsh trainee's perspective of vulval disorders and their confidence in managing these conditions.

Design: We developed a short, anonymous questionnaire using Microsoft Forms, which was delivered in an electronic format, using a survey web link -URL and QR code. We designed an eye-catching poster to capture attention and invite trainees to complete the survey.

Methods: We approached all Welsh O&G trainees to complete a short online survey, through an email invitation from the Trainees in Wales Obstetrics and Gynaecology Society (TWOGS) sent on two separate occasions; a direct link on the TWOGS website in the Latest News section and a WhatsApp invitation message sent directly to trainee representatives within each unit in Wales. There are 81 current trainees in Wales, with 3 trainees who are currently out of programme so were not included within the total.

Results: Of the 81 current trainees within Wales we received 41 responses (51%). Year of training was divided into three groups: with responses from 22% (9) ST1-2 trainees; 51% (21) ST3-5 trainees and 27% (11) ST6-7 trainees. Lack of confidence in managing vulval conditions was reported in 83% (34) of trainees. Additional vulval training was welcomed in 98% (40) trainees, with the format of teaching being preferred through regional speciality training days by 71% (29) trainees and virtual sessions by 19% (8) trainees. Identification of specific learning themes included improved management of benign inflammatory dermatoses, chronic vulval pain and better diagnosis of vulval cancer and pre-cancerous changes.

Conclusions: Our survey concluded that the majority of trainees lacked confidence in managing vulval conditions, with almost all trainees believing they would benefit from additional training. It has identified a potential need to improve vulval training for future gynaecologists in Wales, through a virtual and regional training format.

CASE REPORT

ASIAN JOURNAL OF MEDICAL SCIENCES

Diaphragmatic eventration with impending gangrenous organoaxial volvulus of the stomach: Role of timely intervention

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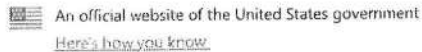
ABSTRACT

Eventration of diaphragm is a rare entity and often is characterized by a developmental abnormality of the diaphragm musculature. The acute presentation of organoaxial volvulus with impending gangrene of stomach is a life-threatening event and requires emergency diagnosis and surgical intervention. A 45-year-old man visited our hospital for evaluation of upper abdominal discomfort. He had a feeling of fullness and discomfort in the upper abdomen for 3 years. These attacks lasted about 2 hours and were not usually severe but eventually presented with severe abdominal pain. The patient was explored as general condition was deteriorating. On exploration, it was found that there was huge organoaxial stomach volvulus with impending stomach gangrene. Emergency exploration, gastropexy, and plication of diaphragm was done. Early diagnosis and prompt intervention may avoid consequent gastric volvulus and complications, improving the overall outcome and mortality.

Key words: Eventration; Organo axial volvulus; Gastropexy

INTRODUCTION

semi gangrenous stomach
intervention.

[Full Text Links](#)

Case Reports Cureus. 2022 Aug 6;14(8):e27738. doi: 10.7759/cureus.27738.
eCollection 2022 Aug.

Groove Pancreatitis: A Case Report and Review of a Hidden Type of Chronic Pancreatitis

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Abstract

Groove pancreatitis is a chronic type of segmental or focal pancreatitis seen to affect the groove, which is the region between the head of the pancreas, the duodenum, and the common bile duct. Despite its incidence remaining unknown, it accounts for 2.7% to 24.5% of pancreaticoduodenectomies performed for chronic pancreatitis. A diverse etiology has been implicated but the exact cause is yet to be identified. As it closely mimics pancreatic malignancy and remains mostly undiagnosed preoperatively, many patients often end up undergoing a pancreaticoduodenectomy. Awareness of this entity and early diagnosis will help us address this issue with more conservative measures than by resorting to a morbid procedure such as a pancreaticoduodenectomy. We report a case of a 50-year-old male, a chronic alcoholic, with a two-year history of upper abdominal pain, postprandial vomiting, and weight loss. An abdominal contrast-enhanced computed tomography (CECT) scan was suggestive of either a pancreatic malignancy or a possibility of groove pancreatitis. However, postoperative histopathological examination confirmed the lesser known groove pancreatitis. Here, we review the clinical, radiological, and pathological characteristics of groove pancreatitis, as its diagnosis and management still pose a challenge.

Keywords: chronic pancreatitis; duodenal obstruction; general gastroenterology; groove pancreatitis; hepato pancreato biliary surgery; pancreatic adenocarcinoma; pancreatic cancer; pancreatic surgery; surgical gastro; whipple's pancreaticoduodenectomy.

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Figures



Surgery

POST THYROIDECTOMY HYPOCALCEMIA: RETROSPECTIVE STUDY IN RURAL AREA OF IDUKKI

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ABSTRACT **Introduction:** Thyroidectomy is a frequent operation performed worldwide. The most common complication following thyroid surgery is hypocalcemia, caused by transient or persistent hypoparathyroidism. This study aimed to investigate the prevalence of hypocalcemia after thyroidectomy and to identify potential risk factors. **Methods:** All thyroidectomies performed at Department of General and Laparoscopic Surgery Alazhar Medical College Thodupuzha between 2018 and 2021 were retrospectively analyzed. Post-thyroidectomy hypocalcemia was evaluated in relation to risk factors such as age, sex, procedure type, and type of thyroid disease. Data were extracted from patient medical records. Patients with pre-operative hypocalcemia were excluded. **Results:** A retrospective study conducted on 2108 patients that underwent thyroid surgery in a single center (1669 women and 439 men). Postoperative early hypocalcemia was defined as serum calcium levels lower than 8.0 mg/dl measured 24 h after surgery. Following factors were evaluated in the study: sex, age, glandular hyperfunction, preoperative diagnosis, preoperative serum calcium levels, preoperative serum PTH levels, type of surgery performed (total thyroidectomy vs. lobectomy); number of parathyroid preserved in situ, postoperative serum calcium levels, changes in perioperative calcium levels (difference between preoperative values and postoperative calcium levels), presence of carcinoma in the surgical specimen, presence of thyroiditis based on histopathology reports. **Conclusion:** Thyroidectomy is a safe surgery with few complications when performed by a skilled surgeon. These complications result in longer hospital stays and higher costs. The most common post-thyroidectomy complication was hypocalcemia. Furthermore, patients who underwent total thyroidectomy were at the greatest risk of developing post-thyroidectomy hypocalcemia.

KEYWORDS : thyroidectomy, temporary hypocalcemia, risk factors, post-thyroidectomy complications, persistent hypocalcemia

INTRODUCTION

Thyroid disorders are among the most commonly occurring endocrine gland diseases worldwide. They can be treated either medically or surgically. Thyroidectomy (partial or total) is one of the most frequent operations performed globally [1,2]. Compression symptoms, suspected or known malignancy, presence of a solitary cold nodule in patients aged <20 years, cosmetic reasons, and the presence of a complex cyst or a cyst >4 cm in diameter are all indications for thyroidectomy [3]. Due to advancements in anesthesia, operative techniques and antisepsis, better surgical instruments, and understanding of thyroid anatomy and physiology, thyroid surgery is now considered a safe procedure [4,5]. However, complications following thyroid surgery may occur. These complications include hypocalcemia, recurrent laryngeal nerve injury, hematoma, seroma, stridor, loss of high-pitched voice, thoracic duct injury, wound infection, and tracheal injury [6]. Such complications occur less frequently when the surgery is performed by experienced surgeons (surgical volume of procedures performed per year) [3,7]. Hypocalcemia and recurrent laryngeal nerve injury are the most frequently encountered complications [8]. Post-thyroidectomy complications may be associated with some risk factors such as age, sex, increased gland size, type of thyroid disease, presence of fibrosis and inflammation, extent of thyroidectomy, and lymph node dissection [4]. According to a study conducted by Papaleontiou et al., advanced age, presence of comorbidities, and advanced disease are significant risk factors for post-thyroidectomy complications, especially in cases of thyroid cancer [9]. Our research group has previously published a paper on post-thyroidectomy complications in general [6]. The current study, however, focuses on the prevalence and risk factors associated with post-thyroidectomy hypocalcemia. Furthermore, we hope to share our experiences and compare our findings with those in the literature.

MATERIALS AND METHODS

Methods We analyzed data about a total number of 2108 patients that underwent thyroid surgery in the study period. There were 1669 women (79.2%) and 439 men (20.8%) with a mean age of 54.65 years (range, 15–87). Patients' demographics, operative details, histological

findings and postoperative events are reported in Table 1.

Table 1. Frequency Distribution Of Demographic And Clinical Characteristics Of The Subjects.

Properties	Number	Percent Cumulative	Percentage
1. AGE			
40 ≥	31	21.7	21.7
41–60	87	60.8	82.5
60 <	25	17.5	100
2. TYPE OF SURGERY			
Total Thyroidectomy	116	81.1	81.1
Subtotal Thyroidectomy	27	18.9	100
3. Hypocalcemia In The First 24 Hours After Surgery			
Positive	70	49	49
Negative	73	51	100
4. Hypocalcemia In The First 48 Hours After Surgery			
Positive	91	63.6	63.6
Negative	52	36.4	100
total	143	100	

RESULTS

Among the 182 patients who underwent thyroidectomies, 105 (57.7%) had benign lesions and 77 (42.3%) had malignant lesions. The ages ranged between 15 and 95 years (mean 39.87 ± 12.67 years), with most patients being female (n = 151, 83%). Total thyroidectomy was the most common surgery performed (n = 107, 58.8%), followed by right hemithyroidectomy (n = 39, 21.4%) and left hemithyroidectomy (n = 24, 13.2%). Further, completion thyroidectomy and subtotal thyroidectomy were performed for 2.7% and 3.8% of the patients, respectively. A total of 116 patients (63.7%) had temporary hypocalcemia and three developed persistent hypocalcemia (1.6%). The remaining patients (n = 63, 34.6%) did not develop hypocalcemia. Table 1 depicts the association between post-thyroidectomy hypocalcemia and various risk factors. In addition, there was no significant relationship between the occurrence of hypocalcemia and



General Surgery

THE KARYDAKIS FLAP VERSUS THE LIMBERG FLAP IN THE TREATMENT OF PILONIDAL SINUS DISEASE IN RURAL AREA OF THODUPUZHA

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Amritha Gopan	Intern.

ABSTRACT **Background:** The aim of this study was to analyze and compare the results of the modified Limberg flap (MLF) and modified Karydakias flap (MKF) techniques which were performed for the treatment of pilonidal sinus disease (PSD). **Methods:** The patients who were operated for PSD by the same surgeon between December 2021 and June 2023 in Department of General Surgery AlAzhar Medical College were retrospectively analyzed. 20 patients were enrolled in this interventional comparative clinical study and were divided into two equal groups. Group (1) were operated on via the the karydakias flap and group (2) via the limberg flap. **Results:** The mean operative time was shorter with the Karydakias group (41.7 ± 4.22 minutes) than with the Limberg group (51.5 ± 4.17 minutes). There was no significant difference between both groups regarding overall complication rate. The mean time off work was shorter with the Karydakias procedure (14.6 ± 2.46 days). The healing time was significantly shorter with the Karydakias group than with the Limberg group (18 ± 3.05 vs 21.6 ± 3.41 days, $P = 0.023$). The visual analogue score for the cosmetic satisfaction of patients in the Karydakias group was 7.8 ± 1.03 , whereas it was 4.2 ± 0.92 in the Limberg group with a p value (< 0.001). Only one patient (10%) from each group developed recurrence. **C** Karydakias Flap has shorter operation time than Modified Limberg flap, however both techniques have a similar complication and recurrence rate. In conclusion MLF and MKF procedures can be safely used as a surgical treatment of PSD.

KEYWORDS : Pilonidal sinus disease, Surgery, Modified Limberg flap, Modified Karydakias flap

INTRODUCTION

Pilonidal sinus disease (PSD), which mostly occurs in sacrococcygeal region is a common chronic health problem usually affecting young adults.1 Congenital and acquired factors are described previously but its etiology is still not clear. Several non-surgical and surgical modalities have been proposed for the treatment of PSD but there is still no optimal treatment modality. The main principle of the surgical treatment is completely excision of the sinus tract. Following the excision there are numerous surgical options such as open packing, marsupialization, primary closure and flap procedures.2-Different types of flap procedures have been described for the treatment of PSD and nowadays these techniques have been preferred due to the low complication and recurrence rates. Classical Limberg flap (CLF) is efficient method for PSD and mostly performed for the surgical management of the disease worldwide.5 The disadvantage of the CLF is the lower part of the suture line is located at the intergluteal sulcus and at the postoperative period skin maceration and recurrence can occur at this location. To minimize this complication, modified Limberg flap (MLF) was described to lateralize the suture line.5The Karydakias procedure was described in 1973 is an asymmetric flap technique used in the treatment of PSD.6 Bessa modified the technique and reported that local defenses against hair insertion could be maximized by decreasing or neutralizing the force factor as well by his modified Karydakias flap (MKF) technique.7 The aim of this present study was to analyze and compare the results of the MLF and MKF techniques which were performed by the same surgeon in a rural hospital.

METHODS

The patients who were operated for PSD by the same surgeon between December 2021 and June 2023 in Department of General Surgery AlAzhar Medical College were retrospectively analyzed.

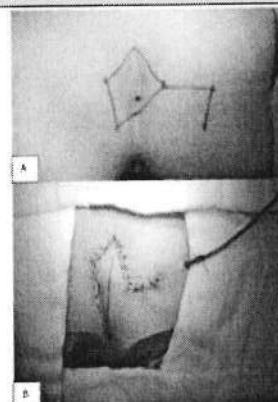
20 cases were included during the study period as a comprehensive sample.

Group (1): were operated on via the the Karydakias flap technique.

Group (2): were operated on via the Limberg flap technique.

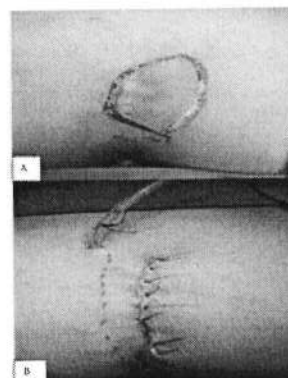
Surgical Procedure:

All operations were performed under spinal anesthesia. After positioning the patient in the Jack-knife. Methylene blue was injected through the sinus pits and all of the sinus tracts were resected totally till the sacral fascia. A suction drain was placed on the postsacral fascia in all operations.



Group 1: Modified Limberg Flap

Modified Limberg flap (MLF) was performed according to the technique reported by Menten et al.5 A wide rhomboid excision was made asymmetrically to place the inferior part of the flap 1 cm lateral to the midline. Fasciocutaneous Limberg flap which was elevated from the contralateral side of the asymmetric corner, was transposed medially to fill the rhomboid defect. A suction drain was placed on the postsacral fascia. Flap was fixed to the postsacral fascia with interrupted 0/0 vicryl sutures, subcutaneous tissue was approximated with 3/0 vicryl interrupted sutures, skin was closed with 3/0 polypropylene sutures (Figure 1).



Group 2: Modified Karydakias Flap

Laser Hemorrhoidoplasty Procedure Vs Stapler Surgical Hemorrhoidopexy: Treatment for Hemorrhoids of Third and Fourth Degree in Rural Areas of Thodupuzha

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Conflict of interest: Nil

Abstract:

Objective: According to the “vascular” theory, arterial overflow in the superior hemorrhoidal arteries would lead to dilatation of the hemorrhoidal venous plexus. Hemorrhoid laser procedure (LHP) is a new laser procedure for outpatient treatment of hemorrhoids in which hemorrhoidal arterial flow feeding the hemorrhoidal plexus is stopped by laser coagulation.

Aim: Our aim was to compare the hemorrhoid laser procedure with stapler haemorrhoidopexy procedure for outpatient treatment of symptomatic hemorrhoids.

Material and Method: A comparison trial between hemorrhoid laser procedure or stapler haemorrhoidopexy was made. This study was conducted at Department of General Surgery, Al Azhar Medical College Thodupuzha. Patients with symptomatic grade III or grade IV hemorrhoids with minimal or complete mucosal prolapse were eligible for the study: 40 patients treated with the laser hemorrhoidoplasty, and 40 patients—with open surgery hemorrhoidectomy. Operative time and postoperative pain with visual analog scale were evaluated.

Results: A total number of 40 patients (23 men and 17 women, mean age, 46 years) entered the trial. Significant differences between laser hemorrhoidoplasty and stapler procedure were observed in operative time and early postoperative pain. There was a statistically significant difference between the two groups regarding the early postoperative period: 1 week, 2 weeks, 3 weeks and 1 month after respective procedure ($p < 0.01$). The procedure time for LHP was 15.94 min vs. 26.76 min for stapler surgery ($p < 0.01$).

Conclusion: The laser hemorrhoidoplasty procedure was more effective than stapler surgical hemorrhoidectomy. Postoperative pain and duration time are only two indicators for this difference between these procedures.

Keywords: Laser Hemorrhoidoplasty, Stapler Surgery, Pain, Duration Time.

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Introduction

Hemorrhoidal disease is ranked first amongst diseases of the rectum and large intestine, and the estimated worldwide prevalence ranges from 2.9% to 27.9%, of which more than 4% are symptomatic [1,2]. Approximately, one third of these patients seek physicians for advice. Age distribution demonstrates a Gaussian distribution with a peak incidence between 45 and 65 years with subsequent decline after 65 years [3,4].

Men are more frequently affected than women [5]. The anorectal vascular cushions along with the internal anal sphincter are essential in the maintenance of continence by providing soft tissue support and keeping the anal canal closed tightly. Hemorrhoids are considered to be due to the

downward displacement suspensory (Treitz) muscle [6,7]. The treatment options for symptomatic hemorrhoids have varied over time. Measures have included conservative medical management, non-surgical treatments and various surgical techniques. The various non-surgical treatments include rubber band ligation (RBL), injection sclerotherapy, cryotherapy, infrared coagulation, laser therapy and diathermy coagulation; all of which may be performed as outpatient procedures without anaesthesia.

These nonsurgical methods are considered to be the primary option for grades one to three (grade I-III) hemorrhoids [8]. If conservative measures fail to control symptoms, patients may be referred to a



Surgery

POST THYROIDECTOMY HYPOCALCEMIA: RETROSPECTIVE STUDY IN RURAL AREA OF IDUKKI

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ABSTRACT **Introduction:** Thyroidectomy is a frequent operation performed worldwide. The most common complication following thyroid surgery is hypocalcemia, caused by transient or persistent hypoparathyroidism. This study aimed to investigate the prevalence of hypocalcemia after thyroidectomy and to identify potential risk factors. **Methods:** All thyroidectomies performed at Department of General and Laparoscopic Surgery AlAzhar Medical College Thodupuzha between 2018 and 2021 were retrospectively analyzed. Post-thyroidectomy hypocalcemia was evaluated in relation to risk factors such as age, sex, procedure type, and type of thyroid disease. Data were extracted from patient medical records. Patients with pre-operative hypocalcemia were excluded. **Results:** A retrospective study conducted on 2108 patients that underwent thyroid surgery in a single center (1669 women and 439 men). Postoperative early hypocalcemia was defined as serum calcium levels lower than 8.0 mg/dl measured 24 h after surgery. Following factors were evaluated in the study: sex, age, glandular hyperfunction, preoperative diagnosis, preoperative serum calcium levels, preoperative serum PTH levels, type of surgery performed (total thyroidectomy vs. lobectomy); number of parathyroid preserved in situ, postoperative serum calcium levels, changes in perioperative calcium levels (difference between preoperative values and postoperative calcium levels), presence of carcinoma in the surgical specimen, presence of thyroiditis based on histopathology reports. **Conclusion:** Thyroidectomy is a safe surgery with few complications when performed by a skilled surgeon. These complications result in longer hospital stays and higher costs. The most common post-thyroidectomy complication was hypocalcemia. Furthermore, patients who underwent total thyroidectomy were at the greatest risk of developing post-thyroidectomy hypocalcemia.

KEYWORDS : thyroidectomy, temporary hypocalcemia, risk factors, post-thyroidectomy complications, persistent hypocalcemia

INTRODUCTION

Thyroid disorders are among the most commonly occurring endocrine gland diseases worldwide. They can be treated either medically or surgically. Thyroidectomy (partial or total) is one of the most frequent operations performed globally [1,2]. Compression symptoms, suspected or known malignancy, presence of a solitary cold nodule in patients aged <20 years, cosmetic reasons, and the presence of a complex cyst or a cyst >4 cm in diameter are all indications for thyroidectomy [3]. Due to advancements in anesthesia, operative techniques and antisepsis, better surgical instruments, and understanding of thyroid anatomy and physiology, thyroid surgery is now considered a safe procedure [4,5]. However, complications following thyroid surgery may occur. These complications include hypocalcemia, recurrent laryngeal nerve injury, hematoma, seroma, stridor, loss of high-pitched voice, thoracic duct injury, wound infection, and tracheal injury [6]. Such complications occur less frequently when the surgery is performed by experienced surgeons (surgical volume of procedures performed per year) [3,7]. Hypocalcemia and recurrent laryngeal nerve injury are the most frequently encountered complications [8]. Post-thyroidectomy complications may be associated with some risk factors such as age, sex, increased gland size, type of thyroid disease, presence of fibrosis and inflammation, extent of thyroidectomy, and lymph node dissection [4]. According to a study conducted by Papaleontiou et al., advanced age, presence of comorbidities, and advanced disease are significant risk factors for post-thyroidectomy complications, especially in cases of thyroid cancer [9]. Our research group has previously published a paper on post-thyroidectomy complications in general [6]. The current study, however, focuses on the prevalence and risk factors associated with post-thyroidectomy hypocalcemia. Furthermore, we hope to share our experiences and compare our findings with those in the literature.

MATERIALS AND METHODS

Methods We analyzed data about a total number of 2108 patients that underwent thyroid surgery in the study period. There were 1669 women (79.2%) and 439 men (20.8%) with a mean age of 54.65 years (range, 15–87). Patients' demographics, operative details, histological

findings and postoperative events are reported in Table 1.

Table 1. Frequency Distribution Of Demographic And Clinical Characteristics Of The Subjects.

Properties	Number	Percent Cumulative	Percentage
1. AGE			
40 ≥	31	21.7	21.7
41–60	87	60.8	82.5
60 <	25	17.5	100
2. TYPE OF SURGERY			
Total Thyroidectomy	116	81.1	81.1
Subtotal Thyroidectomy	27	18.9	100
3. Hypocalcemia In The First 24 Hours After Surgery			
Positive	70	49	49
Negative	73	51	100
4. Hypocalcemia In The First 48 Hours After Surgery			
Positive	91	63.6	63.6
Negative	52	36.4	100
total	143	100	

RESULTS

Among the 182 patients who underwent thyroidectomies, 105 (57.7%) had benign lesions and 77 (42.3%) had malignant lesions. The ages ranged between 15 and 95 years (mean 39.87 ± 12.67 years), with most patients being female ($n = 151$, 83%). Total thyroidectomy was the most common surgery performed ($n = 107$, 58.8%), followed by right hemithyroidectomy ($n = 39$, 21.4%) and left hemithyroidectomy ($n = 24$, 13.2%). Further, completion thyroidectomy and subtotal thyroidectomy were performed for 2.7% and 3.8% of the patients, respectively. A total of 116 patients (63.7%) had temporary hypocalcemia and three developed persistent hypocalcemia (1.6%). The remaining patients ($n = 63$, 34.6%) did not develop hypocalcemia. Table 1 depicts the association between post-thyroidectomy hypocalcemia and various risk factors. In addition, there was no significant relationship between the occurrence of hypocalcemia and

Comparative Study of the Accuracy of Preoperative Investigations Such as USG and FNAC with Postoperative Histopathological Findings in Diagnosing the Spectrum of Thyroid Disorders at a Tertiary Care Centre in Idukki

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Conflict of interest: Nil

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Materials & Methods: The present study was a prospective observational study. This Study was conducted from 1 year at Department General Surgery, Al Azhar Medical College & Super Speciality Hospital, Total 107 patients were included in this study.

Result: In our study of 107 patients, the majority (74 patients, 69.2%) had no comorbidities. Among those with comorbidities, diabetes mellitus (DM) was the most common, seen in 8 patients (7.5%), followed by hypertension (HTN) in 7 patients (6.5%). Some patients had combinations of conditions such as DM with HTN, COPD, or DLP. The statistical analysis showed a highly significant ($P < 0.00001$). In our study of 107 patients, the majority were euthyroid (74 patients, 69.2%), meaning they had normal thyroid function. Hyperthyroidism was found in 21 patients (19.6%), hypothyroidism in 12 patients (11.2%). The P value was < 0.00001 , indicating a statistically significant.

Conclusion: We concluded that the study carried out at a tertiary care facility in Idukki revealed a predominance of benign cytology (Bethesda II) and euthyroid status among patients. A considerable number were diagnosed with multinodular goitre, and some also had coexisting hypertension and diabetes mellitus.

Keywords: Sonography, FNAC, Euthyroid, Thyroid and Bethesda system.

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Keywords: Sonography, FNAC, Euthyroid, Thyroid and Bethesda system.

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OPEN ACCESS

Key Words

Acute appendicitis, pelvic abscess, risk factors, prospective study, tertiary care

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Prospective Study of Evaluation of Risk Factors for Pelvic Abscess in Case of Acute Appendicitis in a Tertiary Care Centre Victoria Hospital

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ABSTRACT

Acute appendicitis and its complications are leading causes of acute abdomen and indications for emergency surgical intervention in clinical practice. In clinical terms, acute appendicitis can be described as simple or complicated. Complicated appendicitis includes appendix mass, appendix abscess and perforated appendicitis. This study aims to evaluate the risk factors contributing to the development of pelvic abscess in patients diagnosed with acute appendicitis at Victoria Hospital. A prospective observational study was conducted over six months, involving patients diagnosed with acute appendicitis. Data were collected on demographic information, clinical presentation, laboratory findings and imaging results. Factors such as age, gender, duration of symptoms and preoperative management were analyzed. Pelvic abscess formation was confirmed via ultrasound or CT imaging. In without RIF/pelvic collection on CT Group, 23 (53.5%) patients had Migration/relocation of pain. In with RIF/pelvic collection on CT Group, 21 (77.8%) patients had Migration/relocation of pain. Association of Migration/relocation of pain with RIF/pelvic collection on CT Group was statistically significant ($p = 0.0406$). The study highlights key risk factors associated with pelvic abscess in acute appendicitis, emphasizing the importance of timely diagnosis and intervention. Recognizing these factors may help clinicians in managing patients effectively and reducing the incidence of complications.

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Redefining the upper age limit of decompressive craniectomy surgery for malignant middle cerebral artery in

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ABSTRACT

Background: Decompressive craniectomy is an effective treatment for malignant middle cerebral artery territory infarct. But the age limit for surgery is not well defined. The time window of surgery is less than 96 hours.

Methods: This retrospective study of 60 patients of MCA territory infarct who underwent surgery is selected in this study and using modified Rankin score.

Results: In this study 36 patients were less than 60 years and were above 60 years. 38 patients were left sided MCA infarct. Out of 60 patients, 22 patients were operated within 48 hours, 38 were operated between 48 to 96 hours. 49% patients operated within 48 hours had mRS 0-3 at 3 months follow up while only 37% patients operated after 48 hours had mRS 0-3.

Conclusions: Decompressive craniectomy in malignant MCA infarction can reduce mortality. Favorable outcome is questionable. Hence the surgical decision should depend on social and economic factors.

Keywords: Decompressive craniectomy, Modified Rankin score, Malignant MCA infarction

Original Research Article

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Chronic subdural hematoma pressure measurement with clinical characteristics and postoperative neur

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ABSTRACT

Background: The pressure of the chronic SDH (subdural haematoma), the age of the patient and midline shift were considered prognostic dependent factors. The study aimed at the correlation of chronic SDH in the outcome of patients.

