Determination of variation in dosimetric parameters of treatment planning with Co-60 and Ir-192 sources in high dose rate brachytherapy of cervical carcinoma

Radiation Physics and Chemistry 196 (2022) 110148, SJR-0.524, Quartile- Q2, IF-2.776, Clinical - Medical category

Presenting Author: Navin Singh

Co-Authors: Shraddha Srivastava, Misha Varghese

Department of Radiotherapy, King George's Medical University Lucknow, India

RATIONALE

Radioisotope of ^{192}Iridium (^{192}Ir) has a half-life (74 days) and is not easily accessible in developing countries. Due to the shorter half life, the treatment duration after a few months increases to an hour, which reduces the patients throughput. Also, there is need for frequent source replacement and disposal.

OBJECTIVE

To determine the differences in dosimetric parameters in patients of intracavitary brachytherapy and interstitial HDR brachytherapy using Co-60 and Ir-192 sources

METHODOLOGY

N=20 cervical carcinoma patients treated with intracavitary and interstitial brachytherapy. Patients were planned with Co-60 & Ir-192 sources. Dosimetric Parameters V100, D90, D2cc, D1cc & D0.1cc were analysed.

RESULTS

ROI*	Dosimetric parameters	Co-60	Ir-192	p-value
HR-CTV	HI	0.59 ± 0.10	0.68 ± 0.09	0.007
	CI	0.74 ± 0.05	0.73 ± 0.08	0.616
	TRAK	0.30 ± 0.10	0.29 ± 0.08	0.743
	V_{100}(%)	97.03 ± 1.93	96.42 ± 2.18	0.37
	V_{150}(%)	39.49 ± 9.56	30.56 ± 8.31	0.003
	V_{200}(%)	15.82 ± 4.79	13.05 ± 3.41	0.042
	D_{90} (Gy)	6.71 ± 0.18	6.49 ± 0.13	$p < 0.001$
Bladder	D_{2cc}(Gy)	4.39 ± 0.41	4.34 ± 0.33	0.875
	D_{1cc}(Gy)	4.70 ± 0.57	4.65 ± 0.50	0.761
	$D_{0.1cc}$(Gy)	5.64 ± 0.72	5.39 ± 0.50	0.249
Rectum	D_{2cc}(Gy)	3.96 ± 0.41	4.08 ± 0.45	0.419
	D_{1cc}(Gy)	4.38 ± 0.38	4.54 ± 0.52	0.339
	$D_{0.1cc}$(Gy)	5.23 ± 0.50	5.38 ± 0.72	0.461

Table: 1 Comparison of dosimetric parameters of Co-60 and Ir-192-based treatment plans in patients of ISBT.

ROI	Dosimetric parameters	Co-60	Ir-192	p-value
HR-CTV	V_{100} (%)	69.68 ± 14.49	69.08 ± 14.75	0.928
	V_{150} (%)	43.98 ± 14.81	42.47 ± 15.26	0.825
	V_{200} (%)	28.28 ± 11.40	26.31 ± 11.77	0.708
	D_{90}(Gy)	4.85 ± 1.30	4.98 ± 1.36	0.841
	Point A1(Gy)	6.95 ± 0.03	6.96 ± 0.03	0.636
	Point A2(Gy)	7.06 ± 0.03	7.05 ± 0.03	0.654
	TRAK	0.42 ± 0.07	0.43 ± 0.09	0.845
Bladder	D_{2cc}(Gy)	6.20 ± 2.73	6.07 ± 2.62	0.915
	D_{1cc}(Gy)	6.84 ± 2.88	6.71 ± 2.92	0.926
	$D_{0.1cc}$(Gy)	8.54 ± 3.59	8.38 ± 3.72	0.923
Rectum	D_{2cc}(Gy)	4.17 ± 1.73	4.36 ± 1.95	0.817
	D_{1cc}(Gy)	4.73 ± 2.02	5.17 ± 3.13	0.714
	$D_{0.1cc}$(Gy)	6.01 ± 2.85	6.11 ± 3.07	0.941

Table: 2 Comparison of dosimetric parameters of Co-60 and Ir-192-based treatment plans in patients of ICBT.

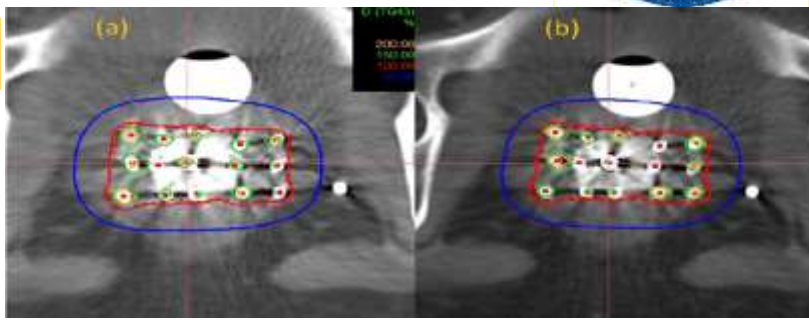


Fig: 1 Comparison of isodose distribution of an ISBT patient planned with (a) CO-60 source and (b)Ir-192 source in axial view.

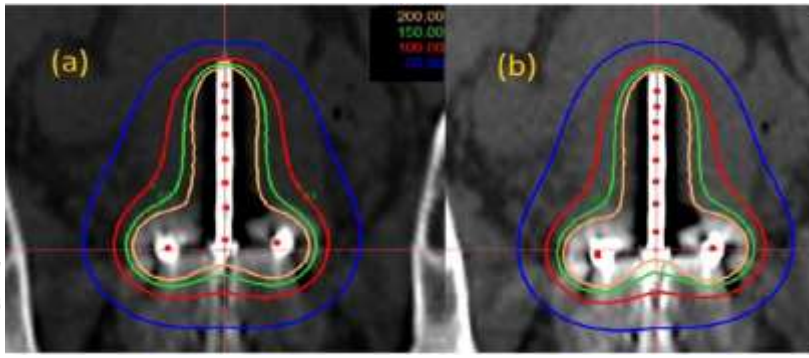


Fig: 2 Comparison of isodose distribution of an ICBT patient planned with (a) Co-60 source and (b)Ir-192 source in coronal view.