Methods: A correlation between subdural hematoma pressure and preoperative and postoperative parameters such as hematoma volume, midline shift, age, GCS score and postoperative modified Rankin scale complications were assessed and analyzed.

Results: According to the pressure of chronic SDH, 56 patients were grouped into 4 groups. In the low pressure group (<15 cm/h₂O) the mean age was 85 and postoperative ranking score was 3 and the high pressure group (>25 cm/h₂O) the mortality was 14% and no recurrence.

Conclusions: The pressure of the chronic SDH has significant prognostic value in chronic SDH.

Keywords: Chronic SDH, Pressure gradient, Prognostic factors

INTRODUCTION

Chronic subdural hematoma is one of the commonest

clinical characteristics of subdural hematoma. The outcome and various prognostic factors are not clear. This will help in prognosis.

Original Research Article

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Functional outcome assessment for surgical decompression of cervical spondylotic myelopathy

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ABSTRACT

Background: Cervical spondylotic myelopathy (CSM) is one of the most common dysfunctions of spinal cord occurs due to degenerative changes in cervical spine disc and facet joints. It is a form of progressive spine disease including herniated disc and spinal cord stenosis which manifests as changes in gait, skilled hand movements, muscle strength, bladder dysfunction etc. Recent studies and trials have established that surgical decompression of cervical spinal is a cost-effective treatment modality which provide satisfactory functional recovery. This study aimed at the functional outcome of surgical decompression of CSM.

Methods: The prospective study of 100 cases of cervical myelopathy for which decompressive surgery was done from August 2020 to August 2021. Results were analysed according to Nuricks and modified Japanese orthopedic association scoring system (MJOA).

Results: Seventy one males and 29 females were included in this study with average age was 53 and average hospital stay was 3.55 days. Average pre-op Nurick score was 1.93, while score after 6 months and 1 year were 1.44 and 1.15 respectively. Average pre-op MJOA score was 13.63, while score after 6 months and 1 year were 14.58 and 15.74 respectively.

Conclusions: The functional results of decompressive surgeries for cervical myelopathy are satisfactory. Both anterior and posterior approaches are recommended for multiple cervical myelopathy with comparable outcomes. DM and age was observed as the independent predictor for functional outcome, while, gender and level of disease got less significant predictive value.

Keywords: Cervical spondylotic myelopathy, Decompression surgeries, ACDF, Corpectomy

INTRODUCTION

Cervical spondylotic myelopathy (CSM) is the most common cause of myelopathy of the cervical spine which accounts for degenerative pathology with narrowing of cervical spinal canal. As CSM is having an indolent course with more detrimental progressive way and characterised by a series of complex long tract signs and symptoms. Although literatures regarding the changes in myelopathic signs following decompression surgeries are very few.^{1,2}

The incidence of CSM is expected to rise in ageing population and it is estimated to effect upon 5% of population older than 40 years. Although the CSM is a common entity, the diagnosis and proper treatment are usually delayed. The causes are multi factorial.

The etiology of CSM as described in literatures is the age-related alterations to spinal cord including degeneration of facet joints, inter vertebral disc or vertebral bodies, hypertrophy of ligamentum flavum and ossification of longitudinal ligaments.³

Weight Loss Surgery Induced Telogen Effluvium (We Loss SITE) Management-our Experience

Jacob Antony Chakiath¹, Ravi Kumar Chittoria^{2,*}

Abstract

Telogen effluvium, a condition of non-inflammatory, no scarring, diffuse hair loss after weight loss surgery. A through history taking and Videodermoscopy is an effective tool for evaluation of a patient with weight loss surgery induced telogen effluvium (We Loss SITE). Cyclical Nutritional Therapy, Low level laser therapy, Autologous Platelet Rich Plasma is an effective treatment for telogen effluvium. This case report shares our experience in management of a patient weight loss surgery induced telogen effluvium. An OPD visit was made by a 23-year-old male patient from Calicut, Kerala, who works as a driver and has had hair loss for two years following bariatric surgery. Since childhood, the patient has been obese. When she became pregnant, his mother had uncontrolled diabetes. At nine months old, she had a caesarean section because of macrosomia. When the patient was delivered, their weight was 6 kg. With age, he began to put on weight gradually. It might be challenging to differentiate between female pattern hair loss and telogen effluvium, a non-inflammatory, widespread hair loss disorder. The entire scalp usually experiences hair loss, albeit on occasion the temporal regions show the most signs of it. The hair-pull test is positive, with increased shedding of telogen hairs when telogen effluvium is active. In our patient with weight loss surgery induced telogen effluvium, videodermoscopy was helpful for diagnosis autologous platelet rich plasma therapy, low intensity laser therapy, and cyclical nutritional therapy all contributed to the restoration of better hair.

Keywords: Weight loss surgery, bariatric, videodermoscopy, Low-level laser, cyclical nutritional therapy, platelet rich plasma, telogen effluvium

INTRODUCTION

A non-scarring form of alopecia called telogen effluvium causes diffuse scalp hair loss about three months after a trigger factor. Surgically induced telogen effluvium (SITE) is a postoperative complication. There have also been sporadic descriptions of weight loss- induced telogen effluvium (We Loss SITE), which causes excessive hair loss as a result of anagen follicles connected to the procedure entering the telogen phase too soon [1, 2].

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MATERIALS AND METHODS

In a South Indian tertiary care hospital, this study is being conducted. An OPD visit was made by a 23-year-old male patient from Calicut, Kerala, who works as a driver and has had hair loss for two years following bariatric surgery. Since childhood, the patient has been obese. When she became pregnant, his mother had uncontrolled diabetes. At nine months old, she had a caesarean section because of macrosomia. When the patient was delivered, their weight was 6 kg.

Fleur-de-lis Abdominoplasty after Bariatric Surgery - Our Experience

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ABSTRACT

As a result of the obesity pandemic, more and more individuals are seeking bariatric surgery for weight loss and resolution of conditions related to obesity. As the numbers have risen, the number of post bariatric massive weight loss patients presenting to the plastic surgeon for body contouring to address excess skin laxity is increasing. In this article, we are sharing our experience with fleur de lis abdominoplasty and inclusion of regenerative therapy to decrease the anticipated complications (seroma, hematoma, infection, and necrosis) of Fleur-de-lis abdominoplasty and to improve the wound healing. To our knowledge, this is the first study to include regenerative therapy with fleur de lis abdominoplasty.

KEYWORDS

Abdominoplasty; Fleur-de-lis; Bariatric surgery; Regenerative; Body contouring; Obesity

INTRODUCTION

According to recent statistics, 650 million persons worldwide are fat and nearly 1.9 billion are overweight. Obesity-related deaths have been estimated to reach 2.8 million in number. The risk of obesity and its negative effects (such as diabetes, ischemic heart disease, etc.) is significant in developing nations because of the intake of energy-dense food (i.e., poor eating habits), sedentary lifestyles, a lack of health care services, and budgetary constraints. More than 135 million people in India suffer from obesity. The prevalence of obesity varies by age, gender, location (geographic and socioeconomic), etc. in India. The prevalence rate of obesity and central obesity varies from 11.8% to 31.3% and 16.9% to 36.3%, respectively, according to the 2015 ICMR-INDIAB research. One of the main risk factors for cardiovascular disease (CVDs) in India is abdominal obesity. Numerous studies have revealed that women were much more likely than men to be obese. One of the biggest medical and financial expenses for the government is obesity [1].

A growing number of people are turning to bariatric surgery to lose weight and treat obesity-related diseases as a result of the obesity pandemic. The number of patients seeking body contouring to treat extra skin laxity following bariatric significant weight reduction has been rising as the numbers have gone up [2]. Massive weight loss is described as loss of 50% or more of extra weight, which causes the abdomen skin to become slack and occasionally severely redundant. Rashes, soreness, physical restriction, back strain, and cosmetic deformities can all result from this. In 1985, Lee Dellon described the fleur de

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Original Research Article

Quality of life and psychological well-being of the working population during the lockdown and work-from-home of the COVID-19 pandemic

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ABSTRACT

Background: The COVID-19 pandemic has shocked the world with lockdown and working from home has brought an expeditious change in the daily life of people. The study aimed to assess the quality of life of working population during the lockdown and work-from-home of COVID-19 outbreak in Kerala.

Methods: A cross-sectional study was done during June to July 2021 among 216 subjects who had work-from-home during the previous six months. A structured and pre-validated questionnaire short form quality of life (SF-36) was broadcasted through online platforms using Google Forms and then analysed using the SPSS V.21.

Results: The mean age of the study group was 37.8 ± 10.1 years. Most of the subjects were in the service sector 57 (26.4%) and IT sector 48 (22.2%). Bodily pain had the highest domain score (60.57) compared to other scores, the mean physical functioning score (58.73 ± 27.9), role limitation due to physical problems (55.19 ± 43.1) had lower scores. All domain scores were found to decrease with increasing age of 60. There was statistically significance between the mean values of social functioning and age.



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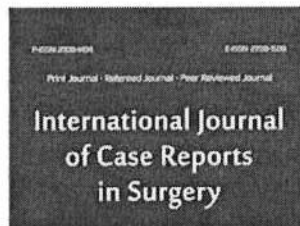
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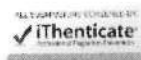
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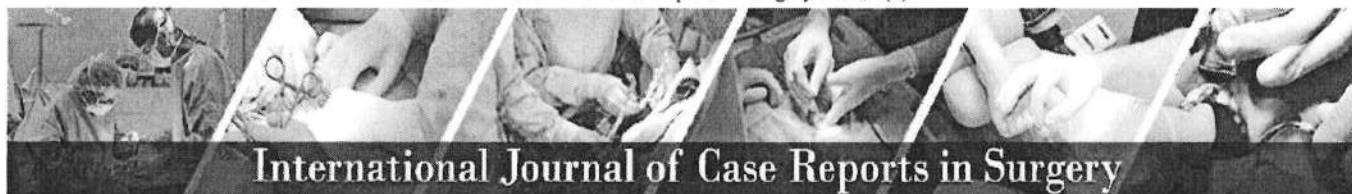
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Right hypochondrial dilemma: A case report of omental infarction in elderly

Dr. Deepu T, Dr. Joshua CC, Dr. Saravanan Thangavelu, Dr. Animesh M Nair, Dr. Karthik P and Dr. Liya K Babu

Abstract

Omental infarction is a rare cause of acute or subacute abdominal pain that is reported in surgical and radiological literature. A 65-year-old man presented with complaints of pain on the right side of upper abdomen for 3 days. Tenderness elicited over the right hypochondrium and a positive Murphy's sign. Contrast enhanced computed tomography (CECT) scan showed a focal dense fatty lesion with hyperdense peripheral halo and surrounding mesenteric fat stranding adjacent to transverse colon in the right upper quadrant. He underwent diagnostic laparoscopy. A part of the greater omentum was found adherent to the anterior abdominal wall over the left lobe of the liver which was infarcted and was removed. Omental infarction is a rare entity and it may be considered as a differential diagnosis in acute abdominal pain once all the other common causes have been ruled out.

Keywords: Omental infarction, elderly, right hypochondrial pain

Introduction

Omental infarction is an acute vascular disorder which compromises the blood supply to the tissues of the greater omentum [1]. It is a rare cause of acute or subacute abdominal pain with a reported incidence of approximately 0.3% and is found in 0.1% of laparotomies for acute abdominal pain [2]. This is due to large number of vascular collaterals to the greater omentum from the epiploic arteries. Nowadays, it is increasingly being reported in general surgery and radiological literatures, on account of advancing imaging techniques and improved recognition of its radiographic presentation [3]. Omental infarction is more common in males than in females (2:1) and is more common within the age group of 40-50 years [1, 3].

Right sided omentum is most commonly involved [4]. This could potentially be due to the greater length of the right omentum, increased mobility, altered vasculature and fatty accumulation in omentum impeding the distal right epiploic artery [5].

In pediatric age group, though the incidence is lesser, it can be misdiagnosed as acute appendicitis, typically presenting with sudden onset of right-side abdominal pain and tenderness and hence unable to distinguish clinically. Since CT is being used more frequently in the investigation of children with acute abdominal pain, knowledge of the characteristic imaging feature is important for making proper diagnosis and differentiating it from acute appendicitis [5, 6].

In the postpartum period, omental infarction can occur as a result of hematological changes in pregnancy (hypercoagulable state) and the distortion of omentum by gravid uterus leading to increased risk of thromboembolic events. Another cause may be the possible changes during the return of the mother's body to pre-pregnant physiological condition which may provoke infection [7].

Here, we describe a case of omental infarction mimicking acute cholecystitis. The incidence, pathogenesis and management of this rare condition is highlighted in this article.

Case Report

A 65-year-old man with BMI 30, presented with complaints of pain on the right side of upper abdomen for 3 days. The pain was sudden in onset, severe, continuous and confined to the right side of upper abdomen. It aggravated on leaning forward and laying down. He also complained of constipation for 2 days and decreased appetite. He was on regular medications for systemic hypertension (amlodipine and losartan). He had a past history of a road traffic accident for which he had undergone craniotomy five years back. He was also diagnosed to have hemorrhoids. He was not an alcoholic or a smoker.

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Key Words

Male circumcision, traditional method, stapler technique

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A Study on Effectiveness of Stapler Method of Circumcision over Conventional Circumcision in Adult Males: A Prospective Study

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ABSTRACT

The most common surgery done by a urologist is male circumcision. In this present study, we have investigated the effectiveness and safety of a novel surgical method for male circumcision by using circular stapler. Ten consecutive adult male patients were split into two groups at random: five had stapler circumcisions and five had traditional circumcisions. The duration of surgery, level of pain perception, amount of blood lost, length of recovery, cost of the procedure and postoperative complications were contrasted between the two groups. In comparison to the traditional group, the stapler group's operating time (min) was considerably less (14.8 ± 0.84 vs. 28.6 ± 3.13 min), with a statistically significant p-value of 0.008. Similarly, intraoperative bleeding was seen in only 20% of patients from stapler group while all the patients (100%) from conventional group, this was statistically significant with a p-value of 0.024. The stapler group experienced significantly fewer pain scores after surgery (3.8 ± 1.5 vs 12.2 ± 3.3 , respectively: p value-0.008) than the traditional group. Furthermore, stapler surgery is cosmetically better than in the traditional group (100 vs. 60%, respectively: p value-0.222). We have concluded that stapler circumcision is a quick and secure surgical method for male, still further studies with larger sample size are required.



Comparison of MRI diffusion weighted imaging and apparent diffusion coefficient(adc) of spleen and liver in cirrhotic patients with patients having no cirrhosis.

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Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background & objectives: Cirrhosis is a state of hyper dynamic circulation and in view of portal hypertension, there is a splanchnic hyperaemia. This splanchnic hyperaemia is assessed by taking spleen as the representative organ of the splanchnic circulation. Aim of our study is to find the difference in ADC (Apparent Diffusion Coefficient) mapping of spleen and liver in cirrhotic and normal patients. Also to find the correlation of ADC (Apparent Diffusion Coefficient) value of the spleen and liver to Child Pugh class and severity of portal hypertension in cirrhotic patients.

Materials & methods: Adult patients with chronic liver disease who underwent abdominal MRI were taken as cases for study. DWI and ADC values of liver and spleen were calculated. The following causes of liver cirrhosis were recorded like alcoholism, chronic hepatitis C, chronic hepatitis B, Non-alcoholic fatty liver disease, autoimmune and cryptogenic/idiopathic. Patients were ascertained Child– Pugh score based on their clinical parameters. Following signs of portal hypertension were recorded: splenomegaly, ascites, portocaval anastomoses. Adult patients without any history of liver disease and having normal liver function test and



Dr. Sruthy Prakash.

The lung severity score by CT scan and its relation with vaccination status in Covid 19 patients.

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Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background & objectives: In March 2020, WHO proclaimed COVID 19 to be a pandemic (1) which manifests with CT chest imaging abnormalities in the form of rapid evolution from focal unilateral to diffuse bilateral ground-glass opacities that progressed to or co-existed with consolidations within 1–3 weeks.

Covid 19 vaccination started in India from 16th January 2021. The two vaccines developed in INDIA till now are COVISHIELD and COVAXIN (2). Vaccines work on the principles of inducing immunity by introduction of inactivated virus and spike proteins. Although vaccination does not completely prevent infection or

reinfection, it helps lessen the severity of the symptoms and infectivity and increase patient survival.

The study is done to determine the extent of pulmonary involvement in RT-PCR / Antigen detection rapid diagnostic tests confirmed cases of Covid 19 patients by HRCT and its correlation with vaccination status. The study aims to determine the extent of pulmonary involvement in confirmed cases of COVID-19 patients by HRCT and its correlation with vaccination status and to determine whether there is reduced pulmonary involvement in vaccinated patients as compared to unvaccinated patients.



A COMPARATIVE STUDY ON IODIXANOL VERSUS IOHEXOL IN INTRAVENOUS PYELOGRAPHY STUDIES IN A TERTIARY CARE HOSPITAL- A RANDOMIZED CONTROL STUDY

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ABSTRACT:

Background: Contrast-induced nephropathy, a complication associated with intravenous pyelography (IVP), is a recognized concern. However, the relative nephrotoxic potential of the iso-osmolar non-iodinated contrast medium (iodixanol) versus the low-osmolar contrast medium (iohexol) remains unclear. This single-center, Randomized Control studies involved 58 patients undergoing IVP, who were randomly assigned to receive either iodixanol or iohexol.

Materials: 58 patients with high risk for contrast-induced nephropathy, consisted of 25 (43.10%) patients with renal insufficiency and 16 (27.58%) with diabetes mellitus. The study assessed the nephrotoxic effects (contrast nephropathy) and the profiles of complement and cytokines between the two groups. The average contrast medium volume administered during each IVP procedure was 0.8 mL/kg.

Results: The overall incidence of contrast nephropathy was 04%, with one case in each group. No significant differences were observed in the rates of contrast nephropathy or allergic reactions between the iodixanol and iohexol groups. Additionally, there was no notable difference in cytokine 89% profiles. The overall incidence of allergic reactions was 17.24%. Early allergic reactions occurred in 03/29 (10.34%) of the Iohexol group patients and none in the Iodixanol group of patients. Late allergic reactions occurred in 03/29 (10.34%) of the Iohexol group and 02/29 (06.89%) of the Iodixanol group of patients ($p = 0.001$). One patient developed a severe skin rash due to a late adverse reaction following iodixanol administration. No fatalities were reported. Both iodixanol and iohexol are considered safe for routine IVP examinations, exhibiting a low nephrotoxicity profile, particularly in elderly or high-risk patients.

Conclusions: In conclusion, iodixanol and iohexol contrast media for routine IVP examinations are safe and have a low nephrotoxicity profile, particularly in elderly and high-risk patients. Late allergic reactions may be the most common adverse effect following the infusion of nonionic contrast media.

KEY WORDS: contrast, ivp, Iohexol, Iodixanol and Allergy

Radiology-Guided Selection and Surgical Outcomes in ACR TI-RADS 3 Thyroid Nodules: Comparing Total Thyroidectomy under General Anesthesia versus Cervical Block

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Abstract

Background: Thyroid nodules classified as ACR TI-RADS 3 are considered mildly suspicious but often require surgical excision when symptomatic or enlarging. While general anesthesia (GA) is the conventional choice for thyroidectomy, cervical block anesthesia (CBA) has gained attention for its safety, reduced postoperative morbidity, and faster recovery. Comparative data on outcomes in this specific patient subgroup remain limited. **Material and Methods:** A total of 120 patients (mean age: 44.7 ± 11.2 years; 32 males, 88 females) with TI-RADS 3 nodules undergoing total thyroidectomy were enrolled. Patients were randomized into two groups: Group A ($n=60$) underwent thyroidectomy under GA, and Group B ($n=60$) under CBA. Parameters assessed included operative duration, intraoperative blood loss, postoperative pain using a visual analogue scale (VAS), recovery time, hospital stay, and complications. Statistical analysis was performed using the chi-square test and independent t-test, with $p < 0.05$ considered significant. The mean operative time (98.4 ± 15.2 min vs. 95.1 ± 13.9 min, $p = 0.27$) and intraoperative blood loss (82.5 ± 20.6 mL vs. 79.3 ± 19.8 mL, $p = 0.39$) were comparable between Group A and Group B. However, Group B demonstrated significantly lower postoperative VAS scores at 6 hours (3.8 ± 1.1 vs. 5.2 ± 1.3 , $p < 0.001$), shorter recovery time (9.2 ± 2.8 hours vs. 14.6 ± 3.2 hours, $p < 0.001$), and reduced hospital stay (2.4 ± 0.9 days vs. 3.6 ± 1.2 days, $p < 0.001$). Complication rates, including transient hypocalcemia and recurrent laryngeal nerve palsy, were similar between groups. Patient satisfaction was significantly higher in the CBA group ($p < 0.01$). **Conclusion:** Radiology-guided selection of ACR TI-RADS 3 nodules provides accurate indications for surgery. For total thyroidectomy in these patients, cervical block anesthesia is as safe as general anesthesia and offers superior outcomes regarding postoperative pain, recovery speed, hospital stay, and patient satisfaction. CBA represents a viable and often preferable alternative to GA in appropriately selected patients.

Keywords: ACR TI-RADS 3, thyroid nodule, total thyroidectomy, general anesthesia, cervical block, surgical outcomes.

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INTRODUCTION

Thyroid nodules are a common clinical entity, detected in up to 65% of the general population through high-resolution ultrasound.^[1] The vast majority of these nodules are benign; however, a systematic approach is necessary to identify the 7-15% that harbor malignancy.^[2] The American College of Radiology (ACR) Thyroid Imaging, Reporting and Data System (TI-RADS) has emerged as a standardized, ultrasound-based risk stratification system that categorizes nodules from benign (TI-RADS 1) to highly suspicious (TI-RADS 5).^[3] ACR TI-RADS 3 nodules, characterized as "mildly suspicious," have a low risk of malignancy ($<5\%$) and are typically round, isoechoic or hyperechoic, and lack highly suspicious features.^[4]

While surveillance is often the initial management strategy for TI-RADS 3 nodules, surgical intervention becomes necessary for various reasons, including compressive symptoms (dysphagia, dyspnea), cosmetic concerns, significant interval growth, or patient preference.^[5] In such

cases, total thyroidectomy is frequently performed, especially in the context of multinodular goiter or contralateral nodules, to provide a definitive therapeutic and diagnostic solution and avoid the need for reoperation.^[6]

The standard anesthetic technique for thyroid surgery has historically been general anesthesia (GA) with endotracheal intubation. This approach provides complete control of the airway, muscle relaxation, and immobility, ensuring optimal surgical conditions.^[7] However, GA is associated with several

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A COMPARATIVE STUDY ON IODIXANOL VERSUS IOHEXOL IN INTRAVENOUS PYELOGRAPHY STUDIES IN A TERTIARY CARE HOSPITAL- A RANDOMIZED CONTROL STUDY

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ABSTRACT:

Background: Contrast-induced nephropathy, a complication associated with intravenous pyelography (IVP), is a recognized concern. However, the relative nephrotoxic potential of the iso-osmolar non-iodinated contrast medium (iodixanol) versus the low-osmolar contrast medium (iohexol) remains unclear. This single-center, Randomized Control studies involved 58 patients undergoing IVP, who were randomly assigned to receive either iodixanol or iohexol.

Materials: 58 patients with high risk for contrast-induced nephropathy, consisted of 25 (43.10%) patients with renal insufficiency and 16 (27.58%) with diabetes mellitus. The study assessed the nephrotoxic effects (contrast nephropathy) and the profiles of complement and cytokines between the two groups. The average contrast medium volume administered during each IVP procedure was 0.8 mL/kg.

Results: The overall incidence of contrast nephropathy was 04%, with one case in each group. No significant differences were observed in the rates of contrast nephropathy or allergic reactions between the iodixanol and iohexol groups. Additionally, there was no notable difference in cytokine 89% profiles. The overall incidence of allergic reactions was 17.24%. Early allergic reactions occurred in 03/29 (10.34%) of the Iohexol group patients and none in the Iodixanol group of patients. Late allergic reactions occurred in 03/29 (10.34%) of the Iohexol group and 02/29 (06.89%) of the Iodixanol group of patients ($p = 0.001$). One patient developed a severe skin rash due to a late adverse reaction following iodixanol administration. No fatalities were reported. Both iodixanol and iohexol are considered safe for routine IVP examinations, exhibiting a low nephrotoxicity profile, particularly in elderly or high-risk patients.

Conclusions: In conclusion, iodixanol and iohexol contrast media for routine IVP examinations are safe and have a low nephrotoxicity profile, particularly in elderly and high-risk patients. Late allergic reactions may be the most common adverse effect following the infusion of nonionic contrast media.

KEY WORDS: contrast, ivp, Iohexol, Iodixanol and Allergy

Original Research Article

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A cross-sectional study of neonatal hearing impairment: understanding its prevalence and risk factors in a tertiary care hospital in Kerala, India

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ABSTRACT

Background: Congenital hearing loss is one of the most prevalent sensory impairments with severe consequences when undetected. The objective of neonatal hearing screening is to identify hearing impairments shortly after birth to initiate treatment as soon as possible and to allow affected children to enjoy normal development. The aim of the study was to determine the prevalence and identify the predisposing factors of HI among neonates in a tertiary care centre in Idukki district of Kerala using a universal neonatal hearing screening (UNHS) program, in an attempt to initiate early interventions in affected neonates.

Methods: This was a cross-sectional study conducted in the department of ENT, Al Azhar Medical College and Super Specialty Hospital, Thodupuzha, Kerala over a period of 1 year involving 646 neonates. The study excluded any newborn whose parent/guardian did not give consent for the study, or neonates with microtia grade II and above.

Results: The overall prevalence of HL in neonates in our study was 3.1 in 1000 live births out of which 61% were males and 39% females. The risk factors found in our study were preterm babies, maternal age >35, low birth weight, teenage pregnancy, primigravida, and neonatal jaundice requiring blood transfusion.

Conclusions: In a standard neonatal population, both at-risk and non-at-risk neonates warrant the immediate adoption of a universal hearing screening program for all neonates in India. Hence, we would like to stress the importance of identifying infants with HL, administering early treatment and performing appropriate screening tests in infants at the right time period.

Keywords: Hearing impairment, Otoacoustic emissions, Neonates, Preterm, Low birth weight

INTRODUCTION

Congenital hearing loss is one of the most prevalent sensory impairments with severe consequences when undetected. Hearing impairment (HI) can result in delays in language, communication and cognitive development. Early identification and intervention of hearing loss (HL) can prevent linguistic, educational and psychosocial

problems.¹ Congenital or acquired HL may result in delayed developmental milestones leading to poor academic performance and personal-social and behavior problems due to deficits in speech and language acquisition. The objective of neonatal hearing screening is to identify HIs shortly after birth to initiate treatment as soon as possible and to allow affected children to enjoy normal development. When HL goes unidentified early in

confused and agitated and had some subclinical seizure-like activity. An urgent MRI pituitary (Fig. 1) followed by a pituitary multi-disciplinary team (MDT) meeting concluded a provisional diagnosis of PA. While inpatient, he developed new onset bradycardia, with new onset T-wave inversions, and was found to have incidentally raised troponin. Echocardiography with contrast showed a balloon-shaped heart, hypokinesia of the apical segment (Fig. 1), reduced ejection fraction of 45%, and a significant avascular filling defect in the left ventricle, raising the probability of a left ventricle thrombus. A CT scan later confirmed it (Fig. 1). Anti-coagulation MDT suggested anti-coagulating the thrombus with warfarin and enoxaparin bridging till INR is >2, as neurosurgery mentioned that the bleeding risk inside the tumour is low. On the 12th day of admission, he developed new confusion, incomprehensible words, and slurring of speech. Immediate CT-angiogram of cerebral vessels showed occlusion of the internal carotid artery up to the M1 region of the left middle cerebral artery (LMCA), suggesting a long thrombus. Immediate thrombectomy was performed with a remarkable post-thrombectomy improvement. Cardiac MR (magnetic resonance) (Fig. 1) suggested a diagnosis of global SRC with a significant improvement of the regional wall motion abnormalities, LV thrombus reduction and improvement of ejection fraction compared to previous echocardiography. His coronary artery angiogram (Fig. 1), done later, showed no significant coronary artery disease, confirming the diagnosis of SRC.

Conclusion

Early recognition and prompt steroid therapy, with correction of electrolyte imbalances, are the initial core stones of management in PA. Stress-related cardiomyopathy, often called Takotsubo cardiomyopathy, is a rare finding in a patient with PA.⁴ Our case reverberates the finding that PA can lead to SRC, rarely, though, which can subsequently lead to thrombus formation that can lead to ischaemic stroke.

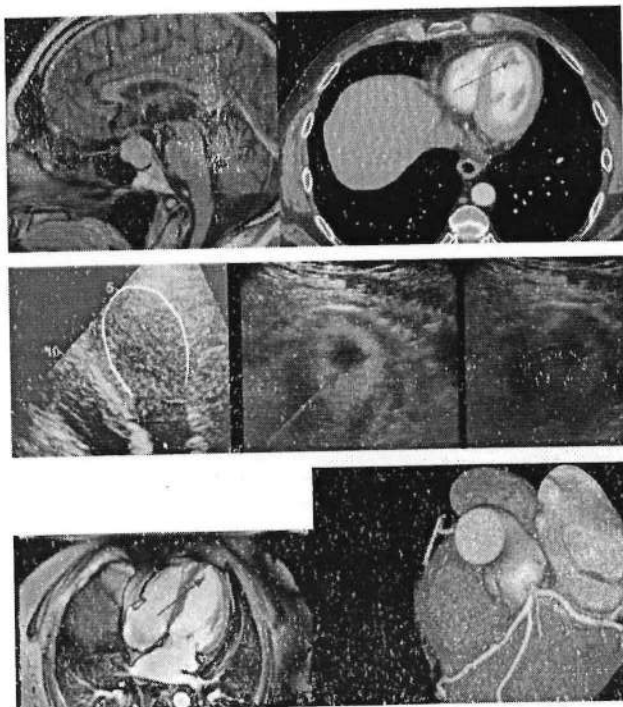


Fig 1: Compiled picture showing the pituitary MRI, ultrasound heart, CT thorax, Echocardiography of heart, cardiac MRI, and coronary CT angiography

Top left - pituitary MRI showing pituitary lesion - 23 mm; Top right - CT thorax showing large volume LV thrombus; Middle left - Echocardiography of heart showing ballooning of heart suggestive of SRC; Middle right - Ultrasound of heart with contrast showing avascular lesion in LV (flow with spinview); Bottom left - Cardiac MRI showing decrease in LV thrombus load; Bottom right - Coronary CT angiography showing patent coronary arteries

Abbreviations: MR - magnetic resonance imaging; CT - computed tomography; LV - left ventricle; SRC - stress related cardiomyopathy

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Secondary pyoderma arising from prolonged cloth face mask use: A rare adverse skin reaction in a factory worker during the COVID-19 pandemic

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Introduction

The COVID-19 pandemic prompted the widespread use of face-masks among the general population and healthcare workers to mitigate virus transmission. While masks are crucial for infection control, extended usage may lead to various skin complications. Masks cover body areas close to the mouth, nose and ear creating severely moist and warm local skin environment which changes the natural skin milieu considerably of perioral and perinasal areas. It also increases redness, pH-value, fluid loss through the skin epithelium, increased hydration and sebum production measurably.¹ Dermatological side effects in adults due to chronic cloth mask use like generalised or localised maculopapular eruptions, urticaria, pseudo-chilblain and acro-ischaemic lesions, varicelliform rash, livedoid lesions, erythema multiforme-like vasculitis, herpes lesions, purpuric lesions, acute generalised exanthematous pustulosis (AGEP)-like rash are very common.^{2,3} Acne, contact eczema and urticaria associated with hypersensitivities to ingredients of the masks such as formaldehyde (ingredient in textile) and thiram (ingredient in ear bands) are highly hazardous. Pyoderma, a bacterial skin infection characterised by fleshy growths, is an unusual manifestation related to prolonged mask wear. Being one of the commonest clinical conditions in dermatological practice, with higher incidence amongst lower socio-economic class, it shows response to correct antibiotic policy and hygiene practices.

We present a case of a female factory-worker known for chronic cloth-mask use amidst the COVID-19 pandemic, with response to antibiotics, of pyoderma infection in supra-auricular area and the case has not been previously documented and is relevant to the COVID-19 pandemic era.

Case report

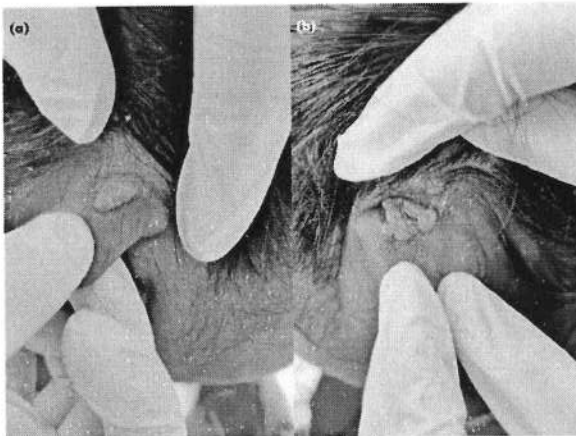


Figure 1: proliferative pyodermic lesion on bilateral supra-auricular region

Results

A 50 year old female factory worker reported consistent and prolonged usage of a cloth face-mask for the past 6 months during work hours. Examination revealed fleshy growths seen in Fig. 1. No history of similar dermatological issues was reported previously. Physical examination findings, along with the patient's occupational history and prolonged mask use, led to the diagnosis of pyoderma secondary to extended cloth face mask use.

Discussion

While mask-wearing remains pivotal in controlling the spread of infectious diseases, healthcare providers and the public should be vigilant regarding potential dermatological complications.

In many multicentre studies, duration of wearing masks was identified as the most important factor for the development of adverse effects where people who wear masks for >6 h per day tend to have more adverse skin reaction. Other factors include skin characteristics like skin temperature, hydration, transepidermal water loss (TEWL), and sebum secretion. Whether these factors are the direct consequences of mask-related skin problems have not been confirmed. Pyoderma, a rare occurrence linked to extended mask use, underscores the importance of adequate mask hygiene, regular breaks, and consideration of alternative mask materials or designs for prolonged usage and appropriate antibiotic policy.

Conclusion

The rarity of the case merits attention and highlights the need for healthcare professionals and individuals to recognise and manage potential adverse skin reactions associated with prolonged cloth face mask use. Further research and awareness are essential to address and mitigate rare but possible complications arising from prolonged mask wear during the ongoing pandemic.

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Cardiac sarcoid - A case report

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Introduction

The infiltrative cardiomyopathy known as cardiac sarcoidosis (CS) is caused by granulomatous inflammation of the heart. The most typical clinical manifestation is new onset atrioventricular (AV) block, although it can also manifest as ventricular arrhythmias and sudden cardiac death. The gold standard is an endomyocardial biopsy, though it is not sensitive since CS can affect the myocardium unevenly. A strong suspicion is necessary for diagnosing cardiac sarcoidosis (CS), especially in individuals with systemic sarcoidosis or in the elderly with known cardiac illnesses.

Our case

A 70-year-old female patient presented to our centre with rapid progression of heart failure and VT storm. She had history of single chamber pacemaker (VVI) implanted elsewhere for symptomatic intermittent complete atrioventricular block 8 months prior. The coronary angiogram done previously showed normal epicardial coronaries. She was found to have rapid monomorphic ventricular tachycardia (VT) which was reverted with emergency DC cardioversion. She continued to have breakthrough episodes of VT despite amiodarone and lignocaine intravenous infusion. The VT episodes diminished on increasing the ventricular pacing rate to 110 beats per minute. The subject's echocardiography was done after the control of VT, which showed a dilated left ventricle with severe LV dysfunction and ejection fraction (EF) of 27 %. There was evidence of a dense septal scar with significant thinning of the basal inter ventricular septum. In view of the presence of AV block with rapid progression of heart failure with severe left ventricular dysfunction, evidence of dense basal septal scar associated with runs of automatic VT, there was a high suspicion of cardiac sarcoidosis. She was subjected to full body PET and cardiac SPECT and was diagnosed as infiltrative cardiomyopathy, Cardiac Sarcoid. She was started on steroids and immunosuppressants in consultation with the rheumatologist. Her stay in cardiac intensive care (CCU) was uneventful and she was symptomatically better and discharged. After a duration of 8 months, the subject's death was reported following sudden arrhythmic event.

Discussion

The presence of Q waves in the anteroseptal leads (leads V1-V3), with right bundle branch block in our patient with normal epicardial coronaries guided us to the possibility of a septal scar and possible infiltration of the conduction system. The echocardiogram also was consistent with the presence of a dense septal scar with basal septal thinning. Treatment consists of immunosuppression¹, immunomodulators or intravenous pulses of methylprednisolone with or without immunosuppressive agents.^{2,3}

Conclusion

Although the burgeoning population of older adults is intrinsically vulnerable to cardiovascular disease, the utility of many management precepts that were validated in younger adults is often unclear. Biology, physiology, and body composition change with aging, with important influences on cardiovascular disease testing procedures and their interpretation. Age-related biological changes and shifting patient priorities warrant adjustment of strategies for evaluation and management of CVD. The sensitivity, specificity, and clinical value of biomarker and imaging tests for CVD change as patients age. Research is needed to bet-



A Bicenter Retrospective Study Of Human Otoacariasis in Kerala

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Abstract

Introduction Otoacariasis is the infestation of ticks or mites in the human ear canal. It poses a significant threat to public health due to its potential complications. *Aim:* This study aimed to investigate the incidence, clinical presentation, and treatment outcomes of otoacariasis in rural southern India. *Methods:* A retrospective analysis of 46 patients from two hospitals in Kerala, focusing on symptomatology, tick location, and removal interventions. Patients with confirmed otoacariasis were included in this study and demographic details, clinical manifestations, and treatment modalities were evaluated. *Results:* Among the 46 patients, 63% were males, with ear discharge (37%) and ear pain (23.9%) being the common symptoms. Glycerine application followed by syringing was the most effective removal method employed. *Conclusion:* Prompt recognition and removal of ticks are crucial to prevent complications. Educational campaigns and healthcare provider awareness are essential to mitigate otoacariasis risks in rural communities.

Keywords Otoacariasis · Ear · Otalgia · Rural areas · Entomology

Introduction

Otoacariasis is a rare and potentially debilitating condition characterized by the infestation of ticks or mites in the human ear canal, causing significant discomfort and severe symptoms [1]. These tiny arthropods tend to attach themselves to the structures of the ear, including the tympanic membrane, cartilage, and pinna, often in multiple numbers [2]. The presence of these parasites follows a seasonal pattern, with a higher incidence during the rainy season and a decrease in the dry season, typically reaching its lowest point in winter [3].

If left untreated, otoacariasis can lead to severe complications, including perforation of the tympanic membrane, suppurative otitis media, and bleeding in the ear canal [4]. As vectors of disease, ticks pose a significant threat to public

health, causing serious harm through tick-borne paralysis, paresis, and anaphylaxis [5].

In this study, we aimed to investigate the incidence, clinical presentation, and treatment outcomes of patients with otoacariasis. There is a paucity of literature from the southern part of the Indian subcontinent regarding this condition, which is particularly prevalent in the hilly regions. We aim to address this gap in the literature and provide valuable insights into the management and treatment of otoacariasis in this region.

Methods

A retrospective analysis was conducted in the Department of Ear, Nose, and Throat (ENT) at two hospitals in Kerala state: a tertiary care centre in Idukki District and a secondary care centre in Wayanad District. Data were extracted from the emergency department and otorhinolaryngology department of both hospitals.

The study population comprised individuals across various age groups, with a specific emphasis on those residing in rural areas and engaging in outdoor activities such as agriculture, horticulture, or animal husbandry. Clinical evaluations encompassed symptomatology (fever, ear pain, hearing

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A Radiographic Morphometric Analysis for the Preoperative Localization of the Sphenopalatine Artery

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Abstract

The sphenopalatine foramen (SPF) is a crucial anatomical landmark in major anterior skullbase procedures and in challenging situations, the traditional method of identification of the crista ethmoidalis may be inadequate or impossible. This study aimed to evaluate different radiological bony landmarks to assist endoscopic localization of the SPF. This was a cross sectional study which was done using computed tomography (CT) of the paranasal sinuses of 50 patients who presented to a tertiary care hospital with a history of recurrent posterior epistaxis. The distances from the SPF to the following surgical landmarks were measured from each side: nasal floor, choanal arch, maxillary line, anterior head of the middle turbinate, and the basal lamella of the middle turbinate. The mean (SD) SPF was 23.6 ± 4.6 mm above the nasal floor, as measured in the vertical dimension. In the anteroposterior dimension, the mean (SD) SPF measured 36.3 ± 2.3 mm deep to the maxillary line, 34.8 ± 3.1 mm deep to the anterior head of the middle turbinate, 7.5 ± 2.0 mm deep to the level of the basal lamella, and 9.0 ± 1.8 mm anterior to the choanal arch. This study found that the mean distances were almost the same in male and female patients. This study concluded that radiological measurements from the SPF to nasal floor, choanal arch, maxillary line, anterior head of middle turbinate and basal lamella are reliable for both sexes. Measurements from the choanal arch and basal lamella of the middle turbinate were reliable landmarks for finding the SPF. Hence, addition of above surgical bony landmarks has potential clinical application in rapid localization of the SPF.

Keywords Radiological · Analysis · Sphenopalatine · Choanae · Computed tomography

Introduction

The sphenopalatine foramen (SPF) is a crucial anatomical landmark in major procedures like harvesting of a nasoseptal flap for nasal reconstruction or skull base repairs, posterior epistaxis control, and functional endoscopic sinonasal surgery; hence, knowing its location is of utmost importance. The SPF which is present at the articulation between the superior aspect of the vertical portion of the palatine

bone and the inferior projection of the sphenoid bone, is a foramen on the lateral wall of the nose that connects the pterygopalatine fossa to the nasal cavity [1]. It connects the nasal cavity to the pterygopalatine fossa of the skull and houses the sphenopalatine artery (SPA) and vein, the posterior superior lateral nasal nerve, and the nasopalatine nerves [2, 3].

Endoscopically, the location of the SPF is identified after elevation of a mucoperiosteal flap and identification of the crista ethmoidalis from the posterior aspect of the middle meatus. If these landmarks are not swiftly found, opening the maxillary sinus may help the surgeon identify it. The crista ethmoidalis, or *cristae ethmoidalis ossis palatine*, is a small crest of the perpendicular plate or ascending process of the palatine bone that meets the most posterior, inferior and lateral aspect of the middle turbinate. The crista is generally located just anterior to the anterior-inferior aspect of the sphenopalatine foramen [4].

In severe intractable epistaxis, it may be difficult to identify the SPA as it exits the SPF due to active bleeding that

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Ossicular Reconstruction in Chronic Otitis Media: A Systematic Review

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Abstract

Ossicular discontinuity is the most common cause of conductive hearing loss. Between 40 and 90% of tympanoplasties require middle ear ossicular chain reconstruction. The objective of this review is to segregate the literature on the outcome of various available graft materials in ossicular reconstruction, the preoperative predictors of ossicular necrosis and to find the risk of residual cholesteatoma in autologous incus ossiculoplasty. English language databases, including MEDLINE, Science Direct, PubMed, Web of Science and the Google Scholar search engine, were searched from 1950 to 2021, using the MeSH keywords: Chronic Otitis media, Middle ear, Ossicular reconstruction. The available evidence is not sufficient and there is a need for much more clinical research with larger sample sizes in order to standardize ossiculoplasty techniques, an ideal ossicular prosthesis and to rule out the presence of squamous epithelium in eroded ossicles which may predispose for future recurrences.

Keywords Chronic otitis media · Ossicles · Cholesteatoma · Incus · Titanium prosthesis

Introduction

The use of autologous materials in middle ear surgery has seen renewed interest over the last decade. Ossicular discontinuity usually cannot be determined unless an operation is performed. Ossicular chain reconstruction is a challenging endeavour that is usually expected to result in significant improvement of conductive hearing loss [1].

Surgeries for reconstruction of the middle ear apparatus faced much opposition due to lack of antibiotics, sterilization techniques, and microscopes. Hall and Rytznér in 1957 first described ossiculoplasty using a patient's remnant ossicles. Cartilage was first used for tympanoplasty in 1973 [2, 3]. Grote in 1981 introduced the hydroxyapatite prosthesis,

which is commonly used as implants. In the 1970s, titanium was established as an excellent biocompatible material and was introduced as an alloplastic material for ossiculoplasty in 1993 [1]. In 1973, Bellucci classified otorrhea based on the state of infection. Austin in 1972 classified four groups-A to D, based on the presence or absence of malleus handle and stapes superstructure in cases where the incus was partially or completely eroded. Kartush in 1994 added two groups E and F respectively to Austin's classification [4].

The present review study was designed to provide an overview of various studies which showed significant improvement in postoperative hearing using different graft materials in ossicular reconstruction in patients with chronic otitis media, the predictors of ossicular necrosis and to find the risk of residual cholesteatoma in patients who underwent autologous incus ossiculoplasty.

Materials and Methods

Search Strategy

A comprehensive electronic database search among all English language databases, including MEDLINE, Science Direct, PubMed, Web of Science and the Google Scholar

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Self-inflicted Traumatic Acute Epiglottitis due to Use of Tongue Scraper in Adults: A Retrospective Descriptive Study

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ABSTRACT

Introduction: Acute Epiglottitis (AE) is an uncommon disease in healthy individuals but can be potentially life-threatening if left undiagnosed and untreated due to the risk of sudden airway obstruction.

Aim: To identify the various characteristics, like demographics, clinical manifestations, and modes of management, in a series of adult patients with self-inflicted traumatic AE.

Materials and Methods: This was a retrospective single-centre descriptive study conducted in the Department of Ear, Nose and Throat (ENT) in Al Azhar Medical College and Superspeciality Hospital in Thodupuzha, Idukki, Kerala, India and included all adult patients over the age of 18 years with self-inflicted traumatic AE due to the use of tongue scrapers from July 2022 to December 2023. The AE was diagnosed by flexible nasolaryngoscopy, which showed congested and oedematous epiglottis. Soft-tissue neck lateral view radiographs was used to confirm the diagnosis. Various demographic details-including

age, gender, history of trauma, clinical symptoms, and signs-were evaluated along with treatment modalities. For descriptive statistics, the categorical variables were presented as ratios and proportions, while numerical data were presented as means and standard deviations.

Results: A total of 16 patients were included, out of which five were males and 11 were females. All patients had a history of self-inflicted trauma while aggressively using metallic tongue scrapers. The mean age of presentation was 42.43 years. The most common symptom was sore throat (100%) and odynophagia (100%), followed by muffled voice (87.5%) and fever (75%). All patients were treated conservatively with broad-spectrum antibiotics and steroids. None of present patients had significant complications.

Conclusion: The AE is a life-threatening condition which has to be diagnosed at the earliest. The use of tongue scrapers should not be advocated to avoid the potential side effects.

Keywords: Broad-spectrum antibiotics, Endoscopy, Morbidity, Steroids, Trauma.

INTRODUCTION

The AE is a life-threatening medical emergency with potential risk of sudden airway obstruction and death due to the extensive inflammation of supraglottic structures, such as the epiglottis, aryepiglottic folds, and arytenoids [1,2]. Although bacterial infection is the most common underlying aetiology, other factors like viral or fungal infections, chemical or thermal burns, inhalation of fumes, non-infectious conditions like trauma, associated comorbid systemic illnesses, and chemotherapy-also contribute to the causative factors. The common microorganisms of AE in adults are *Streptococcus pneumoniae*, *Staphylococcus aureus*, and *Klebsiella pneumoniae*. Risk factors include elderly age, male sex, pre-existing epiglottic cyst, obesity, and impaired immunity of the host [3]. In comparison with children, epiglottitis in adults is less severe, as the epiglottis is smaller and more rigid, causing less occlusion of the airway by inflammation [4].

The first published case of AE in the English literature dates back to 1799, wherein George Washington was believed to have died from AE during an epidemic of influenza [5]. The incidence of adult epiglottitis ranges between 1/100,000 and 4/100,000 [3,6]. The average age of presentation for the adult group is around 45 years. Among adults, males are more commonly affected, with a male-to-female ratio of 1.8:1 to 4:1 [7]. The 'tongue scraper' is an oral hygiene device used to scrape off the harmful bacteria, thereby managing halitosis, and is also used to remove excess plaques. Tongue scrapers are more usually made of plastic, resin, rubber, or metal. It reduces halitosis by decreasing volatile sulphur compounds concentration by 20% to 70% [8].

The present study is significant as there are no such previous studies in the past English literature mentioning self-inflicted trauma with tongue

scrapers as a causative factor for adult epiglottitis. The present study strived to review all such cases of self-inflicted traumatic epiglottitis in adults and to assess the clinical features, including demographic characteristics, diagnostic methods, treatment, and outcomes.

MATERIALS AND METHODS

This was a retrospective single-centre descriptive study conducted in the Department of ENT in Al Azhar Medical College and Superspeciality Hospital in Thodupuzha, Idukki, Kerala, India involving 16 patients identified by ICD-10 codes (International Statistical Classification of Diseases and Related Health Problems) J05.1 (epiglottitis) [9] from July 2022 to December 2023. Institutional Ethical Committee clearance (AAMC/IEC/2022-2023/11) was obtained.

Inclusion criteria: All adult patients above the age of 18 years who had been admitted and treated with AE following the use of tongue scrapers.

Exclusion criteria: All other cases of adult epiglottitis were excluded.

Study Procedure

The diagnosis of AE was established by atleast two of the following: (a) direct visualisation of prominent inflamed, bulging, oedematous epiglottis on depressing the tongue (Sunrise Sign); (b) flexible nasolaryngoscopy showing grossly swollen, globular, oedematous, and congested epiglottis with whitish slough over the epiglottis and adjacent supraglottic structures, along with signs of excoriation over the epiglottis; and (c) soft-tissue neck (lateral view) radiographs to confirm the presence of the 'thumb sign.'



Inflammatory Pediatric Grisel Syndrome Secondary to Acute Adenoiditis: A Rare Case Report and Review of Literature

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Abstract

Grisel's syndrome is a rare condition characterized by non-traumatic atlantoaxial subluxation, typically secondary to inflammatory processes or surgical interventions in the head and neck region. The literature suggests a rare incidence of approximately 1:100,000,000 per year without gender predilection. The syndrome is often associated with an abnormal head posture and can lead to serious neurological complications if not diagnosed and treated promptly. This paper reviews the pathophysiology, clinical presentation, diagnostic approach, and management strategies for Grisel's syndrome, emphasizing the importance of early recognition to prevent morbidity. A 7-year-old boy presented with torticollis, head tilt to the left, nasal obstruction, purulent nasal discharge, headache, and fever for 3 days. Examination showed painful head tilt to left, with neck rotation to the right and no neurological deficits. Nasopharyngoscopy revealed inflamed adenoid tissue with purulent discharge. CT scan showed a Fielding type I rotatory atlantoaxial subluxation. He was treated with intravenous antibiotics, analgesics, and a cervical collar. He became symptomatically better after 7 days of treatment and on follow-up, he had fully recovered and returned to normal activities. We performed a systematic review of the literature following the preferred reporting items for Systematic reviews. Literature searches were conducted in web-based search engines using MeSH terms and key words. Grisel's syndrome, though rare, should be considered in pediatric patients presenting with painful torticollis following upper respiratory infections or head and neck procedures. Prompt diagnosis through radiographic imaging and early intervention can prevent severe complications and improve patient outcomes.

Keywords Inflammatory · Grisel's Syndrome · Atlantoaxial Subluxation · Torticollis

Introduction

Grisel's syndrome is characterized by atlantoaxial subluxation resulting from non-traumatic inflammatory conditions or surgical interventions in the head or neck region. Following inflammatory events or surgeries that necessitate extreme neck positions, muscle spasms in the neck can

lead to atlantoaxial subluxation. This syndrome was first documented in 1830 by Sir Charles Bell, who observed a patient with pharyngeal ulceration due to syphilis, which went undiagnosed and ultimately resulted in spinal cord compression and the patient's death [1, 2]. In 1930, French physician Grisel was the one who reported two cases of atlantoaxial subluxation associated with nasopharyngeal inflammation [2, 3] and hence, named after him. He attributed the condition to the increased laxity of the atlantoaxial joint ligaments, which are susceptible to extreme positioning and inflammatory processes. Risk factors for this syndrome include pediatric age group, surgical trauma, genetic disorders, and inflammatory conditions such as pharyngitis, adenotonsillitis, and upper respiratory infections. Recent abscesses in the peritonsillar or deep neck regions, otitis media, and surgeries involving extreme head positions also contribute to the risk. Surgical procedures like tonsillectomy, uvulectomy, adenoidectomy, and cleft lip and palate

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LITERATURE REVIEW

The inferior concha bullosa: A rare condition with great functional impact

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ABSTRACT

BACKGROUND. Pneumatization of the turbinate is also known as concha bullosa (CB). Concha bullosa is most commonly found in the middle turbinate; its occurrence in the inferior turbinate is very rare.

MATERIAL AND METHODS. A search of the literature was conducted using PubMed, Medline, Google and Google Scholar search engines using the keywords "inferior turbinate and concha bullosa", "inferior turbinate and pneumatization", covering the period from 1990 to 2024. Only case reports published in English were included in the study.

RESULTS. We found twenty publications with a total of 21 cases that fit the above inclusion criteria for the analysis, with our case being the 22nd. Our patient was a 32-year-old male who presented to the ENT outpatient department with complaints of nasal obstruction for two years. Diagnostic nasal endoscopy was performed and a diagnosis of deviated nasal septum (DNS) to the right and left inferior turbinate hypertrophy was made. He was started on intranasal steroids and decongestants but did not improve. Hence, CT PNS was done and revealed a left inferior concha bullosa along with right-sided DNS. Septoplasty was carried out and the left inferior turbinate was excised. Gross appearance of the turbinate confirmed the diagnosis.

CONCLUSION. Pneumatization of the inferior turbinate is a very rare anatomical anomaly. It is often asymptomatic and diagnosed incidentally on a CT scan. It can present as nasal obstruction, recurrent rhinosinusitis, and headaches. Treatment depends on the severity of symptoms.

KEYWORDS: pneumatization, inferior turbinate, concha bullosa, nasal obstruction.

INTRODUCTION

The turbinates are key anatomical structures located on the lateral nasal wall. A significant portion of inhaled air flows between the inferior and middle turbinates. Among them, the inferior turbinate is the largest and is situated in the internal nasal valve region^{1,2}. It plays a crucial role in humidifying, heating, and filtering inhaled air, as well as directing nasal airflow, contributing to approximately two-thirds of nasal airflow resistance. Structurally, turbinates consist of a pseudostratified columnar ciliated respiratory epithelium with a thick, vascular, and erectile glandular tissue layer. Due to this composition, even slight changes in the size of the inferior turbinate can have a considerable impact on nasal airflow^{3,4}.

Anatomically, the superior and middle conchae formed from the ethmoid bone, while the inferior concha is a separate bone. Pneumatization of the nasal turbinates, known as concha bullosa (CB), is a common anatomical variation of the lateral nasal wall, characterized by the presence of air cells within the turbinates. CB most frequently occurs in the middle turbinate, while its presence in the superior and inferior turbinates is considered rare^{5,6}. The exact cause and mechanism of turbinate pneumatization remain unclear. Inferior concha bullosa (ICB) was first identified by Zinreich et al.⁷ in 1988. Although ICB is typically asymptomatic, it may contribute to nasal obstruction or inferior turbinate hypertrophy in some cases. Unlike middle turbinate concha bullosa, which is

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Review Article

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Cognitive biases in otolaryngology: a systematic narrative review

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ABSTRACT

Cognitive biases are systematic errors in thinking that significantly impact decision-making in surgery, including Otolaryngology. These biases contribute to misdiagnoses, inappropriate treatments and surgical errors, affecting patient outcomes. Despite growing recognition of cognitive biases in medicine, awareness and structured training in cognitive debiasing strategies remain limited. This narrative review systematically examines cognitive biases affecting surgical decision-making in Otolaryngology, categorizes their occurrence in different phases of surgical care and discusses mitigation strategies. A comprehensive literature search was conducted using multiple databases, including MEDLINE, Embase and Scopus, focusing on cognitive biases in surgical fields, particularly Otolaryngology. Studies that explored bias-related diagnostic errors, treatment decisions and mitigation strategies were included. Cognitive biases were classified based on their impact on the diagnostic workup, treatment phase and post-treatment follow-up. A total of 71 cognitive biases were identified as relevant to Otolaryngology. These biases were categorized according to their definitions, sources, examples in Otolaryngology and mitigation strategies. Targeted mitigation strategies, including structured decision-support tools, cognitive forcing strategies and multidisciplinary case discussions, were highlighted. Cognitive biases play a critical role in surgical decision-making in Otolaryngology, often leading to diagnostic and treatment errors. Increased awareness and implementation of cognitive debiasing strategies are essential to improving clinical reasoning and patient outcomes. Future research should focus on the effectiveness of structured interventions and the role of artificial intelligence in mitigating cognitive biases in surgery.

Keywords: Cognitive bias, Clinical decision making, Diagnostic errors, Otolaryngology, Operative surgical procedures

INTRODUCTION

Adverse events related to surgical care are increasing, many of which are considered preventable. Research

suggests that medical errors occur in approximately 1.7% to 6.5% of hospital admissions, contributing to substantial morbidity and mortality annually in the United States, with estimates reaching up to 100,000

Clinico-Investigational Profile and Surgical Outcomes of Pediatric Cholesteatoma: A Case Series

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Open Access

Abstract

Pediatric cholesteatoma causes extensive destruction within the middle ear and adjacent structures. Despite advancements in surgical techniques, the management of pediatric cholesteatoma remains controversial due to the varied presentations and its rapid progression. This study aims to evaluate the presentation of symptoms, otoscopic findings, surgical outcomes, and functional results in a series of pediatric cholesteatoma patients at our institution. A total of 18 patients, aged 5 - 14 years, underwent canal wall down (CWD) or intact canal wall (ICW) surgery based on the extent of disease as assessed intraoperatively. The study focused on the sites involved by cholesteatoma, the surgical challenges encountered, and the techniques employed. Outcomes measured included the incidence of residual and recurrent cholesteatoma, as well as hearing function at follow-up. Our results indicated a 69% improvement in the air-bone gap (ABG) among patients, with residual perforation observed in 4% of cases and no recurrences during the follow-up period. The increased selection of the CWD technique correlated with the extensive nature of the disease presentation. This study underscores the necessity for individualized treatment plans in pediatric cholesteatoma management, considering the aggressive nature of the disease and the need for a balance between eradication and hearing preservation.

Keywords

Pediatric, Cholesteatoma, Children, Canal Wall Down

1. Introduction

Pediatric cholesteatoma is a rare but serious condition, with an estimated incidence



Evaluation of Accuracy of Clinical and Preoperative HRCT Diagnostic Findings with Intraoperative Findings in Patients of Cholesteatoma

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Abstract

Cholesteatoma is a progressive and destructive middle ear disease that can lead to severe complications such as hearing loss, bone erosion, and even intracranial infections if left untreated. Accurate preoperative evaluation is crucial for the successful surgical management of this condition. High-Resolution Computed Tomography (HRCT) has become the gold standard in evaluation of extent of cholesteatoma due to its ability to reveal anatomical details of the middle ear. This study compares the accuracy of clinical and preoperative HRCT findings with intraoperative observations in patients with Cholesteatoma. Fifty patients diagnosed with Cholesteatoma who underwent surgical intervention were retrospectively analyzed. Patients aged 18 years and above diagnosed with acquired cholesteatoma. Who underwent HRCT imaging and Clinical Evaluation prior to surgery and with complete intraoperative findings documented during surgery were included in this study. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated to assess the diagnostic performance of clinical evaluation and HRCT against intraoperative findings. A total of 50 patients were included in our study, out of which 30 were males and 20 were females. Majority of patients were within the 31–40 years age group. In our study the comparison between HRCT findings and intraoperative observations, we found that incus erosion through computed tomography (CT) 40 cases was almost the same as during surgical observation in 39 cases. Malleus appeared eroded on CT in 33 cases however, 37 cases were seen with that observation during operation. The sensitivity, specificity, positive predictive value, and negative predictive value were 100% for detecting sigmoid plate erosion, dura exposure and malleus-incus joint discontinuity through preoperative CT. Our findings show that HRCT has superiority in assessing the involvement of vital structures compared to clinical evaluation, making it a mandatory tool for preoperative planning.

Keywords Cholesteatoma · HRCT · Intraoperative

Introduction

Cholesteatoma is a chronic condition characterized by the abnormal growth of keratinizing squamous epithelium in the middle ear, which can cause destructive bony erosion and lead to life-threatening complications if not managed appropriately [1–3]. The condition is typically classified into

congenital and acquired types, with the latter being more common. Acquired Cholesteatoma usually occurs as a result of chronic otitis media, where a retraction pocket or tympanic membrane perforation allows for the accumulation of keratin debris in the middle ear [4].

The primary goal of Cholesteatoma management is to eradicate the disease while preserving hearing. Surgical intervention is the mainstay of treatment, but accurate diagnosis and assessing the extent of disease is essential for preoperative planning [5, 6]. Clinical evaluation, which includes otoscopy and audio logical tests, provides initial clues to the presence of Cholesteatoma but may not be sufficient to assess the extent of the disease [7, 8]. Imaging modalities, particularly HRCT, have become indispensable in evaluating Cholesteatoma preoperatively due to their ability to delineate middle ear structures and detect bony erosion, ossicular involvement, and potential complications

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Original Research Article

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A cross-sectional study of neonatal hearing impairment: understanding its prevalence and risk factors in a tertiary care hospital in Kerala, India

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ABSTRACT

Background: Congenital hearing loss is one of the most prevalent sensory impairments with severe consequences when undetected. The objective of neonatal hearing screening is to identify hearing impairments shortly after birth to initiate treatment as soon as possible and to allow affected children to enjoy normal development. The aim of the study was to determine the prevalence and identify the predisposing factors of HI among neonates in a tertiary care centre in Idukki district of Kerala using a universal neonatal hearing screening (UNHS) program, in an attempt to initiate early interventions in affected neonates.

Methods: This was a cross-sectional study conducted in the department of ENT, Al Azhar Medical College and Super Specialty Hospital, Thodupuzha, Kerala over a period of 1 year involving 646 neonates. The study excluded any newborn whose parent/guardian did not give consent for the study, or neonates with microtia grade II and above.

Results: The overall prevalence of HL in neonates in our study was 3.1 in 1000 live births out of which 61% were males and 39% females. The risk factors found in our study were preterm babies, maternal age >35, low birth weight, teenage pregnancy, primigravida, and neonatal jaundice requiring blood transfusion.

Conclusions: In a standard neonatal population, both at-risk and non-at-risk neonates warrant the immediate adoption of a universal hearing screening program for all neonates in India. Hence, we would like to stress the importance of identifying infants with HL, administering early treatment and performing appropriate screening tests in infants at the right time period.

Keywords: Hearing impairment, Otoacoustic emissions, Neonates, Preterm, Low birth weight

INTRODUCTION

Congenital hearing loss is one of the most prevalent sensory impairments with severe consequences when undetected. Hearing impairment (HI) can result in delays in language, communication and cognitive development. Early identification and intervention of hearing loss (HL) can prevent linguistic, educational and psychosocial

problems.¹ Congenital or acquired HL may result in delayed developmental milestones leading to poor academic performance and personal-social and behavior problems due to deficits in speech and language acquisition. The objective of neonatal hearing screening is to identify HIs shortly after birth to initiate treatment as soon as possible and to allow affected children to enjoy normal development. When HL goes unidentified early in

Microbial Profile and Antibiotic Sensitivity Pattern in Urinary Tract Infections among Children Attending a Tertiary Care Center, Idukki District, Kerala: A Cross-sectional Study

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ABSTRACT

Introduction: Over the recent decades, the importance of Urinary Tract Infections (UTI) has been increasingly recognised in children. The occurrence of UTI during childhood may lead to acute and/or chronic consequences, such as impaired renal function, renal scarring, and hypertension. Due to the irrational use of antimicrobials, multidrug resistant bacterial strains are frequent. Hence, there is an urgent need for continuous surveillance of the microbiological profile of UTI.

Aim: To investigate the microbial profile and antibiotic sensitivity pattern from the urine of paediatric patients suspected to have UTI in Idukki district, Kerala and to explore its association with seasonal variations.

Materials and Methods: This clinical cross-sectional study was conducted in Al Azhar Medical College and Super Specialty Hospital, Thodupuzha, Idukki, Kerala, India, from January 2019 to December 2021. The study involved 882 paediatric patients in the age group 0-15 years with symptoms and signs suggestive of UTI. Data regarding age, gender, season, laboratory and culture results, and antibiotic sensitivity pattern were considered as variables of interest. Analysis was performed using mean and standard deviation for quantitative variables,

and frequency and proportion for categorical variables. The statistical analyses were conducted using Statistical Package for Social Sciences (SPSS) version 20.0 and Microsoft Excel 2010.

Results: The study involved 882 patients, of which 399 were males (45.2%) and 483 were females (54.8%) with a male-to-female ratio of 0.8:1. The mean age of patients was four years, and a peak incidence was observed in children in the age group of 1-3 years, with 333 (37.8%) children. Microbial growth was observed in the urine of 325 (36.8%) patients. After excluding normal commensal perineal flora and insignificant bacteriuria, 233 samples had significant growth, with males accounting for 106 (45.5%) and females 127 (54.5%). The male-to-female ratio was 0.8 to 1. These samples mostly exhibited growth of aerobic bacteria (232, 99.6%) and *Candida albicans* (1, 0.4%). *E. coli* (106, 45.5%) was identified as the most predominant aetiological agent for paediatric UTI.

Conclusion: The results of this study suggest that it would be advisable for paediatricians in Idukki district to refrain from using Ampicillin to treat cases suspected to have UTI. Preventive measures should be advised to all patients, with emphasis on urinary hygiene during the monsoon and winter seasons.

Keywords: Antimicrobial, *Escherichia coli*, Multidrug resistant, Paediatric, *Staphylococcus aureus*

INTRODUCTION

The UTI is one of the most common infections among children. The risk of developing a UTI in childhood is approximately 1-3% in boys and 3-10% in girls [1]. UTI is defined as the growth of a significant number of organisms, i.e., more than 100,000 Colony-Forming Units (CFU)/mL of a single species in the urine sample in the presence of symptoms [2,3]. Timely and effective management of UTI with appropriate antibiotic administration is of immense importance to reduce the risk of long-term consequences in children [4].

A diagnosis of UTI is usually missed in infants and young children, as urinary symptoms are minimal and often non-specific in this age group. In children less than two years old, UTI is an important cause for fever without a focus. In neonates, it is usually a part of septicemia and can present with symptoms of fever, vomiting, lethargy, jaundice, and seizures. The typical presenting features in infants and young children include repeated fever, abdominal discomfort and pain, poor weight gain, and frequently, vomiting and diarrhoea. Among older children, the characteristic presenting features include dysuria, frequency, urgency, fever, and abdominal or flank pain. Adolescents may have symptoms restricted to the lower tract, and fever may not be present [2].

Previous similar studies from Kerala have described the microbial profile and pattern of antibiotic susceptibility from the northern,

western, and eastern parts of Kerala [5-7]. However, there is a need to determine whether empirical antibiotics that are being prescribed by paediatricians in Idukki district for paediatric UTI as part of standard practice are still relevant in the era of increasing antibiotic resistance and effective for this condition or are contributing to greater antibiotic resistance in the region. Additionally, there is currently no literature from Idukki district providing information on the microbial profile of UTI and any correlation with seasonal variations. Thus, this study will help guide clinicians in this geographical area towards more effective prescription of antibiotics and will also fill the remaining gaps in microbiological data from the central part of Kerala.

Hence, this study was conducted to determine the microbial profile and antibiotic sensitivity pattern in UTI from the urine of paediatric patients suspected to have UTI in Idukki district, Kerala, and also to find its correlation with seasonal variations.

MATERIALS AND METHODS

This clinical cross-sectional study was conducted from January 2019 to December 2021 at Al Azhar Medical College and Super Specialty Hospital, Thodupuzha, a tertiary care teaching hospital in Idukki district. The study was approved by the Institutional Ethical Committee (IEC No: AAMC/IEC/2018-2019/10). Informed consent

Case Report

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Progressive multifocal leukoencephalopathy in an adolescent child infected with human immunodeficiency virus: a case report

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ABSTRACT

Progressive multifocal leukoencephalopathy (PML) is an AIDS-defining neurologic disease caused by the JC polyoma virus. It typically occurs in immunocompromised individuals and without treatment, patients have a relentless downhill course. Early detection may improve the prognosis. A 12-year-old male child, a known HIV positive case with abdominal tuberculosis on ATT for 15 days, was brought to us in status epilepticus. After controlling seizures with phenytoin, the child was intubated and mechanically ventilated. Antiretroviral therapy (ART) was withheld temporarily and Anti-tuberculous therapy (ATT) was modified. Plain computerised tomography of the brain showed atrophy of brain parenchyma. Five days after the patient was shifted out of ICU, he again developed multiple episodes of convulsions. All reversible causes were investigated for and ruled out. MRI brain revealed features suggestive of PML with diffuse cerebral and cerebellar atrophy which was disproportionate to age. At present, the incidence of PML in children affected with HIV is still rare. There is still limited information regarding this spectrum of patients, especially their further management following diagnosis. Precise treatment protocols would help guide clinicians in regard to diagnosis and management of these complex cases.

Keywords: Progressive multifocal leukoencephalopathy, Human immunodeficiency virus, Adolescence, Computerized tomography, Magnetic resonance imaging

INTRODUCTION

PML is a severe, demyelinating disease of the central nervous system due to JC Papovavirus infection of the myelin-producing oligodendrocytes.^{1,2} The name JC virus is derived from the initials of the index patient. PML typically occurs in immunocompromised individuals, such as patients with congenital HIV infection or other conditions associated with impaired T-cell function.³ In the course of the infection, extensive myelin breakdown results in white matter destruction. Neurologic symptoms are unspecific and include focal neurological deficits and dementia.⁴ Without treatment, patients have a relentless downhill course. The disease is fatal within one year of

diagnosis in 90% of patients. Diagnosis can be established by the detection of JC virus DNA in cerebrospinal fluid.^{5,6}

Unlike in HIV-infected adults where acute neurologic deterioration secondary to PML is frequent, it is distinctly unusual in HIV-infected children.⁷ As a demyelinating disease, PML typically presents with altered mental status, motor deficits and ataxia. Prevalence of JCV specific antibodies increases rapidly during childhood, but the mode of transmission is unknown. PML is rare in HIV-infected children and even more uncommonly associated with immune reconstitution inflammatory syndrome (IRIS) in children.⁸ Here, we presented a rare



Inflammatory Pediatric Grisel Syndrome Secondary to Acute Adenoiditis: A Rare Case Report and Review of Literature

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Abstract

Grisel's syndrome is a rare condition characterized by non-traumatic atlantoaxial subluxation, typically secondary to inflammatory processes or surgical interventions in the head and neck region. The literature suggests a rare incidence of approximately 1:100,000,000 per year without gender predilection. The syndrome is often associated with an abnormal head posture and can lead to serious neurological complications if not diagnosed and treated promptly. This paper reviews the pathophysiology, clinical presentation, diagnostic approach, and management strategies for Grisel's syndrome, emphasizing the importance of early recognition to prevent morbidity. A 7-year-old boy presented with torticollis, head tilt to the left, nasal obstruction, purulent nasal discharge, headache, and fever for 3 days. Examination showed painful head tilt to left, with neck rotation to the right and no neurological deficits. Nasopharyngoscopy revealed inflamed adenoid tissue with purulent discharge. CT scan showed a Fielding type I rotatory atlantoaxial subluxation. He was treated with intravenous antibiotics, analgesics, and a cervical collar. He became symptomatically better after 7 days of treatment and on follow-up, he had fully recovered and returned to normal activities. We performed a systematic review of the literature following the preferred reporting items for Systematic reviews. Literature searches were conducted in web-based search engines using MeSH terms and key words. Grisel's syndrome, though rare, should be considered in pediatric patients presenting with painful torticollis following upper respiratory infections or head and neck procedures. Prompt diagnosis through radiographic imaging and early intervention can prevent severe complications and improve patient outcomes.

Keywords Inflammatory · Grisel's Syndrome · Atlantoaxial Subluxation · Torticollis

Introduction

Grisel's syndrome is characterized by atlantoaxial subluxation resulting from non-traumatic inflammatory conditions or surgical interventions in the head or neck region. Following inflammatory events or surgeries that necessitate extreme neck positions, muscle spasms in the neck can

lead to atlantoaxial subluxation. This syndrome was first documented in 1830 by Sir Charles Bell, who observed a patient with pharyngeal ulceration due to syphilis, which went undiagnosed and ultimately resulted in spinal cord compression and the patient's death [1, 2]. In 1930, French physician Grisel was the one who reported two cases of atlantoaxial subluxation associated with nasopharyngeal inflammation [2, 3] and hence, named after him. He attributed the condition to the increased laxity of the atlantoaxial joint ligaments, which are susceptible to extreme positioning and inflammatory processes. Risk factors for this syndrome include pediatric age group, surgical trauma, genetic disorders, and inflammatory conditions such as pharyngitis, adenotonsillitis, and upper respiratory infections. Recent abscesses in the peritonsillar or deep neck regions, otitis media, and surgeries involving extreme head positions also contribute to the risk. Surgical procedures like tonsillectomy, uvulectomy, adenoidectomy, and cleft lip and palate

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Microbiology of Active Mucosal Chronic Otitis Media and Shifting Trends in Etiology in Idukki, Kerala: A Prospective Observational Study

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Abstract

Introduction: Active mucosal Chronic Otitis Media (COM) is an important cause of preventable hearing loss particularly in the developing world and may have long term effects on early communication, language development, school performance and social interaction. **Aim:** This study aimed to isolate the bacterial flora in the middle ear of patients suffering from active mucosal COM in Idukki district of Kerala and also to study the antibiotic sensitivity pattern of these organisms to commonly used antimicrobial agents. **Methods:** This was a clinical prospective observational study conducted over a period of 3 years involving 137 patients of all age groups, who were clinically diagnosed with active mucosal COM. The inclusion criteria were patients presenting with a central tympanic membrane perforation and ear discharge (either unilateral or bilateral) of more than 3 months duration. **Results:** Microbial growth was seen in 128 (94.1%) patients with aerobic bacteria (83.5%), anaerobic bacteria (6.25%) and fungi (7%), of which *Pseudomonas aeruginosa* (39.8%) and *Staphylococcus aureus* (31.2%) were the most predominant etiological agents for active mucosal COM. *Pseudomonas aeruginosa* showed highest susceptibility to Piperacillin-Tazobactam combination and highest resistance to Ampicillin, while *Staphylococcus aureus* showed highest susceptibility to Gentamicin and highest resistance to Ampicillin and Ceftriaxone. **Conclusion:** The increasing trends in the antibiotic resistance pattern in *Staphylococcus aureus* over the years poses a threat to Idukki district, Kerala. Due to the irrational use of antimicrobials, multi-drug resistant bacterial strains are frequent, and so, there is need for continuous surveillance of the local microbiological profile of active mucosal COM.

Keywords Microbiology · Otitis media · Etiology · *Pseudomonas* · *Staphylococcus aureus*

Introduction

Chronic Otitis Media (COM) is a permanent abnormality of the pars tensa and pars flaccida mostly as a sequelae of previous acute otitis media, negative middle ear pressure or otitis media with effusion [1]. COM is an important cause of preventable hearing loss particularly in the developing

world and may have long term effects on early communication, language development, school performance and social interaction. Prevalence of COM in India ranges from 1.4 to 14.7% [2]. High rate of COM have been attributed to overcrowding, inadequate housing, poor hygiene, high rates of nasopharyngeal colonization with pathogenic bacteria and inadequate health care facility. A major risk factor that developing countries face in today's world is poverty. The urban to rural ratio of the disease is 1:2 and the poorer rural communities have the highest prevalence [3].

In COM, the bacteria may be aerobic i.e. *Pseudomonas aeruginosa*, *Escherichia coli*, *S. aureus*, *Streptococcus pyogenes*, *Proteus mirabilis*, *Klebsiella* species or anaerobic i.e. *Bacteroides*, *Peptostreptococcus*, *Propionibacterium*, etc. [4]. With improved isolation techniques, a significant number of isolates (20–50%) are likely to be anaerobic. Fungi are also thought to play a role in COM, especially in hot and humid regions and involve mainly *Candida* spp. and

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Review Article

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Cognitive biases in otolaryngology: a systematic narrative review

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ABSTRACT

Cognitive biases are systematic errors in thinking that significantly impact decision-making in surgery, including Otolaryngology. These biases contribute to misdiagnoses, inappropriate treatments and surgical errors, affecting patient outcomes. Despite growing recognition of cognitive biases in medicine, awareness and structured training in cognitive debiasing strategies remain limited. This narrative review systematically examines cognitive biases affecting surgical decision-making in Otolaryngology, categorizes their occurrence in different phases of surgical care and discusses mitigation strategies. A comprehensive literature search was conducted using multiple databases, including MEDLINE, Embase and Scopus, focusing on cognitive biases in surgical fields, particularly Otolaryngology. Studies that explored bias-related diagnostic errors, treatment decisions and mitigation strategies were included. Cognitive biases were classified based on their impact on the diagnostic workup, treatment phase and post-treatment follow-up. A total of 71 cognitive biases were identified as relevant to Otolaryngology. These biases were categorized according to their definitions, sources, examples in Otolaryngology and mitigation strategies. Targeted mitigation strategies, including structured decision-support tools, cognitive forcing strategies and multidisciplinary case discussions, were highlighted. Cognitive biases play a critical role in surgical decision-making in Otolaryngology, often leading to diagnostic and treatment errors. Increased awareness and implementation of cognitive debiasing strategies are essential to improving clinical reasoning and patient outcomes. Future research should focus on the effectiveness of structured interventions and the role of artificial intelligence in mitigating cognitive biases in surgery.

Keywords: Cognitive bias, Clinical decision making, Diagnostic errors, Otolaryngology, Operative surgical procedures

INTRODUCTION

Adverse events related to surgical care are increasing, many of which are considered preventable. Research

suggests that medical errors occur in approximately 1.7% to 6.5% of hospital admissions, contributing to substantial morbidity and mortality annually in the United States, with estimates reaching up to 100,000

ANALYSIS OF CAESAREAN SECTION RATES BY AUDITING ROBSON'S TEN GROUP CLASSIFICATION; A SINGLE CENTRE APPROACH

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ABSTRACT

Background: The rate of caesarean section is rising day by day and it has become a major health concern. Caesarean section is associated with both maternal and perinatal morbidity and mortality for present and future pregnancies. So, an audit of caesarean section is very important for analysing the indications for caesarean section and make recommendations for decreasing caesarean delivery rates. Robsons ten group classification system analyses the caesarean section rates and allow us to bring changes in our practice. **Materials and Methods:** This was a cross-sectional study conducted in al Azhar medical college, Thodupuzha, Idukki, Kerala. a single hospital from march 2024 to march 2025, study population included 739 pregnant women, in that 348 underwent caesarean section and they were grouped according to Robsons ten group classification system after collecting data and analysed. **Result:** Out of 348 women who underwent caesarean section the overall caesarean section rate was 47.09%.and according to Robsons 10 group classification system after grouping, group 5 (previous LSCS) had the maximum contribution followed by group 2 (nulliparous >37 weeks, induced) they contributed 33.33% and 26.15% respectively. The most common indication for caesarean section was previous LSCS followed by foetal distress followed by meconium-stained liquor which was 37.93%,19.25%,13.22% respectively. **Conclusion:** Defining optimal caesarean section rate in any setting won't be realistic due to different health status of patients. Robson's ten group classification system helps in auditing the caesarean section rates and helps us to analyse the major contributor of increasing caesarean section rates. Group 5 and group 2 contributed the maximum caesarean section rates .it is important to individualise every labour, and offering TOLAC for women with previous Lscs after proper patient selection and counselling regarding risks and benefits. The same time changing the norms for nonprogression of labour, proper training for obstetricians for CTG interpretation in case of foetal distress, trying amnioinfusion for meconium-stained liquor and encouraging obstetricians to perform versions when not contraindicated can reduce the cs rates.

INTRODUCTION

The rate of cesarean section is increasing worldwide and it is always going beyond who recommended rate of 15% for all deliveries.^[1] but increased cesarean section rate > 16% does not reduce maternal and neonatal mortality.^[2,3] At the same time there is increased chance of placenta accreta, retained placenta and uterine rupture with chances of peripartum hysterectomy when number of cesarean sections increases.^[4-6]

The factors responsible for increase in the cesarean section rates are maternal characteristics, socio economic and medicolegal causes and malpractice.^[7]

Other common factors include maternal request, hospital system factors, type of care provided by insurance and finally obstetrician's choice. All these factors are very complicated and non-separable.^[8]

Recent national family health survey (NFHS-5, 2019-2021) states that the cesarean section rate in India was increased from 17.2% to 21.5%. in many other parts of country, the rate of cesarean section was high such as in Telangana it is 60.7% and in Tamil Nadu it is 38.8% and in Kerala it is 42.4%. the lowest cesarean section rates found in Nagaland and it is 5.2%.^[9]

There are so many classification systems but there is no internationally accepted standardized classification system for comparison and monitoring of cesarean section rates. And those were not very

COMPARISON OF MULTIDIMENSIONAL INDICES OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE AS A PREDICTOR FOR FUTURE EXACERBATIONS

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ABSTRACT

Background: COPD is an important public health problem. Multidimensional indices of COPD could be used for predicting exacerbations, prognosis or death in patients. BODE index was initially used for assessing COPD patients. This index is found to be superior to FEV1 alone for predicting outcomes. **Aim:** To compare two multidimensional indices (BODE and DOSE) of COPD severity as predictors of future exacerbations. **Materials and Methods:** We conducted an observational prospective study in patients attending department of Pulmonology at Al Azhar Medical College Thodupuzha who satisfy the inclusion and exclusion criteria. 109 patients were assessed, proforma filled and his/her six minute walk distance was noted along with spirometry indices. Blood sample was taken to analyse CBC and AEC. Follow up proforma was filled by personal interview method at 3 months and 6 months. BODE and DOSE indices are calculated after the investigations at baseline, 3 and 6 months. **Result:** In our study, BODE and DOSE Indices had significant (p value < 0.001) association with exacerbation in 3 month and at 6 month. BODE, DOSE indices were compared for predicting exacerbations at 3 and 6 months. Receiver-operator curve for the both indices at baseline significantly predicts future occurrence of exacerbations. Among which BODE index is found to be superior to DOSE. **Conclusion:** The study highlights that BODE index is better than DOSE in predicting future exacerbations at 3 months and 6 months.

INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is one of the most common causes of death worldwide.^[1,2] It constitutes a serious public health problem. It is one of common cause of morbidity in the world. The COPD burden is increasing in coming years because of exposure to risk factors among population.^[3] It also leads to increasing economic and social burden.^[4,5] The prevalence of COPD and its mortality vary across countries.^[6,7] The prevalence of COPD was 11.8% and 8.5% for men and women respectively according to BOLD.^[8] Based on various large scale epidemiological studies, global prevalence of COPD was 10.3%.^[9,10] Around three million deaths are attributed due to COPD annually.^[11] Prevalence of COPD is generally higher in smokers than non-smokers, in people with age > 40 years. (9,12,13). The disease prevalence from the eight studies ranged from 2.4% in a cross-sectional study done by Johnson et al in Southern India, to 16.1% by Koul et al conducted in Northern

India.^[14,15] Total COPD cases in India were 55.3 million in 2016. In Kerala COPD cases was found to be 6.19% among the general population. A gender wise variation in prevalence was found in a number of systematic reviews which showed COPD in males and females was between 2% to 22% and 1.2 to 19% respectively.^[16]

Multidimensional indices of COPD were used to assess prognosis in COPD patients. BODE index is superior to FEV1 for predicting outcomes. Later on, many indices were introduced, out of which two indices are similar to the BODE, those are ADO and DOSE index, both are used for clinical care.^[17]

A diagnosis of COPD is considered in patients who had any exposure to risk factors which is associated with breathlessness, along with chronic cough or sputum, and/or spirometry showing post-bronchodilator FEV1/FVC < 0.7 .^[18]

According to GOLD 2023 guidelines, patients with a not fully reversible airflow limitation (FEV1/FVC < 0.7 post bronchodilation) measured by spirometry confirm diagnosis of COPD. Patients with

PREGNANCY OUTCOME OF ISOLATED OLIGOHYDRAMNIOS IN UNCOMPLICATED TERM PREGNANCIES: AN OBSERVATIONAL COMPARATIVE STUDY

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ABSTRACT

Background: Oligohydramnios and its outcome are a relevant issue related to mother and foetus. Purpose of this study is to establish the obstetric and perinatal outcome in pregnancy associated with isolated oligohydramnios as compared to women with normal liquor. **Materials and Methods:** This is an observational comparative study done at Al Azhar Medical College, Thodupuzha, Kerala, India on 50 pregnant women of 37 weeks of gestation or more and diagnosed to have oligohydramnios without any high-risk factors. Age, parity, gestational age matched patients without any high-risk factors and AFI >5 CM attending the opd /ward were taken as controls. In each group there were 25 subjects. After getting informed consent those who fulfilled the inclusion criteria were followed through the delivery and immediate neonatal outcome were assessed. Parameters like age parity, amniotic fluid volume, gestational age at delivery, mode of onset of labour, indication of Induction, methods of induction, need for augmentation of labour, CTG patterns, colour of liquor, mode of delivery, indications of caesarean section, distribution of APGAR SCORE were analysed. **Result:** There was significant difference in maternal outcome in patients with isolated oligohydramnios in the form of increased rates of induction of labour, augmentation of labour, meconium-stained liquor, non-reassuring fetal heart pattern, and caesarean section rates without any significant effects on neonatal outcome. **Conclusion:** Isolated oligohydramnios has increased rate of induction of labor, meconium-stained liquor, CTG abnormalities and caesarean section rates without significant increase in neonatal morbidity and mortality.

INTRODUCTION

Amniotic fluid is very important for growth of fetus in sterile environment, avoidance of external injury and reduction of impact of uterine contractions. Oligohydramnios is a condition where amniotic fluid volume is very low and it has been associated with poor pregnancy outcomes. It can cause increased risk of intrauterine growth restriction, meconium aspiration syndrome, severe birth asphyxia, low Apgar score and maternal morbidity in the form of increased risk of induction of labor, operative interventions etc.^[1,2] Thus evaluation of amniotic fluid has become an integral part of antenatal fetal assessment.

According to some studies oligohydramnios has significant impact on maternal and neonatal outcome while some others observed that isolated oligohydramnios had no adverse effect on perinatal

outcome.⁵ The incidence of oligohydramnios with general reporting rate is 1 and 3 percent. Oligohydramnios per se does not lead to maternal complications but its underlying cause may. Irrespective of the cause, mother is at risk of caesarean delivery for fetal distress secondary to growth restriction, malformations or umbilical cord compression.^[3-5]

Chauhan and associates performed a meta-analysis of 18 studies in which they found that oligohydramnios has increased risk of caesarean section for fetal distress and increased risk of low APGAR score.^[6] Baron et al reported that cord compression during labor is very common in oligohydramnios and it can cause variable decelerations and increased rate of caesarean section.^[7] Divon et al studied 638 women with post term pregnancy in labor and found that only those

PREGNANCY OUTCOME OF ELECTIVE AND EMERGENCY CAESAREAN SECTION IN UNCOMPLICATED TERM PREGNANCIES: AN OBSERVATIONAL COMPARATIVE STUDY

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Abstract

Background: The most performed surgical procedure in obstetrics is cesarean section. Purpose of this study is to establish the maternal and neonatal outcome after emergency and elective cesarean section, and identifying preventable risk factors wherever possible. **Materials and Methods:** This is an observational comparative study done at Al Azhar medical college Thodupuzha, Kerala, India on 185 pregnant women who underwent cesarean section and who fulfilled the inclusion criteria in the department of obstetrics and gynecology. After taking consent patients were identified into two groups based on type of cesarean section that is elective or emergency. In elective cesarean section group 79 women were studied whereas emergency cesarean section group 106 women were studied. Maternal parameters like indication of cesarean section, intra operative and post-operative complications were analyzed. neonatal parameters like respiratory distress syndrome, NICU admissions, APGAR score were analyzed. **Result:** Most number of cases in elective cesarean section group underwent cesarean section for prior cesarean section for maternal request (89%) and for emergency cesarean section for fetal distress (32%). Intraoperative, post-operative complications and adverse neonatal outcome were more with emergency CS group. **Conclusion:** Adverse maternal and neonatal outcome was found to be more in emergency cesarean section compared to elective cesarean section. Inducing labor with proper indication, assessment of cephalopelvic disproportion and intrapartum monitoring using partogram are some of the preventable factors identified to reduce adverse outcome.

INTRODUCTION

The most performed major surgical procedure in obstetrics is caesarean section. The common indications are prior caesarean section, uterine dystocia, abnormal presentation and foetal distress. On the basis of timing and urgency of performing, caesarean section can be classified into emergency and elective. elective caesarean section is planned procedure whereas emergency caesarean section is when it is done in an obstetric emergency where complication of pregnancy suddenly arises during the process of labor.^[1] most of the caesarean sections are being performed for the indications of prior caesarean section.^[2] These women are more likely to undergo caesarean section in subsequent pregnancies for which risks are even greater. The acceptable rate of caesarean section is 5-15% according to WHO but in most of the countries this threshold has been crossed.^[3] The indications for

rise in caesarean section is anxiety of mother about the delivery, family's request for baby's delivery at particular time, mothers wish to have a caesarean section on account of precious pregnancy,^[4] rise in average maternal age, decrease in vaginal breech delivery, decrease in instrumental delivery, increase in labour induction, fear of litigation by the obstetrician etc.

In India the highest rate is in Telangana (58%) followed by Andhra Pradesh (40.1%) and Kerala (35.8%). The lowest rate of caesarean section is seen in Nagaland (5.8%) followed by Bihar (6.2%).^[5] Caesarean section is a surgical procedure with numerous complications for both mother and baby such as postpartum haemorrhage, surgical site infections, need for blood transfusion, endometritis, trauma to viscera, prolonged hospital stay etc. for the mother and respiratory distress syndrome, TTN (transient tachypnea of new born), hypothermia, foetal injury like skin laceration, cephalhematoma,

PREGNANCY OUTCOME OF MECONIUM-STAINED AMNIOTIC FLUID IN UNCOMPLICATED TERM PREGNANCIES: A CASE CONTROL STUDY

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Meconium-Stained Liquor, Maternal Outcome, Perinatal Outcome.

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Abstract

Background: Evaluation of fetal wellbeing during labor is on the basis of fetal activity and color of liquor in labor in vertex presentation. When there is meconium-stained liquor during labor it could be a sign of fetal distress and response to hypoxic insult. **Materials and Methods:** This is a hospital-based case control study conducted at AL Azhar Medical College, Thodupuzha, Kerala, over a period of one year. All uncomplicated pregnant women of 37-42 weeks of gestation who had meconium-stained amniotic fluid following spontaneous rupture of membrane or artificial rupture of membrane were included in the study. Grading of MSL, FHR abnormality, mode of delivery, APGAR score, NICU admission were measured. **Result:** A total of 339 pregnant women were studied, in that 113 had MSL and taken as study group and rest 226 as control group. In this 52% had abnormal FHR, 28% had spontaneous vaginal delivery, 22% had instrumental delivery, 50 % had cesarean section. Rate of low APGAR score was higher in study group. 47% babies had NICU admissions. Incidence of meconium aspiration syndrome in our study was 1.2%. **Conclusion:** When fetal scalp PH and umbilical cord lactate estimation facilities are not available association of MSL with abnormal FHR should be taken as fetal distress and consideration of early operative intervention are necessary.

INTRODUCTION

Fetal wellbeing is evaluated mainly on the basis of fetal movements, FHR pattern, and color of amniotic fluid. Presence of meconium-stained liquor is always considered as a sign of fetal distress, although the real cause is not known but it is considered as a physiological maturity of fetus also.^[1,2] When there is meconium aspiration it neutralizes the surfactant action and promote inflammation of lung tissues and sometimes it can lead to pulmonary vascular and pulmonary hypertension. So there are conflicting outcomes have been reported when there is meconium stained liquor which differs with degree of meconium staining.^[3]

One of the main reason for increased operative deliveries are due to MSAF. 1 When there is presence of meconium below the vocal cord is known as meconium aspiration syndrome. 4 According to previous studies only 5% of neonate born through meconium stained amniotic fluid develop MAS.^[4] Many studies suggest that perinatal mortality is less with MSAF. But there is significant association between the consistency of meconium

and abnormal FHR patterns, increased rate of cesarean section and Low APGAR score.^[1,5]

So the present study was done to find out the maternal and perinatal outcome with meconium stained amniotic fluid at term pregnancies as the direct and indirect effect of MSL remain uncertain, but it should be considered as predictor of maternal and perinatal morbidity and mortality.^[2]

MATERIALS AND METHODS

It is a hospital-based case control study conducted in the Department of obstetrics and gynecology, Al Azhar Medical College, Thodupuzha, Kerala, from march 2020 to march 2021. Study population comprised of a total of 339 pregnant women, in that 113 patients had meconium-stained liquor and taken as study group and rest 226 patients had normal liquor and taken as control group after spontaneous or artificial rupture of membrane. Meconium-stained liquor was graded as thick MSL and thin MSL and were monitored continuously with CTG. MSL is considered thick when the fluid is green in color, viscous, tenacious and containing large amount of particulate material and thin if the fluid is

Thoracic Radiological Abnormalities in Coir Workers with Respiratory Symptoms in a Tertiary Care Center in Kerala

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Abstract

Background: Coir industry provides a major share of occupation to the natives of the Alappuzha district of Kerala in the traditional sector and huge amount of coir dust is produced during the manufacturing process. **Ob** The objectives of the study were to determine the proportion of various thoracic radiological abnormalities among symptomatic coir and the factors associated with it. **Design:** The study was a hospital-based descriptive study, conducted in the Department of Pulmonary Medicine, Government T.D Medical College, Alappuzha, over 12 months. One hundred and seventy-nine coir workers with various types of respiratory symptoms attending the pulmonary medicine outpatient department were selected based on inclusion and exclusion criteria. Detailed occupational history was taken using a semi-structured questionnaire. Clinical examination was performed. Spirometry and digital X-ray chest were taken for all patients. High-resolution computed tomography (HRCT) thorax was taken in those with chest X-ray abnormalities. **Results:** Among the 179 symptomatic coir workers, 101 (56.4%) had abnormal chest X-ray findings; the most common findings were reticulonodular shadows 58 (32.4%), followed by bronchiectasis 42 (23.5%). About 93 (92%) had abnormal HRCT findings. The most common HRCT finding was ground-glass opacity 45 (44.6%), followed by bronchiectasis at 44 (43.6%). Reticulations were noted in 40 (39.6%), mosaic patterns in 34 (33.7%), and fibrosis in 33 (32.7%). Female gender was statistically significantly associated with radiological abnormality with $P = 0.0001$. **Conclusion:** We conclude that a significant fraction of coir workers is suffering from chronic respiratory symptoms and a significant proportion of symptomatic coir workers has thoracic radiological abnormalities. 10 percent of patients had typical radiological findings of hypersensitivity pneumonitis.

Keywords: Coir, radiological abnormalities, hypersensitivity pneumonitis

INTRODUCTION

Coir industry provides a major share of occupation to the natives of Alappuzha district of Kerala in the traditional sector and it involves both domestic and factory work. Huge amount of coir dust is produced during the manufacturing process and various types of chemicals are also been used for this process. The coir work-induced nasobronchial allergy, pulmonary function abnormalities, and various thoracic radiological abnormalities have been detected in a pilot study. However, there are only limited studies on the thoracic radiological abnormalities of coir workers. This study aims to determine the proportion of thoracic radiological abnormalities among symptomatic coir workers and to estimate various factors associated with it, which may help to recognize potential occupational lung disease risks and can lead to more targeted medical management

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METHODOLOGY

The study was a hospital-based descriptive study, conducted in the Department of Pulmonary Medicine, Government T.D. Medical College, Alappuzha, over 12 months. One hundred and seventy-nine coir workers with various types of respiratory symptoms attending the pulmonary medicine outpatient department were selected based on inclusion and exclusion criteria. Any coir worker with respiratory symptoms who attends the outpatient unit in the Department of Pulmonary

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Intravenous Granisetron to reduce Propofol induced pain: A Randomised Controlled Trial

Raju N, Thomas NT, Jacob LN, Abraham JM¹,

Abstract: **Introduction:** Propofol a routinely used intravenous induction agent for general anaesthesia is known to cause pain on injection due to its lipid emulsion property. Various methods have been tried to address propofol induced pain but have produced variable results. Pretreatment with Ondansetron a 5-HT₃ antagonist has been shown to alleviate pain on propofol injection.

Aim: To compare the efficacy of intravenous granisetron versus a placebo (normal saline) to reduce pain on propofol injection.

Materials and Method: This randomised double blinded trial included 18-60 year old American Society of Anaesthesiologists Physical Status (ASA PS) I and II patients for elective surgery under general anaesthesia. 110 patients were randomly allocated into two groups of 55 each. They received either 2ml granisetron (1mg/ml) or 2ml 0.9% saline. After receiving the test or control drug, patients were asked to score the pain on a four point categorical scale.

Results: Pain in the control group was 92.7% when compared to 10.9% in the intervention group ($p < 0.0001$). The severity of pain was also less in the intervention group pre-treated by 2ml of granisetron.

Conclusion: We found that intravenous Granisetron was effective in reducing pain on propofol injection

Keywords: Propofol, Granisetron, pain.

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INTRODUCTION

Propofol is the most commonly used intravenous induction agent in current anaesthesia practice. Its rapid onset and short duration of action makes it an ideal agent for day care procedures although propofol induced pain remains a cause for concern. (1)

Evidence reveals that among low morbidity outcomes of current clinical anaesthesiology pain during injection of propofol ranks as the 7th most important problem. (2)

The incidence of pain on propofol injection varies between 28-90% in adults and 28-85% in children. (3) Granisetron, a 5HT₃ receptor antagonist is given as premedication to prevent post operative nausea and vomiting after general anaesthesia. It has been shown that Ondansetron can relieve pain after propofol injection without significant adverse effects. (4) Use of Granisetron in reducing pain on propofol administration has also been demonstrated in a study done in North India. (5) This study would help in assessing the effectiveness of Granisetron in a different population.

The degree of patient satisfaction with perioperative care is assuming importance as a determinant of anaesthetic outcome. Since patients presenting for surgery are already anxious and stressed it is important to give them a pain free anaesthesia.

The aforementioned facts highlight the importance of addressing propofol induced pain to ensure better clinical outcome. The use of Granisetron will help reduce pain associated with propofol injection with added advantage of preventing post operative nausea and vomiting.

A Cross-sectional Study to Assess the Need for Standardisation of the Modified Mallampati and Friedman's Scoring System

JITHIN MATHEW ABRAHAM, LENO NINAN JACOB, SANGEETHA MERRIN VARGHESE, ASHU SARA MATHAI

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ABSTRACT

Introduction: The Modified Mallampati (MM) grading and Friedman's Tongue Position (FTP) scores are two major scoring systems used to evaluate the oropharyngeal space. However, the current descriptions of performing these scores do not specify the route of breathing taken by the patient during the examination. The dynamic changes in the tongue and palate, in relation to the route of breathing, may contribute to the high interobserver variability in MM scoring.

Aim: To explore the differences in MM scores and Friedman's scores obtained during mouth breathing and nose breathing in order to standardise the scoring system.

Materials and Methods: A community-based cross-sectional study was conducted at the Departments of Anaesthesiology and Community Medicine at Believers Church Medical College Hospital in Central Kerala, India between April 2022 and October 2022, on 702 adults. MM scores and FTP scores were recorded separately for each person during mouth breathing and nose breathing. Socio-demographic variables such as age, gender,

and Body Mass Index (BMI) were also collected. The data was analysed using the Z-test for proportions.

Results: The mean age of the study participants was 3.58 ± 16.42 years. The majority of the participants were females (69.2%), and more than half (59%) were above 50 years of age. Out of the 135 participants with an MM Score-1 during mouth breathing, 99 (73.3%) had higher scores during nose breathing. For the 196 individuals with an MM Score-2 during mouth breathing, 87 (44.3%) had higher scores during nose breathing. Similarly, out of the 220 people with an MM score of -3 during mouth breathing, 106 (48.2%) had a Score-4 during nose breathing. A similar pattern was observed for the FTP scores.

Conclusion: The present study demonstrates significant variability in MM and FTP scores obtained during oral and nasal breathing, highlighting the need to standardise the route of breathing during examination. The study suggests that advising patients to breathe through the mouth may relax the tongue and improve the predictive value of MM grading.

Keywords: Friedman's tongue position, Mallampati score, Nasal breathing, Oral breathing

INTRODUCTION

Even in these modern times with advanced airway gadgets, the ability to predict difficult intubations is of significant importance in the practice of anaesthesia, as failure to do so could lead to life-threatening airway emergencies. The 2013 American Society of Anaesthesiologists guidelines for evaluation and management of the difficult airway recommend that, whenever feasible, an airway history and physical examination be conducted in all patients before the initiation of anaesthetic care. The airway physical examination prioritises several clinical elements, including the Mallampati classification (MM). The Mallampati grading has become a routine and standard technique for airway assessment over the years. Its main advantage is the ease and simplicity as a bedside test [1].

The Mallampati grade (score/classification) was first developed by Jeshagiri Mallampati in 1985 [2]. As part of the examination, patients are asked to sit in a relaxed position with their heads in a neutral position. Then they are instructed to open their mouths fully and stick out their tongues as much as possible. A simple three-grade classification based on the visualisation of the tonsillar pillars, uvula, and soft palate is used to establish the correlation between Mallampati grade and the view of the airway on direct laryngoscopy [1].

The first modification of the Mallampati grade (score/classification) was reported by Samsoon GL and Young JR as they retrospectively reviewed a cohort of difficult intubations at their institution [3]. They added an additional classification, grade 4, where only the hard palate was able to be visualised. The MM system has subsequently replaced the original scoring system universally in clinical practice and is therefore used in the present study.

Friedman M et al., performed a further modified version of the Mallampati examination where they asked the patient to sit upright and relaxed with their head in the neutral position, similar to the MM grading, and had them open their mouth without sticking out their tongue. This was initially published as an "MM" grade but later changed the term to Friedman's Tongue Position (FTP). It was used as a screening tool for Obstructive Sleep Apnoea (OSA) [4].

The Mallampati grading system remains the most popular bedside screening test used for predicting difficult airway and is included in nearly all multivariable scores aimed at predicting Difficult Tracheal Intubation (DTI) [5-9]. The FTP test has been shown to correlate with objective parameters in the prediction of OSA [10]. These tests depend on the visual inspection of pharyngeal structures seen in patients in the sitting position with the head in a neutral position, mouth open as widely as possible, and the tongue extended to its maximum in MM and tongue inside the mouth for FTP, without phonation. However, several drawbacks exist, as demonstrated by poor reproducibility and high rates of interobserver variability [11-14].

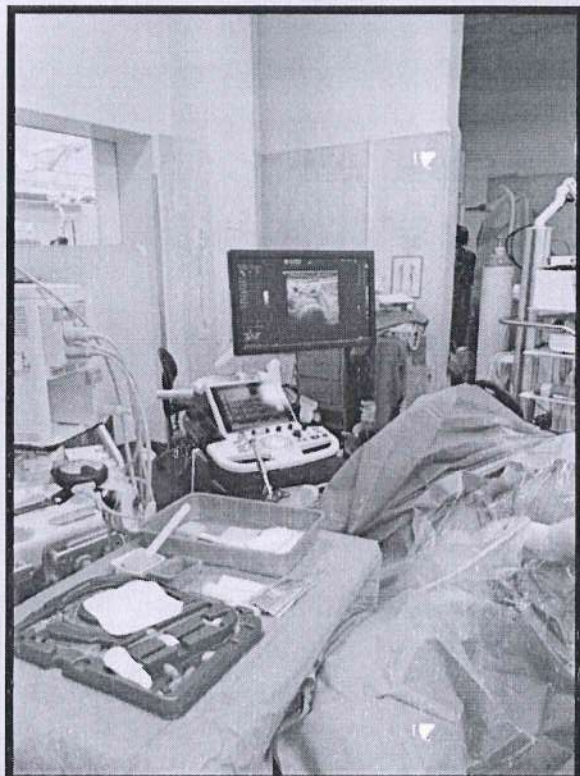
One factor contributing to this might be the lack of clarity regarding the type of breathing (oral/nasal) the patient is expected to assume during the assessment. Both the MM and the Friedman tongue position tests are vague in terms of the dynamic variations associated with patients' breathing and the positions of the oropharyngeal structures during the assessment [15]. In a preliminary pilot study of 30 patients, the authors found that patients assuming nasal respiration during MM assessment had a MM assessment had a higher score compared to those with oral breathing. The present study is part of a larger study on MM scoring, where its role in predicting OSA is also being studied [16]. Therefore, the present

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The role of ROX index–based intubation in COVID–19 pneumonia: a cross–sectional comparison and retrospective survival analysis

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Background: Coronavirus disease 2019 (COVID–19) patients with acute respiratory failure who experience delayed initiation of invasive mechanical ventilation have poor outcomes. The lack of objective measures to define the timing of intubation is an area of concern. We investigated the effect of timing of intubation based on respiratory rate–oxygenation (ROX) index on the outcomes of COVID–19 pneumonia.

Methods: This was a retrospective cross–sectional study performed in a tertiary care teaching hospital in Kerala, India. Patients with COVID–19 pneumonia who were intubated were grouped into early intubation (within 12 hours of ROX index <4.88) or delayed intubation (12 hours or more hours after ROX <4.88).

Results: A total of 58 patients was included in the study after exclusions. Among them, 20 patients were intubated early, and 38 patients were intubated 12 hours after ROX index <4.88. The mean age of the study population was 57±14 years, and 55.0% of the patients were male; diabetes mellitus (48.3%) and hypertension (50.0%) were the most common comorbidities. The early intubation group had 88.2% successful extubation, while only 11.8% of the delayed group had successful extubation ($P<0.001$). Survival was also significantly more frequent in the early intubation group.

Conclusions: Early intubation within 12 hours of ROX index <4.88 was associated with improved extubation and survival in patients with COVID–19 pneumonia.

Key Words: airway extubation; artificial respiration; COVID–19; cross–sectional study; intratracheal intubation; survival analysis

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INTRODUCTION

The clinical presentation of coronavirus disease 2019 (COVID–19) ranges from asymptomatic illness to severe acute respiratory distress syndrome (ARDS). Approximately 20%–25% of patients with COVID–19 admitted to the hospital require critical care management [1]. Management of hypoxemia and respiratory failure in these patients has presented new

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Radiology-Guided Selection and Surgical Outcomes in ACR TI-RADS 3 Thyroid Nodules: Comparing Total Thyroidectomy under General Anesthesia versus Cervical Block

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Abstract

Background: Thyroid nodules classified as ACR TI-RADS 3 are considered mildly suspicious but often require surgical excision when symptomatic or enlarging. While general anesthesia (GA) is the conventional choice for thyroidectomy, cervical block anesthesia (CBA) has gained attention for its safety, reduced postoperative morbidity, and faster recovery. Comparative data on outcomes in this specific patient subgroup remain limited. **Material and Methods:** A total of 120 patients (mean age: 44.7 ± 11.2 years; 32 males, 88 females) with TI-RADS 3 nodules undergoing total thyroidectomy were enrolled. Patients were randomized into two groups: Group A ($n=60$) underwent thyroidectomy under GA, and Group B ($n=60$) under CBA. Parameters assessed included operative duration, intraoperative blood loss, postoperative pain using a visual analogue scale (VAS), recovery time, hospital stay, and complications. Statistical analysis was performed using the chi-square test and independent t-test, with $p < 0.05$ considered significant. The mean operative time (98.4 ± 15.2 min vs. 95.1 ± 13.9 min, $p = 0.27$) and intraoperative blood loss (82.5 ± 20.6 mL vs. 79.3 ± 19.8 mL, $p = 0.39$) were comparable between Group A and Group B. However, Group B demonstrated significantly lower postoperative VAS scores at 6 hours (3.8 ± 1.1 vs. 5.2 ± 1.3 , $p < 0.001$), shorter recovery time (9.2 ± 2.8 hours vs. 14.6 ± 3.2 hours, $p < 0.001$), and reduced hospital stay (2.4 ± 0.9 days vs. 3.6 ± 1.2 days, $p < 0.001$). Complication rates, including transient hypocalcemia and recurrent laryngeal nerve palsy, were similar between groups. Patient satisfaction was significantly higher in the CBA group ($p < 0.01$). **Conclusion:** Radiology-guided selection of ACR TI-RADS 3 nodules provides accurate indications for surgery. For total thyroidectomy in these patients, cervical block anesthesia is as safe as general anesthesia and offers superior outcomes regarding postoperative pain, recovery speed, hospital stay, and patient satisfaction. CBA represents a viable and often preferable alternative to GA in appropriately selected patients.

Keywords: ACR TI-RADS 3, thyroid nodule, total thyroidectomy, general anesthesia, cervical block, surgical outcomes.

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INTRODUCTION

Thyroid nodules are a common clinical entity, detected in up to 65% of the general population through high-resolution ultrasound.^[1] The vast majority of these nodules are benign; however, a systematic approach is necessary to identify the 7-15% that harbor malignancy.^[2] The American College of Radiology (ACR) Thyroid Imaging, Reporting and Data System (TI-RADS) has emerged as a standardized, ultrasound-based risk stratification system that categorizes nodules from benign (TI-RADS 1) to highly suspicious (TI-RADS 5).^[3] ACR TI-RADS 3 nodules, characterized as "mildly suspicious," have a low risk of malignancy ($<5\%$) and are typically round, isoechoic or hyperechoic, and lack highly suspicious features.^[4]

While surveillance is often the initial management strategy for TI-RADS 3 nodules, surgical intervention becomes necessary for various reasons, including compressive symptoms (dysphagia, dyspnea), cosmetic concerns, significant interval growth, or patient preference.^[5] In such

cases, total thyroidectomy is frequently performed, especially in the context of multinodular goiter or contralateral nodules, to provide a definitive therapeutic and diagnostic solution and avoid the need for reoperation.^[6]

The standard anesthetic technique for thyroid surgery has historically been general anesthesia (GA) with endotracheal intubation. This approach provides complete control of the airway, muscle relaxation, and immobility, ensuring optimal surgical conditions.^[7] However, GA is associated with several

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The Use of Intrathecal Dexmedetomidine and Fentanyl as Adjuvants to Bupivacaine – A Cross-sectional Analytical Study

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Abstract

Introduction: In spinal anesthesia, dexmedetomidine and fentanyl are frequently added as adjuncts to local anesthetics to extend analgesia and enhance postoperative pain management. The purpose of this prospective observational study was to evaluate the effectiveness of intrathecal fentanyl and dexmedetomidine as adjuvants to bupivacaine for the management of postoperative pain in patients having lower abdominal operations. **Methods:** Eligible patients who received intrathecal anesthetic with bupivacaine plus either fentanyl (Group F) or dexmedetomidine (Group D) were studied. Age, gender distribution, the American Society of Anesthesiologists classification, and length of operation were recorded as baseline variables. The longest length of the sensory block, the highest sensory level attained, the time it took to reach the maximum sensory level, and the results of the postoperative pain were measured as aspects of the sensory block. **Results:** Comparable levels of sensory block were attained by the dexmedetomidine and fentanyl groups. There was no significant difference in the maximum sensory level attained ($P = 0.89$) or in the time from injection to the greatest sensory level ($P = 0.57$). Nevertheless, as demonstrated by a longer time for two-segment regression from the maximum sensory level ($P < 0.001$) and a delayed time to sensory regression to S1 ($P < 0.001$), dexmedetomidine demonstrated a considerably longer duration of sensory block compared to fentanyl. In addition, compared to fentanyl, dexmedetomidine was linked to a lower total analgesic dose in the first 24 h postoperatively ($P = 0.03$) and a noticeably longer duration to rescue analgesia ($P < 0.001$). **Discussion:** Our study suggest that intrathecal dexmedetomidine provides prolonged sensory block duration and reduced postoperative analgesic requirements compared to fentanyl when used as an adjuvant to bupivacaine for intrathecal anesthesia. These results have significant implications for improved pain management and enhanced patient outcomes in various surgical procedures.

Keywords: Bupivacaine, dexmedetomidine, fentanyl, sensory block, spinal anesthesia

INTRODUCTION

The management of chronic pain remains an important challenge in medical practice, with postoperative pain being a vital concern. Inadequate pain relief not only affects patient comfort but can also lead to prolonged hospital stays, delayed recovery, and complications such as chronic pain syndromes.^[1] Among various modalities for pain control, regional anesthesia techniques have gained importance during recent times, due to their efficacy in providing targeted analgesia while minimizing systemic side effects.^[2]

Spinal anesthesia is widely preferred for lower abdominal surgeries due to its cost-effectiveness and simplicity of administration. Nevertheless, effective postoperative pain management remains a significant challenge due to the relatively short duration of action associated with spinal anesthesia using solely local anesthetics.^[3] Intrathecal

administration of local anesthetics is a widely used technique for postoperative pain management, particularly in lower abdominal and lower limb surgeries. To address this issue, various adjuvants, including clonidine, midazolam, and others, have been investigated to extend the duration of spinal anesthesia.^[4] Bupivacaine, a long-acting local anesthetic, is frequently employed in intrathecal anesthesia owing to its potency and duration of action. However, despite the effectiveness of bupivacaine, achieving optimal postoperative

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The Use of Intrathecal Dexmedetomidine and Fentanyl as Adjuvants to Bupivacaine – A Cross-sectional Analytical Study

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Abstract

Introduction: In spinal anesthesia, dexmedetomidine and fentanyl are frequently added as adjuncts to local anesthetics to extend analgesia and enhance postoperative pain management. The purpose of this prospective observational study was to evaluate the effectiveness of intrathecal fentanyl and dexmedetomidine as adjuvants to bupivacaine for the management of postoperative pain in patients having lower abdominal operations. **Methods:** Eligible patients who received intrathecal anesthetic with bupivacaine plus either fentanyl (Group F) or dexmedetomidine (Group D) were studied. Age, gender distribution, the American Society of Anesthesiologists classification, and length of operation were recorded as baseline variables. The longest length of the sensory block, the highest sensory level attained, the time it took to reach the maximum sensory level, and the results of the postoperative pain were measured as aspects of the sensory block. **Results:** Comparable levels of sensory block were attained by the dexmedetomidine and fentanyl groups. There was no significant difference in the maximum sensory level attained ($P=0.89$) or in the time from injection to the greatest sensory level ($P=0.57$). Nevertheless, as demonstrated by a longer time for two-segment regression from the maximum sensory level ($P<0.001$) and a delayed time to sensory regression to S1 ($P<0.001$), dexmedetomidine demonstrated a considerably longer duration of sensory block compared to fentanyl. In addition, compared to fentanyl, dexmedetomidine was linked to a lower total analgesic dose in the first 24 h postoperatively ($P=0.03$) and a noticeably longer duration to rescue analgesia ($P<0.001$). **Discussion:** Our study suggest that intrathecal dexmedetomidine provides prolonged sensory block duration and reduced postoperative analgesic requirements compared to fentanyl when used as an adjuvant to bupivacaine for intrathecal anesthesia. These results have significant implications for improved pain management and enhanced patient outcomes in various surgical procedures.

Keywords: Bupivacaine, dexmedetomidine, fentanyl, sensory block, spinal anesthesia

INTRODUCTION

The management of chronic pain remains an important challenge in medical practice, with postoperative pain being a vital concern. Inadequate pain relief not only affects patient comfort but can also lead to prolonged hospital stays, delayed recovery, and complications such as chronic pain syndromes.^[1] Among various modalities for pain control, regional anesthesia techniques have gained importance during recent times, due to their efficacy in providing targeted analgesia while minimizing systemic side effects.^[2]

Spinal anesthesia is widely preferred for lower abdominal surgeries due to its cost-effectiveness and simplicity of administration. Nevertheless, effective postoperative pain management remains a significant challenge due to the relatively short duration of action associated with spinal anesthesia using solely local anesthetics.^[3] Intrathecal

administration of local anesthetics is a widely used technique for postoperative pain management, particularly in lower abdominal and lower limb surgeries. To address this issue, various adjuvants, including clonidine, midazolam, and others, have been investigated to extend the duration of spinal anesthesia.^[4] Bupivacaine, a long-acting local anesthetic, is frequently employed in intrathecal anesthesia owing to its potency and duration of action. However, despite the effectiveness of bupivacaine, achieving optimal postoperative

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Original Research Article

RELATIONSHIP BETWEEN BASELINE HEART RATE AND POST SPINAL SUBARACHNOID BLOCK HYPOTENSION IN PATIENTS UNDERGOING CESAREAN SECTION – A RANDOMIZED DOUBLE BLIND STUDY

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Keywords:

HR – Heart Rate, BP – Blood Pressure,
 LSCS – Lower Segment Cesarean
 Section, SAB – Sub Arachnoid Block,
 T4-Thoracic Vertebrae, L3- Lumbar
 Vertebrae.

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Abstract

Background: To study the relationship between baseline heart rate and post spinal subarachnoid block hypotension in patients undergoing cesarean section. **Materials and Methods:** After obtaining approval from the ethics committee of Sri Ramachandra Medical College, 30 pregnant patients were selected for the study. The patients were divided into three groups based on the average baseline heart rate. Group I with baseline heart rate < 80 beats/min. Patients with baseline heart rate between 80 – 90 beats/min and > 90 beats/min were grouped into Group II and Group III respectively. **Result:** All the 30 patients completed the study. Among them 12 patients belonged to Group I (heart rate < 80beats/min). Group II (heart rate 80- 90beats/min) and Group III (heart rate > 90beats/min) had 10 patients and 8 patients respectively. Frequency of distribution of the number of patients is shown in the table (Table I). Group I had 40% of patients. Group II had 33.3% and Group III had 26.7% of patients. Fig I shows the distribution of patients in the three groups. **Conclusion:** From our study, we conclude that baseline heart rate can be used as a predictor of hypotension in cases of post spinal subarachnoid block in parturients. As the baseline heart rate increases, chances of hypotension also increase proportionately requiring more ephedrine to treat it. It does not depend upon the age, weight and height of the patients.

INTRODUCTION

Regional anaesthesia is the most commonly administered anaesthesia technique in obstetrics. Among them spinal anaesthesia is the commonest. The term 'Spinal Anaesthesia' was coined by Leonard Corning in 1885. Cocaine was the first local anesthetic. It was first introduced into practice in eye surgeries by Carl Koller in 1884. It was used in surgery as a spinal anesthetic by August Bier in 1899.

Main advantages of spinal anaesthesia for cesarean delivery are its simplicity, speed, reliability and minimal fetal exposure to depressant drugs². Mother remains awake during the surgery. Risk of aspiration is reduced. Non-behavioral assessment of neonates is better with spinal anaesthesia than general anaesthesia. A denser sacral nerve root blockade, more motor blockade and less shivering are the

other features of spinal anaesthesia when compared to epidural anaesthesia.

T4 level block is the target for spinal anaesthesia in cesarean delivery. Lidocaine 60-75mg or bupivacaine 10-15mg can be introduced into subarachnoid space at L3-L4 or L2-L3 interspace. Fentanyl 10-20 micrograms may be added to augment the sensory blockade. Prolongation of the blockade may be brought into effect by epinephrine. Disadvantages include hypotension, intraoperative nausea and vomiting, possibility of post dural puncture headache and limited duration of action³. Maternal hypotension for more than 2 minutes may adversely affect the Apgar scores. Prehydration with lactated Ringer's solution, maintaining left uterine displacement during anaesthesia and prophylactic administration of ephedrine can decrease the incidence of hypotension.

Research Article

Estimation Of Fetal Weight a Simple Formula

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Abstract: Background: A quick and easy method of estimation of foetal weight in utero is an obvious benefit to the clinician practicing modern obstetrics as the perinatal mortality and morbidity is affected not only by foetal age but also by the foetal weight. **Materials and Methods:** symphysiofundal height (SFH) and abdominal girth (AG) was measured in 196 pregnant women attending the OPD or Maternity ward at term. The station of the head was found and various methods of calculation of baby weight was used to estimate the baby weight. The actual weight of the baby was measured at the time of birth and statistical analysis done. **Results:** All the method of clinical estimation of foetal weight, overestimated the actual birth weight by 1 to 2 gms / 100gms (table I). Estimation of foetal weigh by different method shows that the clinical method is the best method (table ii, & table iii). 38% of babies could be estimated within 100 gms of their actual birth weight (table ii) and 64% of fetuses could be estimated within 10% of their actual birth weight (table iii). This was better than that obtained by Tivari and Sood (1989) ⁷ which was 59% by the same method, where the correct was not defined as within 10% of actual birth weight. **Conclusion:** The sample comprised of 195 patients. The age group of the patients were from 18 to 38 yrs. There were 38 primigravidas, 56 second gravidas, and 4 grand multiparas. Height varied from 141 cm to 168 cm, weight was between 44 kg to 72 kgs. Of the 195 gravidae studied, the mean actual birth weight of their babies was 2781 grams. Which was lower than mean birth weight estimated by various clinical methods. All the clinical estimation of the birth weight overestimated the actual birth weight by 1 to 2 gm/100gms.

Keywords: Foetus, Fetal Weight, Ultrasound, Pelvimeter, Primigravidas, Gravidas

INTRODUCTION

A quick and easy method of estimation of foetal weight in utero is an obvious benefit to the clinician practicing modern obstetrics as the perinatal mortality and morbidity is affected not only by foetal age but also by the foetal weight. Foetal weight has also become increasingly important in conditions like management of preterm babies, small for gestation babies, decision for delivery in growth restricted babies, mode of delivery in breech presentation, induction of labour before term in complicated pregnancies, evaluation of foeto pelvic disproportion

Assuming a crude birth rate of 25/ 10,000, there are 23 million births in India every year of which approximately 17.5 million takes place in rural India, which are under domiciliary condition. For these cases we have to search for a clinical method for foetal weight estimation, which is easy, reliable, and can be applied at PHC level by the birth attendants.

An ideal method of foetal weight estimation should have the following advantages

1. Does not need ultrasound, which is not available in most of the PHCs
2. Does not need pelvimeter
3. Considers abdominal girth in calculating baby weight which is to an extent affected by the

uterine volume unlike in Johnsons or Mhaskars formula where it is not considered

4. Does not involve internal examination to determine station of the head which needs expertise that is not expected of a domiciliary birth attendant.

Thus, this study was conducted in order to estimate the foetal weight by a simple and easy method which can be taught to the medical and paramedical staff and the birth attendant under MCH teaching programme as to improve the perinatal morbidity and mortality.

Aim of study

This study was conducted over a period of one year on 195 patients who reported in third trimester of pregnancy and delivered within one week of examination. The Aim of the study was to formulate and evaluate a simple formula for clinical estimation of foetal weight which will be useful at PHC level by the birth attendants.

Null hypothesis is symphysiofundal height (SFH) multiplied by abdominal girth (AG) equals to birth weight (BWT) in grams.

SFH x AG = BWT in grams

The actual birth weight was then compared with clinical estimation of birth weight by:

COVID 19 Patients with Pregnancy Anesthetic Management Case Series

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Abstract

Introduction: Case series helps us to evaluate management and safety of spinal anesthesia for caesarean delivery in pregnant women with COVID-19 infection.

Case Series: We hereby report the management of three COVID-19 positive pregnant women undergoing caesarean section in our hospital. Patients presented with mild symptoms of COVID 19. Routine investigations and COVID -19 markers were evaluated. Anesthesia and operation went uneventfully.

Conclusion: Health care providers and babies were not infected with virus. Precautionary measures and strategies were of utmost importance to lower virus contagion risk. Spinal anesthesia was preferred over GA.

Keywords: Caesarean section, COVID-19, Pregnant, Spinal Anesthesia.

Key Messages: When confronted with caesarean section in parturient with COVID-19, careful planning and detailed preparation improved the safety of the mother and infant and reduced the risk of infection for medical staff.

Introduction

COVID 19 infection caused by corona virus is extremely contagious and can cause severe acute respiratory tract infection. COVID-19 infection can spread to other pregnant women and health care workers. Hence management of such patients is of

utmost importance.¹

Pregnant women with mild infection may present with fever, fatigue, dry cough, but severe infection may progress rapidly to acute respiratory distress syndrome, septic shock, intractable acidosis and coagulopathy.²

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Effect of Preemptive Multimodal Analgesia Regimen on Post-operative Epidural Demand Boluses in Lower Limb Orthopaedic Surgeries

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Abstract

Introduction

Excruciating pain is associated with lower limb orthopaedic surgeries involving femoral shaft fractures. Postoperative pain management is still ineffective in low-resource settings where the use of epidural and opioid-free analgesia is impractical. Literature is scarce with respect to the effect of a preemptive multimodal analgesia regimen on the requirement of postoperative epidural demand boluses. Hence, the present study aimed to evaluate the effect of pre-emptive multimodal analgesia in reducing the requirement of epidural demand boluses postoperatively, and to find out the time required to receive the first epidural bolus.

Material and methods

This double-blinded randomized control study included 48 subjects. Patients aged 18-60 years with lower limb fractures requiring surgery under combined spinal-epidural anesthesia were included. Patients were divided into two groups through random allocation. Group A: Preemptive multimodal group received intravenous paracetamol 1 g, IV diclofenac 75 mg diluted in 100ml NS, IV tramadol 50 mg diluted in 100ml NS and tab pregabalin 75 mg orally, 30 mins before surgery. Group B: Placebo group received 3 pints of 100ml NS IV and tab ranitidine 150 mg, 30 mins before surgery. Intraoperatively, combined spinal-epidural anaesthesia was administered taking all the aseptic precautions. Visual analogue scale (VAS) was recorded immediately on shifting to a postoperative room, and then at 1, 4, 8, 12, and 24 hr for both groups. Epidural boluses (10 ml of 0.125% bupivacaine with 2 µg/ml of fentanyl) were given whenever the patient's visual analogue scale was more than 4. The time at which the first epidural bolus was required by the patient was recorded. The total number of epidural boluses given over 24 hours based on VAS was recorded for both, the preemptive and placebo groups. If the patient still complained of pain, IV diclofenac 75 mg was given if the VAS was more than 4, while IV diclofenac 75 mg along with IV tramadol 50 mg was given if the VAS was more than 6. Patient satisfaction with anesthesia care, in general, was assessed 24 hrs postoperatively.

Results

A total of 48 subjects were included in the study. During the immediate-postoperative period, and at 8, 12 and 24 hr, the median VAS was significantly low in group A as compared to group B. A significant increase in the demand for epidural bolus immediate-postoperatively was observed in group B (70.83%) compared to group A (4.17%) (p-value of <0.001). At 8 hr, 12hr, and 24hr, patients in group A found a significantly less need for epidural boluses compared to Group B. The mean total number of epidural boluses taken in group A was significantly less compared to group B (1.79 ± 0.41 VS 3.33 ± 0.48 , p-Value <0.001). In group A, all patients reported no requirement for diclofenac and tramadol. In group B, 8.33% required diclofenac 75 mg, while the remaining 91.66% had no requirement for diclofenac and tramadol. The difference in patient satisfaction with anaesthesia care in general between the two study groups was found to be significant with a p-value of 0.027. Patients in Group A were very satisfied compared with those in group B.

Conclusions

The study found that the pre-emptive multimodal analgesia group had better postoperative pain control because they required fewer epidural boluses and no extra analgesics postoperatively. This group was more satisfied with the anaesthesia care in general.

Categories: Anesthesiology, Pain Management, Orthopedics

Keywords: fracture, postoperative, lower limb, analgesia, multimodal, preemptive

Introduction

Preemptive administration of analgesic medication is considered to be more effective in controlling postoperative pain than medication given after the onset of a painful stimulus [1]. Previous studies with

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Research Article

Effect of Low-Dose Dexmedetomidine Infusion on Hemodynamic Response and Postoperative Analgesia in Laparoscopic Cholecystectomy

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Abstract: Background: Laparoscopic cholecystectomy is a widely performed surgical procedure, favored for its minimally invasive nature and faster recovery. However, the physiological stress response triggered by surgery and anesthesia can impact hemodynamic stability. Dexmedetomidine, a selective alpha-2 adrenergic agonist, has shown efficacy in attenuating the perioperative stress response by reducing serum catecholamine levels. This study evaluates the effect of two different low-dose dexmedetomidine infusions on intraoperative hemodynamics and postoperative analgesia. **Methods:** Fifty ASA Physical Status I and II patients undergoing elective laparoscopic cholecystectomy were randomized into two groups. Group A received dexmedetomidine infusion at 0.2 mcg/kg/hr, while Group B received 0.4 mcg/kg/hr. No loading dose was given. Hemodynamic parameters, including heart rate and MAP (Mean Arterial Pressure) were recorded at baseline, 15 minutes after infusion initiation, post-induction, post-intubation, post-pneumoperitoneum creation, and post-extubation. Postoperative pain was assessed using the VAS (Visual Analogue Scale), and time to first rescue analgesia (tramadol) and total 24-hour analgesic requirement were documented. **Results:** Both dexmedetomidine infusion rates maintained stable intraoperative hemodynamics. However, the 0.4 mcg/kg/hr group showed better control of heart rate and MAP at key surgical milestones. Additionally, patients in this group experienced prolonged pain relief and required significantly less cumulative analgesia in the first 24 hours postoperatively. **Conclusion:** Continuous low-dose dexmedetomidine infusion without a bolus effectively blunts the perioperative stress response during laparoscopic cholecystectomy. A higher infusion rate of 0.4 mcg/kg/hr provides superior intraoperative hemodynamic control and enhanced postoperative analgesia compared to 0.2 mcg/kg/hr.

Keywords: Dexmedetomidine, Laparoscopic Cholecystectomy, Hemodynamic Response, Postoperative Analgesia, Alpha-2 Agonist.

INTRODUCTION

Laparoscopic cholecystectomy is among the most frequently performed surgeries today, offering benefits such as a shorter hospital stay, minimal incisions, reduced postoperative pain, and quicker recovery. Despite these advantages, it still triggers a stress response due to surgical and anesthetic stimuli.^[1]

Modern anesthetic practices aim to suppress sympathetic discharge and maintain perioperative hemodynamic stability. Various pharmacologic agents-opioids, beta-blockers, and centrally acting sympatholytics-have been employed to attenuate this stress response. Among these, alpha-2 adrenergic agonists are notable for their anxiolytic, sedative, sympatholytic, and analgesic-sparing properties.^[1]

Inadequately controlled postoperative pain can lead to significant physiological and psychological morbidity, delayed recovery, prolonged hospitalization, and even the development of chronic pain.^[2] Effective pain control improves patient satisfaction and recovery. Preemptive analgesia has been proposed to reduce overall analgesic needs and enhance pain outcomes.^[3]

Dexmedetomidine, a selective alpha-2 agonist, has eight times greater affinity for alpha-2 receptors compared to

clonidine. Its intravenous use has been shown to reduce serum catecholamine levels by up to 90%, thereby blunting the hemodynamic stress responses to laryngoscopy, intubation, pneumoperitoneum, and extubation. It also provides sedation without respiratory depression and lowers postoperative analgesic requirements.^[1] Approved by the FDA in 1999 for short-term sedation and analgesia in ICU settings, dexmedetomidine acts via alpha-2A, 2B, and 2C receptors, mediating hypotension, bradycardia, sedation, and analgesia through central and spinal pathways.

This study aims to compare the effects of two maintenance infusion doses-0.2 mcg/kg/hr and 0.4 mcg/kg/hr-of dexmedetomidine in patients undergoing laparoscopic cholecystectomy, focusing on perioperative hemodynamic response and 24-hour postoperative analgesic requirements.

Aims and Objectives

This study aims to compare the perioperative hemodynamic responses, specifically mean arterial pressure and heart rate, between two groups of patients undergoing laparoscopic cholecystectomy who receive different maintenance infusion doses of dexmedetomidine (0.2 mcg/kg/hr and 0.4 mcg/kg/hr). Additionally, the study aims to evaluate the timing of the first requirement for

Patient Satisfaction with Anaesthesia: Perioperative Questionnaire versus Face-to-face Survey

MATHEW GEORGE¹, N KIRAN², M RAVI³

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ABSTRACT

Introduction: Factors favouring patient satisfaction in anaesthesia are availability of services based on Institutional facilities, mutual between with anaesthesiologist and patients, skill of healthcare experts and patient requirements. When one wishes to improve response rates and raise the calibre of the data captured, face-to-face surveys are among the greatest methods for gathering data. It can be challenging to quantify subject satisfaction in anaesthesia, since subjective indications vary by person, culture and background. Patients rating of their own satisfaction can estimate the care given during procedure, which cannot be easily assessed in any other way.

Aim: To assess patient satisfaction regarding the care provided during anaesthesia and to find out whether dissatisfactions are better elicited through face-to-face interviews or questionnaire.

Materials and Methods: This cross-sectional study was conducted on patients undergoing surgery under general or regional anaesthesia at Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar, Karnataka, India, from November 2021 to February 2022. Estimated sample size was 74. As per American Society of Anaesthesiologist (ASA) grades 1 and 2, adults in the age group of 18–65 years were divided into two groups using chits. In group A, face-to-face interview was done on postoperative day 2 by anaesthesiology resident. In group B, questionnaire was

given on postoperative day 2 by anaesthesiology resident. The questions on anaesthesia-related dissatisfaction were posed in a semi-dichotomous scale (no/yes-mild, moderate, severe); the questions on satisfaction with anaesthesia care were given on a 4-item scale (extremely satisfied/satisfied/neutral/dissatisfied). The data was analysed by using Statistical Package for the Social Sciences (SPSS) software version 22.0, and R environment version 3.2.2 and Microsoft word and Excel have been used to generate graphs and tables.

Results: Patient population included in study was 74, among which 63 (85.1%) patients were extremely satisfied with the care given by Anaesthesia Department in general, 7 (9.5%) were satisfied, 4 (5.4%) were neutral, and no one were dissatisfied. Among questionnaire group 36 (97.3%) patients were extremely satisfied with anaesthesia care in general, while 27 (73%) of face-to-face group were extremely satisfied with anaesthesia care in general. Among anaesthesia related dissatisfactions 65 (87.8%) of patients did not complain of postoperative nausea and vomiting. In the present study, 52 (70.3%) patients were extremely satisfied with pain relief after surgery.

Conclusion: Face-to-face interview identifies more patients who report lower degree of satisfaction with anaesthesia, it can be concluded that, interviewing is better suited for detecting quality problems with anaesthesia care than written questionnaire.

Keywords: American society of anaesthesiologist, Interview, Patient care, Patient gratification

INTRODUCTION

Patient satisfaction is an indicator of the security and quality of services provided by healthcare team. It incorporates a comprehensive approach to determine, how well the patient's perceptions about the quality provided by healthcare provider have been met [1]. Patient satisfaction is dependent on a variety of aspects, like service availability and convenience, which are influenced by Institutional facilities, interpersonal connections, technical skill of healthcare providers, patient expectations and preferences. Due to the intricate nature of satisfaction, questionnaires should include numerous items to evaluate certain events. The design of a patient satisfaction questionnaire demands a gradual psychometric strategy and confirmation in reality [2]. There are many ways to estimate patient care and satisfaction, including postoperative visits and questionnaires. Face-to-face surveys improve response rate and raise the caliber of data captured. Face-to-face surveys being frequently used to gather data for projects that are assumed to be accurate [3].

Patients rating of their own satisfaction can estimate the care given during procedure which cannot be easily assessed in any other way. It improves and deepens the relationship between the patient and the anaesthesiologist as well as the standard of anaesthesia care given to the patient. Patients mostly have problems in analysing

the quality of anaesthesia care independently from the overall care during treatment. Cultural and socio-economic factors are known to influence patient satisfaction [4]. The significance of quality control in the operating theatre, including anaesthesia care should not be compromised. The perioperative patient care system can be enhanced by ensuring patient safety, employing techniques that can strengthen clinical decisions in the operating theatre, and applying innovative techniques for minimising perioperative complications [5].

One of the main components of patient satisfaction is improving communication skills with the patients. It measures the relevance of the information given, may reduce patient anxiety while rising patient satisfaction and so enhances the quality of the service [6]. Only few researches have been conducted regarding patient satisfaction with the anaesthesia care using questionnaire and face-to-face surveys in India. Therefore, the present study was aimed to assess patient satisfaction and dissatisfactions with anaesthesia care in general. The secondary objective was to assess the level of patient satisfaction regarding the care provided during anaesthesia using questionnaire and face-to-face interview.

MATERIALS AND METHODS

This cross-sectional study was conducted in the Department of Anaesthesiology at Sri Devaraj Urs Medical College, Sri Devaraj

Ease Of Intubation and Hemodynamic Response to Laryngoscopy and Endotracheal Intubation with Macintosh and Hugemed Video Laryngoscope

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Abstract: Objectives: The aim of this study is to compare the Ease of intubation and changes in hemodynamic parameters during endotracheal intubation using McIntosh & Hugemed laryngoscope in a patients who are ASA grade I and II. **Methods:** A total of 70 patients who are ASA grade I and II belonging to the age group 18 to 60 years posted for elective surgeries under general anesthesia in Government Medical College, Thrissur were studied. 35 of them were intubated using McIntosh laryngoscope while the rest were intubated using Hugemed video laryngoscope. The time taken to perform endotracheal intubation and changes in hemodynamic parameters during the initial five minutes following intubation were recorded and compared between the 2 groups. **Results:** The 2 groups were similar with respect to demographic data and airway examination. The duration of laryngoscopy and intubation was significantly longer in group B (Hugemed laryngoscopy) when compared to group A patients with p value = 0.000. However, haemodynamic changes did not show any significant differences between the groups. **Conclusion:** The study found that, as compared to traditional laryngoscope (McIntosh), Hugemed video laryngoscopy did not provide any benefits for patient hemodynamic response to laryngoscopy and intubation, but the time required for intubation was significantly longer in the video laryngoscope group.

Keywords: McIntosh, Endotracheal intubation, Haemodynamic changes, Duration of laryngoscopy, Hugemed Video laryngoscopy

INTRODUCTION

Laryngoscopy and endotracheal intubation is an integral part of general anesthesia. Direct laryngoscopy and passage of endotracheal tube through the larynx is a noxious stimulus, which can

patients with poor cardiovascular reserve. The magnitude of hemodynamic response increases with the force and duration of laryngoscopy (DOL) and can also be influenced by prolonged intubation time (10). Because it may lead to rare, but serious complications such as myocardial infarction or brain hemorrhage, Anesthesiologists should be careful to minimize the incidence of hypertension during tracheal intubation. Thus, use of different types of laryngoscope blades can help decreasing these responses

The Macintosh laryngoscope (MCL) has been the "gold standard" device for direct laryngoscopy and tracheal intubation since its invention by Foregger and Foregger in 1940s. Direct laryngoscopy (DL) does not always allow optimal viewing of the glottis, especially in those patients with anatomical characteristics which can make tracheal intubation difficult. (2)

provoke untoward response in the cardiovascular, respiratory and other physiological systems. (1) . Significant tachycardia and hypertension can occur with tracheal intubation under light anaesthesia. Hypertension, tachycardia and arrhythmia caused by endotracheal intubation can be deleterious in

The videolaryngoscope(VLS) (HugeMed, Shenzhen) is a portable device designed to perform indirect laryngoscopy in both routine and difficult airway intubations, in elective or in emergency settings(3). The main advantage is the visualization of the target, as the operator's "eye" is now located at the tip of the blade 2 or 3 cm. The alignment of the oral-pharyngeal-laryngeal axis, crucial to DL, is thus rendered nonessential in VLS. The number of attempts, and consequently the trauma to the airway, is also reduced.

The study was designed with the objective to assess the hemodynamic changes that occur during and after endotracheal intubation with HugeMed video laryngoscope and comparing those changes with conventional laryngoscopy (Macintosh). We are also comparing the time taken to perform the endotracheal intubation in both groups.

April 13, 2024

Ref: Acceptance for Publication of your Research Manuscript

Dear Authors:

Dr. Rohit Kamal, Dr. Keerthana.M, Dr. Gunasekaran. K & Dr. Reesha Joshi

Corresponding author - Dr. Rohit Kamal rohankamal@gmail.com

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Title: *COMPARISON OF SPINAL BLOCK CHARACTERISTICS BETWEEN HEIGHT AND WEIGHT BASED DOSAGE VERSUS FIXED DOSAGE OF INTRATHECAL BUPIVACAINE FOR ELECTIVE CAESAREAN SECTION: A RANDOMIZED CLINICAL TRIAL*

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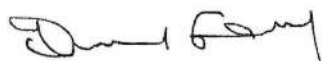
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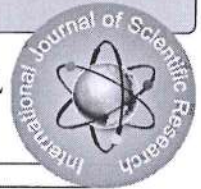
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ASSESSMENT OF EFFICACY OF PRE-OPERATIVE TRANSDERMAL FENTANYL PATCH IN POST -OPERATIVE ANALGESIA IN PATIENTS UNDERGOING ABDOMINAL SURGERIES UNDER GENERAL ANAESTHESIA – A PROSPECTIVE RANDOMISED CONTROLLED STUDY

Anaesthesiology

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ABSTRACT

Abdominal surgeries done under general anaesthesia is associated with severe pain in the post-operative period. There are many drugs that can be administered to alleviate post-operative pain. Opioids are an essential to the mitigation of visceral pain associated with abdominal surgeries. Apart from needles and epidural catheters which are invasive, transdermal drug delivery systems are novel, non-invasive, and is associated with increased patient comfort. Among drugs that can be delivered by transdermal route fentanyl is an effective opioid analgesic that has a high potency and high lipid solubility making it suitable for transdermal delivery¹. This study attempts at the evaluation of the analgesic efficacy of fentanyl patch applied pre-operatively in alleviation of post-operative pain in patients undergoing abdominal surgeries under general anaesthesia.

KEYWORDS

INTRODUCTION

The incidence and severity of post-operative pain in major abdominal surgeries is well known. To mitigate the pain severity several drugs ranging from NSAID's to Sedative hypnotics have been used. However, opioids are very efficacious and widely practiced mode of analgesia. The maintenance of continuous steady concentration of opioids in the plasma can lead to superior pain relief. Apart from Intravenous infusion, transdermal patch is also a novel drug delivery system that can maintain a steady concentration of plasma opioid levels of drugs such as fentanyl and buprenorphine owing to their lipid solubility properties. Unlike an infusion that requires manual assistance, transdermal patches once affixed can elute a steady drug concentration up to 72 hours. They were also associated with minimal side effects as opposed to intravenous bolus doses and had a less incidence of respiratory depression.

AIMS AND OBJECTIVES

This study aims at assessing the efficacy of pre-operatively applied Transdermal fentanyl in alleviation of post-operative pain in patients undergoing abdominal surgeries such as Cholecystectomy, colostomy, oophorectomy, total abdominal hysterectomy, and total vaginal hysterectomy, etc. performed under general anaesthesia.

Primary Outcome: Numeric pain Scale (NRS) in immediate post-op period and at 2 hours, 6 hours, 8 hours, 12 hours, 24 hours, 36 hours and 48 hours.

Secondary outcome : Comparison of Ramsey sedation scale, incidence of adverse effects and the total doses of rescue analgesics needed

MATERIALS AND METHODS

The investigation was carried out on 60 ASA I and II, 18- to 69-year-old patients scheduled for abdominal surgery, including cholecystectomy, colostomy, oophorectomy, total abdominal hysterectomy, and total vaginal hysterectomy. Patients signed informed consent forms to participate in the study, which was approved by our internal review board. Prior to surgery, medical history was obtained and a physical examination was performed on all patients, as well as routine hematologic and clinicopathologic tests. All the patients were examined in the pre-anaesthetic clinic and deemed fit to undergo surgery under general anaesthesia under ASA Grade I and II.

A total of 60 patients were enrolled in the study of Age 18-75 years and of moderate build. The exclusion criteria was 1) Patients who are

allergic to opioids, 2) Patients who have obstructive sleep apnea, 3) Patients above age of 70 years (geriatric patients), 4) Patients undergoing oral and laryngopharyngeal surgery, 5) Patients who have constipation, IBD, other pre-existing abdominal conditions for which they are not being operated upon, 6) High risk for aspiration and BMI is more than 35 kg/m². The 60 patients were using simple random sampling and assigned to two Group A – designated to receive a Placebo in the form of a micropore cut to the same dimension of the Duragesic fentanyl patch (25 mcg/hr). The other Group B was the test group which received The Duragesic fentanyl patch (25 mcg/hr).

On the day of the surgery, Premedication consisted of 0.2 mg glycopyrrolate and 2 mg midazolam administered intramuscularly about 40 - 60 minutes before induction of anaesthesia. At the same time, the patch was applied on the left anterior chest wall in the mid-clavicular line and shifted to the operative area. General anaesthesia induction and maintenance was standardised between both the groups. The patients NBM (Nil by Mouth) status of 8 hours was confirmed and 18G I/V cannula was secured and Ringer's Lactate solution was started. After attaching all the monitors, baseline readings of Heart Rate (HR), Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP), Mean Arterial Pressure (MAP), Oxygen Saturation (SpO₂) and Electrocardiogram (ECG) were noted. Patients were induced with inj. fentanyl 2 mcg / Kg, induced with inj. Propofol 1 - 2 mg / Kg, endotracheal intubation was facilitated with intubating dose of inj. vecuronium 0.1 mg / Kg and maintained by 1 - 2 % sevoflurane with 50 % oxygen and 50 % nitrous oxide. Inj. Neostigmine 0.05 mg / Kg and glycopyrrolate 0.02 mg / Kg given at the end of surgery was used for reversal of neuromuscular blockade. Vitals like ECG, SPO₂, SBP, DBP, ETCO₂ were monitored intraoperatively throughout the surgery and in the recovery room for 2 hours Post-operatively, after which the patients were shifted from the recovery room to Post-operative ward. The patients were monitored for vitals, pain by 10 point numeric scale, sedation by Ramsay Sedation Score (RSS) and adverse effects i.e., nausea, vomiting, pruritis, respiratory depression, at the interval of 4 hours for 48 hours from the time of arrival to Post-operative recovery Room (PACU).

A medical officer (who was blinded to the study) was assigned to follow up the patients in both the groups and assessed for Post-operative pain according to the Numeric Pain Score (NRS)² and Ramsey sedation score (RSS)² along with post operative vitals and the need and number of rescue analgesic doses if any given at 2 hrs, 6 hrs, 8 hrs, 12 hrs, 24 hrs, 36 hrs and 48 h post placement of the patch. The



Case Report

Anaesthetic management of a case of multiple splenic abscesses with left hydropneumothorax undergoing splenectomy with pigtail catheter insitu

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ABSTRACT

The use of a thoracostomy chest tube for drainage of hydropneumothorax is preferred from an anaesthetic point of view as positive pressure can be applied. Pigtail catheters are widely used as it is less invasive, less traumatic, and easier to perform and allows more ambulation. When compared to the chest thoracostomy tube, pig tail catheters are better tolerated. Here we present a case of a 43 year old man with multiple splenic abscesses in sepsis and left sided hydropneumothorax which was drained with a pigtail catheter. The plan initially was to perform the procedure under high thoracic epidural with ICD on standby. Half an hour into the procedure, due to incessant cough and movement, there was a need to supplement with general anaesthesia using a supraglottic airway (Proseal LMA size 3). The patient was on spontaneous ventilation with Propofol sedation using TCI pump. Procedure was conducted without further complications. Patient was shifted to SICU for further care.

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1. Case Report

A 43-year-old male came with complaints of pain over the left abdomen, left sided chest pain and breathlessness for 4 days duration. He also complained of low grade fever and cough with expectoration for the same duration. He had a weight-loss of 15kgs over a period of one and a half years. He is a known diabetic and hypertensive for the past 10 years. Patient is a chronic smoker and alcoholic for the past 15 years. On examination at admission, the patient was conscious and co-operative with tachycardia and a high blood pressure (BP = 150/90 mmHg, Pulse rate = 114 beats/min). Respiratory rate was 27 breaths per minute and oxygen saturation 93% on room air. On auscultation of lungs, air entry was reduced on the left side of the chest with crepitations. Cardiovascular system examination was normal. On examination of the abdomen,

tenderness was elicited on the left hypochondrium and enlarged spleen was found on palpation. Lab investigations showed WBC count of 7988 per cubic mm and hemoglobin 14.2gm%. The serum electrolytes, coagulation profile, RFT and LFT were within normal limits. ECG was normal. ECHO revealed normal study. Chest radiograph of the patient showed left sided pleural effusion. Arterial blood gas (ABG) analysis on admission at room air was within normal limits. Patient was shifted to the ICU in view of breathlessness and desaturation in the ward. The ABG taken at that time was normal. He was empirically started on antibiotics. The Urine for routine examination was normal and the culture did not show any growth. Blood culture showed Staphylococcus Hominis growth. Inj Clindamycin sensitive to growth was added. Following improvement, he was shifted to the ward from ICU after two days. Pleural tapping was done following which patient developed left sided iatrogenic hydropneumothorax. This was confirmed on the chest radiography. The Pleural fluid analysis showed

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COMPARISON OF EFFICACY OF TWO TYPES OF MUSIC PLAYED INTRA-OPERATIVELY AS AN ADJUNCT TO SPINAL ANESTHESIA FOR BETTER PERI-OPERATIVE EXPERIENCE OF THE PATIENT: A RANDOMISED CONTROL STUDY

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Keywords:

Anesthesia, Perioperative anxiety, Non-pharmacological methods, Music therapy, Post-operative pain

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ABSTRACT: **Aim:** To compare the effects of two types of music (meditation and devotional) played intra-operatively and control (no music) as an adjunct to spinal anaesthesia for better and holistic approach to perioperative care of the patient. **Methodology:** A prospective, randomised control study was conducted at a tertiary care hospital with 60 patients. The patients were randomly allocated into three groups with 20 members in each group as group A with meditation music, group B with devotional music and group C with no music. Informed consent was obtained from the patients and the following parameters were observed – intra-operative hemodynamic profile, post-operative anxiety, post-operative nausea & vomiting and overall patient satisfaction. After intervention data was collected and statistically analyzed. **Results:** The patients in the intra-operative music groups showed statistically significant reduction in post-operative anxiety and pain and better hemodynamic profile. The patients in the meditation group showed statistically significant reduction in the same parameters when compared with the patients in the devotional group. Overall patient satisfaction was more significant in devotional group as compared to medication group and control group. **Conclusion:** We showed that music played intraoperatively is good adjunct to spinal anaesthesia and has potential to enrich patients' perioperative experience by reducing intra-operative and post-operative anxiety, improving hemodynamic profile and increasing overall patient satisfaction.

INTRODUCTION: The incidence of pre-operative anxiety has been determined to be between 32% to 61%^{1, 2, 3, 4} depending on gender, setting of surgery, motives of surgery and other factors. Perioperative anxiety has been described as a vague, uneasy feeling, the source of which is often nonspecific and unknown to the individual. Three distinct dimensions of preoperative anxiety are known: fear of the unknown, fear of feeling ill, and fear for life⁵.

The loss of autonomy during surgery and anaesthesia and the fear of resulting complications, incapacitation, death results in distressing anxiety in the perioperative scenario⁶. Anxiety can lead to abnormal hemodynamics as a result of stress response and stimulation of the autonomic and neuro-endocrine systems.

Several studies have described mechanisms such as excessive cortisol production with insulin resistance and sympathetic and vagal disturbances^{7, 8, 9}. One study postulated that elevated cortisol levels as a response of excessive anxiety may suppress the immune system precipitating post-operative infectious complications¹⁰. This leads to a stressful and unpleasant experience for the patient requiring surgery and leads to difficulties in managing the perioperative period for the

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Validation of Pecarn Clinical Score in Children of Age Less than 6 Years Presenting to Emergency Department with Minor Head Trauma: A Cross Sectional Study

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Department of Emergency Medicine, Amala Institute of Medical Sciences, Thrissur, India

Abstract: ***Introduction:** Head trauma in children is a common reason for medical evaluation in Emergency Department. The PECARN criteria is the most frequently applied guideline in those groups. This study seeks to determine the diagnostic performance of PECARN clinical score. **Methodology:** All PECARN negative children were kept under observation for 6 hours in the ED. During this time they were monitored for symptoms and signs of traumatic brain injury. If any symptoms occur during observation or parents insist for imaging, CT head was taken. Telephonic follow up done after ED discharge, and were asked for symptoms and signs of traumatic brain injury. **Results:** Out of 109 PECARN negative children, CT head was done in 78 children. CT head was normal for 59 children (54.1%). CT brain showed skull fractures/IC bleed among 19 children. Upon 24 hour follow up of the children, six children had symptoms. All other children were asymptomatic after discharge. **Conclusion:** Among 109 PECARN negative children, 19 (17.4%) children had head injury. The PECARN rule successfully identified 90 patients with no clinically - important traumatic brain injuries*

Keywords: PECARN Score, Minor Head Trauma

1. Introduction

Blunt head trauma in pediatric age group is a common reason for medical evaluation in Emergency Department (ED). Due to the frequency and clinical importance of minor head trauma in pediatric patients, several studies tried to develop reliable and practical prediction rules aiming to identify patients who have sustained a traumatic brain injury. The PECARN criteria is the most frequently applied guideline. The clinical evaluation of children younger than 6 years old with minor head trauma is a challenge for many clinicians. This results in great variation in practice when deciding whether to obtain a computed tomography (CT) scan, observe, or immediately discharge the patient because the majority of patients have few or subtle signs of traumatic brain injury (TBI). This study seeks to determine the diagnostic performance of PECARN clinical score.

2. Methodology

Study Method: Single centre hospital based cross sectional study

Study Setting: Emergency Department of Amala Institute of Medical Sciences, Thrissur

Study Period: From February 2021 till July 2022

Study Subjects: All PECARN negative minor head trauma patients of age < 6 years admitted to emergency department observation unit of the hospital

Inclusion Criteria:

- All PECARN negative children < 6 years of age

Exclusion Criteria:

- Patients not willing for observation, CT scan
- Patients not able to follow up after multiple attempts over phone

Sampling Method: Consecutive sampling

Sample Size Calculation

$$n = (Z_{1-\alpha/2})^2 \frac{SN(1-SN)}{w^2}$$

α =Significance level

SN=Sensitivity (92.3%)

w=Absolute precision (5%)

n = 109

Outcome Measures:

- Number of patients who had findings of skull fractures and/or intracranial haemorrhage in CT head
- Number of patients in whom follow up was uneventful

Ethical Issues

Study was done after obtaining permission from Institutional Research Committee

Data Analysis

The data was entered in to the Microsoft excel worksheet and the analysis performed using SPSS 23. Result of continuous measurements are presented on arithmetic mean \pm standard deviation (AM \pm SD) and results on categorical measurements are presented in number (%). Significance assigned at 5% level.

Assessing First Pass Success Rate with Low Dose Rocuronium during Rapid Sequence Intubation among Patients in an Emergency Department

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Dr. Vaisakh R Vijay⁴, Dr. Jeevan Jayakumar⁵

Department of Emergency Medicine, Amala Institute of Medical Sciences

Abstract: Introduction: Rapid sequence intubation is defined as the administration of a potent induction agent immediately followed by a rapidly acting paralytic agent to induce unconsciousness and motor paralysis to facilitate endotracheal intubation easier and safer. Rocuronium and its first - pass success rates were primarily researched in western populations. There have been very few studies on the topic among the Indian population. Therefore, it is crucial to perform studies to assess first pass success rate when a low dose rocuronium is combined with an induction agent in RSI in adult patients presenting to the emergency department such that it can be implicated in an anticipated difficult airway. Methods: A cross sectional study was conducted at the ED of Amala Institute of Medical Sciences over a period of 1.5 years. Associations between qualitative variables were tested using Fischer's exact test and relation between qualitative and quantitative variables were tested using t test. P value <0.05 was assigned for statistical significance a priori. Results: In this study success rate of intubation in first attempt was tested using Fischer's exact test when low dose rocuronium (0.3mg/kg) was administered which was found to be statistically significant with a p value <0.001. Other factors like age, gender and comorbidities were found to have no significance with administration of low dose rocuronium. Conclusion: This study shows that with low dose rocuronium a good first pass success rate could be obtained, thereby reducing complications associated with neuromuscular blocking agents. Although the co factors were of no significance when attributed with low dose rocuronium.

Keywords: Rapid sequence intubation, low dose rocuronium, first pass success

1. Introduction

The invasive procedure of endotracheal intubation can be extremely uncomfortable for the patient. To ensure that patients don't experience any pain, induction agent and a muscle relaxant are routinely administered ⁽¹⁾. For the purpose of facilitating endotracheal intubation, RSI is defined as the injection of a powerful induction agent followed immediately by a rapidly acting paralytic agent. Preparation, pre - oxygenation, pretreatment, paralysis with induction, positioning, placement of the tube, and post - intubation patient management make up the six steps of the RSI method. ⁽²⁾ The purpose of emergency rapid sequence intubation is to make emergent intubation easier and safer, thereby increasing the success rate of intubation while decreasing the complications which include pulmonary aspirations, prolonged intubation with hypoxia, and precipitating a crash airway. 'Modified RSI' was introduced using rocuronium which is a non - depolarizing muscular blocking agent with a prolonged neuromuscular blockade. But the major disadvantage is that it later on lead to surgical airway in order to prevent hypoxemia due its delayed onset of recovery. Despite its effects on health and survival, research on endotracheal intubation and RSI has decreased over the past few years. Therefore, the study's primary focus is on the technique and methodology used in the RSI approach.

Interpersonal variability can affect the endotracheal intubation technique. They heavily rely on the RSI technique. Both their sensitivity and specificity vary greatly. Improper practice of the RSI is linked to failed resuscitation or death. In order to prevent pulmonary aspiration in patients who may be at risk, the airway must be quickly controlled.

RSI is significant in this situation. Clinicians from a variety of medical specialties, such as critical care specialists, anesthesiologists, and emergency medical professionals, use this technique. Emergency medicine is increasingly utilizing RSI for saving lives. ^(3 - 5) The effectiveness of rocuronium in rapid sequence intubation is disputable. According to some studies, rocuronium has a higher first - pass success rate than other neuromuscular blocking medications. When employing rocuronium, a high success rate was seen when using a calibrated and exact dosage. Although rocuronium has many benefits, it also has significant drawbacks. As previously mentioned, its protracted activity can result in high blood pressure, an irregular heartbeat, and symptoms including a severe headache, blurred vision, a pounding in the neck or ears, anxiety, and confusion. These side symptoms can disguise the underlying problem and lead to a false diagnosis. It can occasionally cause allergies and respiratory problems. ^(6 - 9) Therefore, it is crucial to keep researching low - dose rocuronium and how it affects RSI.

As far as we are aware, there hasn't been much research on determining first pass success rate with low dose rocuronium during rapid sequence intubation. Rocuronium and its first - pass success rates were primarily researched in western populations. There have been very few studies on the topic among the Indian population. A risk - based approach for individuals with dire emergency conditions would benefit from an understanding of the variation, dosage, and profile of the drugs used in the RSI process. The quick and prompt assessment of their success rate of rocuronium in RSI will provide insight into handling emergencies. Therefore the primary goal of our study is to evaluate whether paralysis with low - dose rocuronium provides significant first - pass

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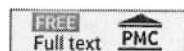
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Post-Diarrheal Acute Kidney Injury During an Epidemic in Monsoon – A Retrospective Study from a Tertiary Care Hospital

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Affiliations

PMID: 39156841 PMCID: PMC11326784 DOI: 10.25259/ijn_285_23

Abstract

Background: Acute kidney injury (AKI) is a severe complication of acute diarrheal diseases; however, there is limited data on post-diarrheal AKI (PD-AKI) epidemiology and outcomes. This study aimed to investigate the clinicodemographic profile and outcomes of PD-AKI in our hospital.

Materials and methods: We retrospectively analyzed data from 93 patients admitted with PD-AKI during a diarrheal illness epidemic. Patients were stratified based on the Kidney Disease: Improving Global Outcomes (KDIGO) AKI stage and quick Sequential Organ Failure Assessment (qSOFA) score. Clinicodemographic data and outcomes were recorded and analyzed.

Results: The mean age of the patients was 45.7 ± 11.9 years, with a majority being men ($n = 55$, 59%). All patients presented with watery diarrhea, 85% ($n = 79$) had vomiting, and 66% ($n = 61$) presented in shock. At presentation, 59% were oliguric, while 32% were anuric. KDIGO stage 3 AKI was observed in 71% ($n = 66$) of patients. Dialytic support was required in 29% ($n = 27$) of cases. The mortality rate was 6.5% ($n = 6$), mostly due to refractory shock, while the remaining patients recovered. Risk factor analysis demonstrated a higher qSOFA score, and peak serum creatinine levels were associated with an increased likelihood of requiring renal replacement therapy and delayed renal recovery.

Conclusion: This study provides valuable insights into the clinicodemographic characteristics and outcomes of PD-AKI. The high prevalence of severe AKI emphasizes the importance of early recognition and appropriate management strategies for these patients.

Keywords: Acute diarrheal disease; acute kidney injury; epidemic; vibrio.

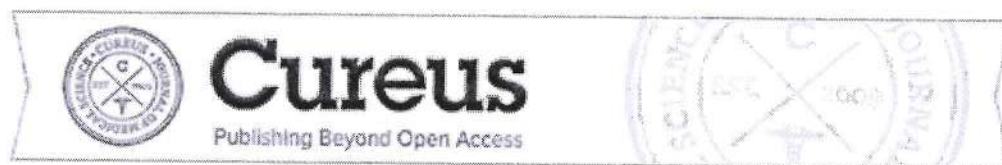
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A Case of Aspergillus Fungal Ball in a Transplant Graft Kidney

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Editors: Alexander Muacevic, John R Adler

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Abstract

We report a case of an Aspergillus fungal ball in a transplant graft kidney presenting as obstructive nephropathy. This is a rare manifestation considering the usual presentations of Aspergillus infection, which are pulmonary, rhino-cerebral, and disseminated forms. Imaging showed hydronephrosis with an echogenic material in the transplant renal pelvis, which was further found to be the fungal ball. The patient underwent a graft nephrectomy due to severe sepsis, and following that, his condition improved.

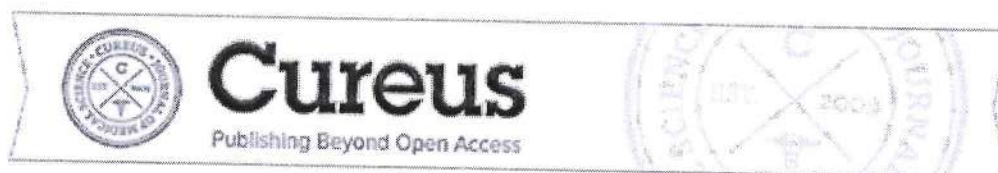
Keywords: fungal ball, kidney transplant complication, graft nephrectomy, fungal bezoars, aspergilloma

Introduction

Increasingly potent immunosuppressive agents have dramatically reduced the incidence of rejection of transplanted organs while increasing patients' susceptibility to opportunistic infections and cancer [1-3]. Kidney transplant patients are vulnerable to fungal infections because of therapeutic immunosuppression. In solid organ transplants, filamentous fungal infections are associated with high mortality and morbidity. The Aspergillus family accounts for most infections [4,5]. Most solid organ transplant recipients with Aspergillus infections have pulmonary [6], rhino-cerebral, or disseminated

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Frailty in Patients With Chronic Kidney Disease Stage Five

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Abstract

Aim

To study the prevalence of frailty in patients with chronic kidney disease stage 5 (CKD5) and to assess coexisting factors associated with frailty in chronic kidney disease.

Patients and methods

We studied the prevalence of frailty in CKD5 patients from November 2021 to November 2022. CKD5 patients over 18 years of age were included. Patients on maintenance hemodialysis and CKD5 patients on pre-dialysis care were included. Patients with active infection and significant morbidity were excluded. We performed a history and clinical examination and recorded laboratory data.

We performed frailty assessments using modified Fried's criteria. Frailty was defined based on previously validated Fried's criteria, which included 1. Slowness, 2. Weakness, 3. Unintentional weight loss, 4. Exhaustion, 5. Low physical activity. A patient is considered frail if three or more components are

A STUDY ON THE CORRELATION OF DIABETIC RETINOPATHY AND NEPHROPATHY WITH GLYCEMIC STATUS

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ABSTRACT

Background: Diabetes mellitus is a global epidemic with a projected prevalence of over 783 million people by 2045. Microvascular complications, such as diabetic retinopathy (DR) and nephropathy (DN), are significant contributors to the disease burden, leading to vision loss and end-stage renal disease. Chronic hyperglycemia plays a key role in their pathogenesis by triggering vascular damage, oxidative stress, and inflammation. Glycemic control, as measured by HbA1c, is a pivotal determinant of DR and DN progression, yet the complex interplay between these complications and glycemic status warrants further investigation. **Methods:** This cross-sectional study was conducted at a tertiary care hospital over three months, including 25 diabetes patients aged ≥ 18 years. Exclusion criteria included hypertension, renal replacement therapy, and pregnancy. DR severity was classified via fundus examination, while DN was assessed using urine protein-creatinine ratio (PCR) and estimated glomerular filtration rate (eGFR). HbA1c was used to categorize glycemic status into good ($<7\%$), moderate ($7-8\%$), and poor control ($>8\%$). Descriptive statistics, correlation analysis, and multivariate logistic regression were performed to evaluate associations between glycemic control, DR, and DN. **Results:** The mean age was 55.4 years, with 60% females. Mean HbA1c was 10.48% ($SD \pm 2.58$), indicating poor glycemic control. DR was present in 60% of participants, predominantly in mild to moderate stages. Albuminuria ($PCR \geq 0.2$) was noted in 92%, and 72% were in CKD stages 3–5. A weak correlation was found between HbA1c and CKD stage ($r=0.08$). Urine PCR showed a weak negative correlation with CKD stage ($r=-0.217$). **Conclusion:** The study highlights a high prevalence of diabetic retinopathy and nephropathy in individuals with poor glycemic control. Although glycemic control plays a central role, weak correlations suggest other contributing factors such as hypertension and systemic inflammation. Early detection and integrated management are essential to mitigate the burden of these complications.

Clinical profile of patients with pulmonary tuberculosis with special reference to hematological system

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Abstract

Background: Tuberculosis has been considered a major public health burden over the past three decades. Identifying the optimal combination of hematological markers that could be predictive for the response to treatment in pulmonary tuberculosis patients is paramount when evaluating the effectiveness of anti TB drugs. Therefore, the aim of this work was to examine the potential role of hematological parameters in pulmonary tuberculosis. **Material and Methods:** Present study was single-center, prospective, comparative, parallel-group, observational study, conducted in cases with age > 12 years, diagnosed with pulmonary tb on first line antitubercular therapy. **Results:** Out of 100 subjects, majority were from below 20 years age group (23%), followed by from 21-30 years (22%) and from 31-40 years (15%). Mean age of the study population was 37.86±10.58 years. 54% were males and 46% were females. Clinical assessment after complete treatment showed improvement in 79% and worsening in 21% cases. Chest x-ray report after complete treatment showed improvement in 88% and worsening in 12% cases. We noted significant reduction at subsequent follow ups in hemoglobin, WBC, Platelet, Neutrophils, Lymphocytes ($p < 0.01$) while there was no change in the reticulocyte count and ESR at subsequent follow ups in our study ($p > 0.05$). **Conclusion:** Majority of study participants were from below 20 years of age and there was male predominance was noted. Hematological abnormalities like anaemia, thrombocytopenia, leukopenia and raised ESR were quite common in patients with pulmonary TB.

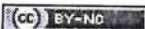
Keywords: tuberculosis, antitubercular therapy, anaemia, thrombocytopenia, leukopenia and raised ESR.

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INTRODUCTION

Tuberculosis (TB), a chronic disease caused by *Mycobacterium tuberculosis* (Mtb), is the most common infectious disease today. Roughly 10.0 million new cases occurred worldwide in 2018 and the annual death rate is 1.6 million.^{1,2} Tuberculosis has been considered a major public health burden over the past three decades with a

slight global year-over-year decline by only 2%, despite the global implementation of directly observed therapy short-course (DOTS).^{3,4} In recent years, accumulating evidence has drawn attention to various blood inflammation related parameters, which can be easily obtained by routine blood cell count (CBC) in order to be used in combination to predict cancer, TB or cardiovascular treatment outcomes.^{5,6,7} The role played by components of the blood cell count and hematological markers that can reflect the systematic inflammatory response prior to the initiation of treatment and after the 2 month intensive phase in pulmonary tuberculosis patients has not yet been fully investigated. Identifying the optimal combination of hematological markers that could be predictive for the response to treatment in pulmonary tuberculosis patients is paramount when evaluating the effectiveness of anti TB drugs. Therefore, the aim of this work was to examine the potential role of hematological parameters in pulmonary tuberculosis.

Occult Snake Bite: A Neurological Dilemma

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Vilasrao Deshmukh Government Medical College, Latur, Maharashtra, India

Abstract: *Introduction:* Occult snakebites, wherein patients are unaware of the bite and fang marks are absent, have been reported in kraits, an endemic neurotoxic snake belonging to the Elapidae family. Owing to a lack of snake bite history and unavailability of specific diagnostic tests, severe envenomation presents a challenge for physicians, unless they are aware of it and a high level of suspicion is maintained. *Case report:* A 17 years old male presented with complaints of sudden onset of both lower limb weakness, pain in both legs and low back pain of 1 day duration. Blood investigations done including complete blood count, liver and renal function tests, serum electrolytes were within normal limit. Csf study and MRI brain with whole spine screening were done and were within normal limit. Nerve conduction study was also done and was within normal limit. Patient was suspected to be having occult snake bite and was given Antisnake venom, Inj. Neostigmine along with Inj. Atropine and patient was drastically improved. *Discussion:* Krait bites are sometimes painless and occur during the night. Often, a history of snakebite and visible fang marks are absent. Patients usually experience symptoms like abdominal pain, nausea, vomiting, and malaise. This is followed by ptosis, external ophthalmoplegia, distal muscle weakness, and lastly diaphragmatic and respiratory muscle involvement. Respiratory failure is the most common cause of death. Autonomic dysfunction leads to internal ophthalmoplegia thus mimicking brain death. *Conclusion:* Occult snake bite Owing to a lack of snakebite history and unavailability of specific diagnostic tests, the diagnosis presents a challenge for practicing physicians, unless they maintain a high degree of suspicion.

Keywords: Occult bite, Krait, ASV, Neostigmine

1. Introduction

Neurotoxic snakebites, a common emergency in tropical countries, may manifest from mild ptosis and ophthalmoplegia to severe flaccid paralysis and respiratory failure⁽¹⁾. More severe neuromuscular paralysis has also been reported, labeled variously as locked-in syndrome, early morning neuromuscular paralysis, or "brain dead" presentation. Although a majority of these cases are diagnosed by a history of snakebite or the presence of visible fang marks, occult snakebites, wherein patients are unaware of the bite and fang marks are absent, are an underreported entity leading to a lack of knowledge about its existence. This has been described in kraits – an endemic neurotoxic snake belonging to the Elapidae family. They are believed to be nocturnal and possess small teeth. As a result, the victim is often unaware of the bite, and fang marks are invisible. As primary care physicians are usually the first respondents to such patients, it is essential that they are aware of this entity to prevent misdiagnosis and delayed treatment. Owing to a lack of snakebite history and unavailability of specific diagnostic tests, this diagnosis presents a challenge for practicing physicians, unless they maintain a high degree of suspicion.

2. Case Report

A 17 years old male presented with complaints of sudden onset of both lower limb weakness, pain in both legs and low back pain of 1 day duration. No history of altered sensorium, visual disturbances, difficulty in hearing, difficulty in swallowing, difficulty in speech, numbness of limbs.

No relevant past medical and family history.

Patient was initially evaluated at casualty where vitals were within normal limit, power of lower limbs were of grade 3 and plantar reflex were mute. Other neurological

examination were within normal limit. Patient was shifted into intensive care unit and were investigated.

Blood investigations done including complete blood count, liver and renal function tests, serum electrolytes and were within normal limit. Csf study and MRI brain with whole spine screening were done and were within normal limit. Nerve conduction study was also done and was within normal limit.

On next day morning patient developed drooping of both eyelid and weakness of both upper limb. On examination bilateral ptosis were present and power of upper limbs was grade 2.

Patient was suspected to be having occult snake bite and was given 10 vials of ASV, Inj. Neostigmine 1.5mg iv stat f/b 0.5mg iv 5 doses at gap of half hour interval, f/b 1mg every hour until ptosis resolved along with 0.6mg iv atropine. Following total dose of 20 vials of ASV and total of 8mg of neostigmine patient was drastically improved. On next day patient was shifted to general ward and then discharged.

3. Discussion

Krait bites are sometimes painless and occur during the night. Often, a history of snakebite and visible fang marks are absent. Neuromuscular paralysis patients present with typical symptoms within 30 min– 6 hours in case of Cobra bite and 6 – 24 hours for Krait bite; however, ptosis in Krait bite have been recorded as late as 36 hours after hospitalization. These symptoms can be remembered as 5 Ds and 2 Ps. 5 Ds – dyspnea, dysphonia, dysarthria, diplopia, dysphagia. 2 Ps – ptosis, paralysis⁽²⁾. All these symptoms are related to 3rd, 4th, 6th and lower cranial nerve paralysis. Finally, paralysis of intercostal and skeletal muscles occurs in descending manner. Other signs of impending respiratory failure are diminished or absent deep tendon reflexes and head lag. Additional features like stridor, ataxia may also be

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Evans Syndrome: A Case Report

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Abstract: ***Introduction:** Evans syndrome (ES) is a rare and chronic autoimmune disease defined as simultaneous or sequential the presence of direct Coombs-positive autoimmune haemolytic anemia (AIHA) in conjunction with immune-mediated thrombocytopenia. **Case report:** In this case report we are reporting a 25 years old unmarried female with complaints of easy fatigability, shortness of breath and petechial rashes over her trunk which gradually over period of 1 month spread over to other parts of the body associated with gum bleeding and menorrhagia for 15 days. Laboratory evaluations were suggestive of AIHA and ITP. She was treated with PRBC, platelet transfusion and steroids and she was improved. **Discussion:** The typical course of ES is characterized by a heterogeneous chronic disease with clinical variability at onset, spontaneous remissions and exacerbations. Most of the cases of ES presents primarily with severe AIHA and mild thrombocytopenia. Steroids, other immunosuppressive agents and supportive therapy remain the mainstay of treatment. **Conclusion:** Evans syndrome is a rare clinical entity. High degree of clinical suspicion from the beginning is essential for better patient outcome.*

Keywords: Evans syndrome, ITP, AIHA

1. Introduction

Evans syndrome (ES) is an uncommon autoimmune disease that was defined by Robert Evans in 1951 when he studied the relationship between autoimmune hemolytic anemia (AIHA) and immune thrombocytopenic purpura (ITP). Evans syndrome (ES) is a rare and chronic autoimmune disease defined as simultaneous or sequential the presence of direct Coombs-positive autoimmune haemolytic anemia (AIHA) in conjunction with immune-mediated thrombocytopenia [1]. Some cases significant neutropenia is associated. Abnormalities in both cellular and humoral immunity occurs [2]. It is a diagnosis of exclusion. So other conditions with similar signs and symptoms have to be ruled out by performing various tests including bone marrow examination. We report a case of a young woman who presented with symptomatic anemia and bleeding tendency and was subsequently diagnosed with Evans Syndrome.

2. Case Report

A 25yrs old unmarried female presented with complaints of easy fatigability, Shortness of breath and petechial rashes over her trunk which gradually over period of 1 month spread over to other parts of the body associated with gum bleeding and menorrhagia for 15 days. There was no history of fever, jaundice, haematuria, hematemesis, melena, arthritis, oral ulcer, photosensitivity, altered sensorium. No history of orthopnea, chest pain, cough, palpitations or pedal edema No history of any drug intake prior to or during course of illness No history of similar illness in family. On examination she had severe pallor and Petechial rashes present all over body but more over lower limbs and sacral area and few areas have non palpable purpuric lesions. Conjunctival hemorrhagic spots were there. Nolympadenopathy, icterus, cyanosis, clubbing or sternal tenderness. no hepatosplenomegaly and examination of other systems revealed no significant abnormalities.

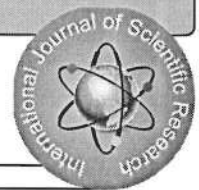
Laboratory investigations revealed severe anemia (Hb-5.9gm%) severe thrombocytopenia (4000 cells/cumm), reticulocytosis (retic count10%), ESR-10 mm/hr with

normal PT and APT. Peripheral smear showed normocytic normochromic anemia, with target cells, raised polychromasia, reduced platelets, rest cell lines normal. (Suggestive of Hemolytic anemia, Thrombocytopenia). Bone marrow aspiration cytology: Hypercellular marrow, accelerated erythropoiesis, rest normal without any evidence of metastasis and leukemia. Direct Coomb's test: Positive (IgG +C3d). Serum LDH: High (1465 U/L). Screening for sickle cell anemia and SLE was negative (ANA negative). Liver function tests and Renal function tests were normal. ICTC, HBsAg, HCV all were negative. Malarial parasite was also not identified. CHEST X-RAY and USG abdomen were normal.

The patient was given packed red cells and platelet transfusions along with oral prednisolone (2mg/kg/day) and her condition improved clinically and hematologically within 2 weeks. He was advised to continue for 2 weeks and tapered off over a period of 2 weeks. Though the she went for remission and she was advised to be under follow up as a relapsing course is expected.

3. Discussion

Evans syndrome (ES) is defined as the simultaneous or sequential association of autoimmune hemolytic anemia (AIHA) and immune thrombocytopenic purpura (ITP). [1]. The typical course of ES is characterized by an heterogeneous chronic disease with clinical variability at onset, spontaneous remissions and exacerbations. [1, 2] Most of the cases of ES presents primarily with severe AIHA and mild thrombocytopenia. Clinical phenotype includes symptoms of hemolysis (fever, pallor, jaundice, lethargy) and thrombocytopenia (petechiae, bruising and mucocutaneous bleeding). Physical examination may reveal lymphadenopathy, hepatomegaly and/or splenomegaly. Its worldwide frequency is unknown; however, research of Evans syndrome in AIHA is available in some cohorts that report an incidence of about 37%–73% in this setting. [3, 4] A higher rate in female gender has been reported in 60%–70% of ES patients. [2, 5, 6]



A STUDY ON COMPARISON OF ELECTROCARDIOGRAPHIC AND ECHOCARDIOGRAPHIC EVIDENCE OF LEFT VENTRICULAR HYPERTROPHY

General Medicine

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ABSTRACT

Background: Left ventricular hypertrophy (LVH) consists of an adaptive mechanism of the cardiac muscle due to an increased activity demand or functional overload. In fact, when LVH is evaluated simultaneously by ECG and echo, discrepancies between ECG-based LVH and echo-based LVH are observed in a certain proportion of patients. **Aims&objectives:** To study the evidence of LVH by electrocardiography and echocardiography in patients clinically suspected to have LVH. **Materials And Methods:** We conducted a prospective observational study among 25 patients admitted in general medicine ward and medical intensive care unit. Patients were selected on the basis of clinical suspicion of LVH. ECG and Echocardiography were done on these patients and LVH was detected after applying ECG criterias for LVH and Echocardiographic cut off for LVH. **Results:** Out of the 25 patients included in this study there was male predominance with majority of them belonging to the age group of 41-50 years. Hypertension was the most common etiology for LVH in this study. Among the ECG criteria for LVH, Cornell criteria was found to be most sensitive criteria. Echocardiography was superior to ECG in diagnosing LVH in this study. **Conclusion:** Left ventricular hypertrophy is a marker of volume/pressure overload which in turn is a marker of cardiovascular morbidity as well as mortality. ECG and Echocardiography are the most commonly used methods for detection for LVH. Among the ECG criteria for LVH, Cornell criteria was found to be most sensitive criteria in this study. Echocardiography was superior to ECG in diagnosing LVH in this study.

KEYWORDS

LVH, ECG, Echocardiography

INTRODUCTION

Left ventricular hypertrophy (LVH) consists of an adaptive mechanism of the cardiac muscle due to an increased activity demand or functional overload. In general, the situations that trigger this response are increased pressure or volume load, increased metabolic requirement or high-output conditions, and genetic inheritance. Hypertrophies can be characterized as concentric and eccentric, whereas in concentric, there is an increase in wall thickness with a reduction in cavity diameter, and in eccentric, there is an increase in thickness and cavity diameter.^[1] The increased voltage is implicitly considered as a function of the LV, which is in agreement with the echocardiographic findings. ECG-based LVH patterns are also seen because the slowing of the conduction velocity changes the sequence of ventricular activation even in situations where the anatomy of the left ventricle is not changed. It has been shown that slowed conduction due to fibrosis could also lead to an increase in QRS voltage, not necessarily associated with increased LV mass. In fact, when LVH is evaluated simultaneously by ECG and echo, discrepancies between ECG-based LVH and echo-based LVH are observed in a certain proportion of patients.^[2]

Researchers have proposed numerous ECG criteria to evaluate LVH, with a high specificity of 85%–90% but low sensitivity of less than 50%, and different criteria often have different sensitivity, specificity, and accuracy. Among the various criteria, Sokolow–Lyon and Cornell criteria were more commonly used in clinical practice.^[3]

There are various echo-based methods to calculate LV mass from M-mode, 2D, and 3D echo. As per ASE recommendations all measurements should be performed at end diastole (frame before mitral valve closure or the frame in the cardiac cycle in which the ventricular dimension is largest).¹³ All methods convert the volume to mass by multiplying the volume of myocardium by the myocardial density (1.05 g/mL).^[4]

Aims&objectives

To study the evidence of LVH by electrocardiography and echocardiography in patients clinically suspected to have LVH.

MATERIALS AND METHODS

This study included 25 adult patients of either sex admitted in general medicine ward and MICU of a tertiary care center. Patients were selected on the basis of clinical suspicion of LVH. Detailed clinical history and clinical examination were carried out for all the patients.

Then the patients were subjected to 12 lead standard ECG and transthoracic 2D ECHO.

ECG diagnosis of LVH were made using Sokolow Lyon criterion, Cornell criteria and Romhilt and Estes criteria.^[5]

Sokolow Lyon Criteria

S in V1 and R in V5 and V6 (whichever is larger) > 35 mm R in aVL > 11 mm

Cornell criteria:

S in V3 and R in aVL > 28 mm (men)

S in V3 and R in aVL > 20 mm (women)

Romhilt–Estes score: diagnostic > 5, probable > 4 Voltage criteria: 3 R or S in limb leads: 20 mm S in V1 or V2 > 30 mm R in V5/V6 > 30 mm ST/T wave abnormality: ST/T wave vector opposite to QRS without DIGITALIS:3

ST/T wave vector opposite to QRS with digitalis: 1 Negative terminal P wave in V1 of 1 mm in depth and 0.04 seconds in duration indicate left atrial enlargement: 3 Left axis deviation of QRS of –30 or more: 2 QRS duration > 0.09 seconds: 1 Delayed intrinsicoid deflection in V5/V6 > 0.05 seconds: 1

Echocardiography was done with the help of GE echocardiogram machine using M-mode. End diastolic interventricular septum (IVSd), posterior wall thickness (PWTd), and left ventricular internal diameter (LVIDd) were obtained by two dimensional echocardiography guided M-mode tracings. Left ventricular mass (LVM) was estimated by cube formula $0.8 \times 1.04 \times [(IVSd + LVIDd + PWTd)^3 - LVIDd^3] + 0.6$ g. All measurements were made at the end of diastole in centimeters and LVH were defined according to cutoff points according to American Society of Echocardiography.

RESULTS

In our study majority of patients (48%) belonged to the age group of 41-50 years. Male predominance (60%) was noted in our study. According to the etiology wise for LVH, hypertension was the most common cause (60%) followed by coronary heart disease (24%), followed by valvular heart disease (16%).

Out of the 25 patients, 76% of patients satisfied ECG criteria for LVH. Out of the patients fulfilling ECG criteria for LVH, Cornell criteria was the most observed criteria (68.42%) followed by Romhilt (21.05%),

Vitamin D Levels and Microvascular Complications in Type 2 Diabetes Mellitus Patients: A Study from North Keral

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DOI: <https://doi.org/10.32553/ijmbs.v7i4.2695>

ABSTRACT

Introduction: Vitamin D plays an important role in glucose metabolism. Several pleiotropic effects of Vitamin D have been studied like regulation of cell proliferation, suppression of cell



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INSIGHTS INTO ANEMIA AMONG HEMODIALYSIS PATIENTS FROM KERALA'S
EASTERN HIGHLANDS: A SINGLE CENTER INVESTIGATION

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ABSTRACT

Anemia is one of the most common complications of CKD. The prevalence and severity of anemia increases with advancing stages of CKD. In this study we analyzed the profile of anemia in patients undergoing maintenance hemodialysis at our centre. ESKD patients undergoing maintenance hemodialysis at Holy Family Hospital, Thodupuzha were included in the study. Total of 143 Chronic Kidney Disease Stage 5D patients were enrolled for the study. All the patients were on Thrice weekly Inj. Erythropoietin 4000 units given subcutaneously. All patients were receiving monthly IV iron depending on their Iron status. Hemoglobin of less than 13 gm/dl in males and less than 12 gm/dl in females was considered as anemia. Anemia was further classified as Mild, Moderate and Severe based on Hb levels. Mild anemia: Hb between 9gms to 11gms, Moderate anemia: 7gms to 9gms and Severe anemia: less than 7gms. Iron deficiency was defined by S. Ferritin <100 ng/ml and TSAT < 20%. Anemia was seen in 101 (70.6%) patients. Mild anemia was seen in 28 (19.5%) patients, moderate anemia was seen in 58 (40.6%) patients and severe anemia was seen in 15 (10.4%) patients. Among all the patients on Twice weekly HD, 95.5% patients were having anemia, while 57.8 % of patients on thrice weekly MHD were anemic. Iron deficiency was seen in 23 of 101 patients with anemia i.e. 22.77%. Functional Iron deficiency was seen in 29 of 101 patients i.e. 28.7%. (Hb: Hemoglobin, CKD: Chronic Kidney Disease, ESKD: End Stage Kidney Disease).

KEYWORDS: Anemia, Hb, CKD, ESKD, Hemodialysis.

INTRODUCTION

Chronic Kidney Disease (CKD) is a leading global public health challenge with an estimated prevalence of 13.4% (11.7% to 15.1%) world wide.^[1] The global estimated prevalence of End Stage Kidney Disease (ESKD) patients needing renal replacement therapy are between 4.901 and 7.083 million.^[1]

Anemia is one of the most common complications of CKD. The incidence of anemia increases with advancing stages of CKD and it is estimated that approximately 95% patients on maintenance hemodialysis in the US receive treatment for anemia.^[2] In spite of the advances in its treatment, anemia is still universally seen in CKD Stage 5D patients and it contribute to increase in morbidity, mortality and health care costs in dialysis patients.

MATERIALS AND METHODS

ESKD patients undergoing maintenance hemodialysis at Holy Family Hospital, Thodupuzha were included in the study. Patients with ESKD, irrespective of its etiology were included in the study. Patients less than 18 years and those with co- existing hematological disorders were excluded from study. Total of 143 Chronic Kidney

Disease Stage 5D patients were enrolled for the study. All the patients were undergoing Hemodialysis, of which 95 patients were undergoing thrice weekly hemodialysis while 48 patients were on twice weekly hemodialysis. All the patients were on Thrice weekly Inj. Erythropoietin 4000 units given subcutaneously. All patients were receiving monthly IV iron depending on their Iron status. Detailed history was taken and physical examination was done. Monthly CBC was done and 3 months average Hb was taken. Iron Studies were done once in 3 months. Hemoglobin of less than 13 gm/dl in males and less than 12 gm/dl in females was considered as anemia. Anemia was further classified as Mild, Moderate and Severe based on Hb levels. Mild anemia: Hb between 9gms to 11gms, Moderate anemia: 7gms to 9gms and Severe anemia: less than 7gms. Iron deficiency was defined by S. Ferritin <100 ng/ml and TSAT < 20%.

RESULTS

109 patients were males and 34 were females.

Anemia was seen in 101 (70.6%) patients. Anemia was seen in 72 male patients and 29 female patients (Figure: 1). Mild anemia was seen in 28 (19.5%) patients, moderate anemia was seen in 58 (40.6%) patients and



A Study on Pseudoexfoliation Syndrome in a Tertiary Care Centre

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ABSTRACT

Background

To acquire knowledge about pseudoexfoliation syndrome; its clinical manifestations and association with glaucoma.

Methods

This cross sectional descriptive study was conducted in 50 patients at Glaucoma department, Institute of Ophthalmology, Government Ophthalmic Hospital, Chennai for a period of 1 year September 2016 to August 2017.

Results

The most common age group was 61-70 years. 64% were males and 36% were females. 74% patients had bilateral pseudoexfoliation and 26% had unilateral pseudoexfoliation. 26(52%) patients with pseudoexfoliation had glaucoma, most common being open angle glaucoma. Poor pupillary dilatation was noted in 57% patients. 44 % of eyes with pseudoexfoliation had nuclear cataract and 39% had cortical cataract. Advanced glaucomatous optic nerve damage is noted more with open angle glaucoma.

Conclusion

Pseudoexfoliation syndrome, though a disease of the elderly, can also occur in less than 50 years age group. Bilateral pseudoexfoliation was more common with a male preponderance. Pseudoexfoliation syndrome is definitely a risk factor for the development of glaucoma. Though it is more commonly associated with open angle glaucoma, it may predispose to angle closure glaucoma also.

Keywords: Pseudoexfoliation syndrome, exfoliative material, open angle glaucoma

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BACKGROUND

Pseudoexfoliation (PXF) syndrome, first described by Lindberg¹ in 1917, is a systemic

disease. It causes various tissues, including the tissues in the eye, to accumulate a gray and white material. The etiology of PXF is still



Original Research Article

A STUDY ON THE CLINICAL PROFILE AND MANAGEMENT OF 35 CASES OF CONCOMITANT EXO DEVIATION AT A TERTIARY CARE CENTRE

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ABSTRACT

Background

A study to acquire knowledge about the causes, clinical manifestations and management of concomitant exo deviation.

Methods

This prospective study was conducted in 35 patients at Squint and Neuro ophthalmology department, Institute of Ophthalmology, Government Ophthalmic Hospital, Chennai for a period of 1 year October 2017 to September 2018.

Results

Maximum number of patients were of age less than 10 years in this study group and majority of patients had exotropia since birth. Constant exotropia was more compared to intermittent exotropia and it was alternating exotropia in majority. Majority of patients presented with an angle of deviation of 20-40 PDs in this study. 80% of patients in this study group required surgery and most among them underwent bilateral lateral rectus recession. Binocular single vision and mean angle of deviation improved after treatment.

Conclusions

Exodeviations occur less frequently than esodeviations. Majority of exodeviations are present from birth and require surgery. Patients who presented early in age and with less angle of deviation have better chance for restoration of binocular single vision.

Keywords: Exodeviation, Binocular single vision, Occlusion, Lateral rectus recession.

BACKGROUND

Binocular single vision is one of the hallmarks of the human race that has bestowed supremacy in the hierarchy of the animal kingdom, BSV¹ is accomplished by a perfect sensorimotor coordination of the two eyes both at rest and during movement. The two-dimensional images of an object formed at the fovea of each eye, transmitted to the respective