CONCLUSION

There are no significant differences in dosimetric parameters and no clinical advantage of using Co-60 over Ir-192-based brachytherapy. However, when it comes to cost management, Co-60 has a longer half-life (5.26 years), which reduces the cost of frequent source replacement and disposal.

Research Showcase 2022

Clinical – Surgical

Received : 23.11.21; Accepted :1.12.21; doi:10.1002/jso.26766

RESEARCH ARTICLE

WILEY

Radical surgery for de novo gallbladder carcinoma—Single-center analysis of prognostic factors and survival outcomes from an endemic region

Sameer Gupta, Puneet Prakash, Vijay Kumar, Arun Chaturvedi, Sanjeev Misra, Naseem Akhtar, Shiv Rajan, Preeti Agarwal, Lynette Smith, Chandrakanth Are

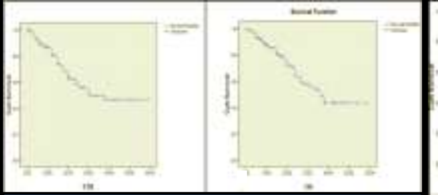
Gupta S, Prakash P, Kumar V, et al. Radical surgery for de novo gallbladder carcinoma—Single- center analysis of prognostic factors and survival outcomes from an endemic region. J Surg Oncol. 2022;125(4):631-641. doi:10.1002/jso.26766

Introduction:

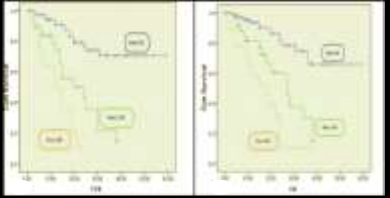
- GBC – An aggressive malignancy.
- North India – endemic for GBC.
- Limited data on treatment outcomes of de novo GBC from endemic region, undergoing curative surgery

Results:

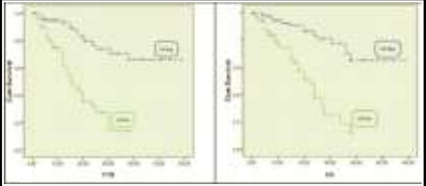
- de novo GBC (n=115) undergoing RC included out of 246 screened
- Median TTR: 31 months
- Median OS: 36 months
- Mean LN yield: 8±5
- LN positivity & histological grade significantly influenced TTR and OS



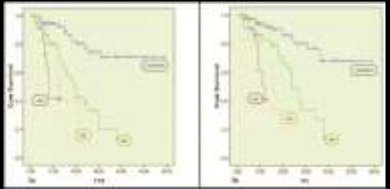
KM curves showing survival (TTR and OS)



KM curves showing effect of tumor grade on TTR and OS



KM curves showing effect of LN positivity on TTR & OS



KM curves showing effect of AJCC 8th stage on TTR and OS

Parameter	p - value	HR	95 % CI
LN positivity	0.010	7.121	[illegible]
Stage I - III A			
III B	.228	0.341	.803 – 1.908
IV A	.977	1.021	0.219 – 4.780
IV B	.911	1.109	0.208 – 6.122
Grade (Well Differentiated)			
Moderately differentiated	0.029	2.629	1.107 – 6.247
Poorly differentiated	.000	6.096	2.218 – 16.684

Cox regression analysis for TTR

Parameter	p - value	HR	95 % CI
LN positivity	0.001	12.140	2.194 – 38.413
Stage I - III A			
III B	.079	.119	.022 – 1.160
IV A	.608	.615	.100 – 3.780
IV B	.714	.683	.097 – 4.932
Grade (Well Differentiated)			
Moderately differentiated	0.050	2.664	1.000 – 7.097
Poorly differentiated	0.000	6.024	[illegible]

Cox regression analysis for OS

Methods:

- Inclusion: patients who underwent radical cholecystectomy (RC) for de novo GBC (2014 to 2018).
- KM survival curves were compared with Log Rank test.
- Cox regression model used for Multivariable analyses.

Discussion:

- One of the largest series on the survival outcomes of de novo GBC.
- Optimal LND is essential for improved survival.
- Extended resections combined with Adjuvant chemotherapy at high volume centres offer hope for locally advanced GBC.

Name: **Journal of Surgical Oncology,2022;125:631-641**

SJR: **0.986**

Best quartile: **Q1**

Impact factor: **2.74**

H-index - **115**

A Review Of Late Burn Care In Patients Presenting With Post Burn Contracture To A Tertiary Hospital

Dr.Vishal ,Dr.Harsha Vardhan ,Dr.Brijesh Mishra(MCh),Dr.Vijay Kumar(MCh)

INTRODUCTION

Primary care of a burn victim focuses on the resuscitation.

Late burn care is an important part of burn management that, if delayed, results in the formation of contractures.

Simple methods such as early skin grafting, splintage, and physical therapy prevent the development of these debilitating contractures.

AIMS AND OBJECTIVE

The aim of this paper is to identify the lacunae in late primary care, provided to patients presenting to us with post burn contractures.

MATERIALS AND METHOD

Questionnaire based retrospective observational study carried in department of Plastic Surgery of patients admitted between January 2016 and December 2018 with post burn contractures

RESULTS

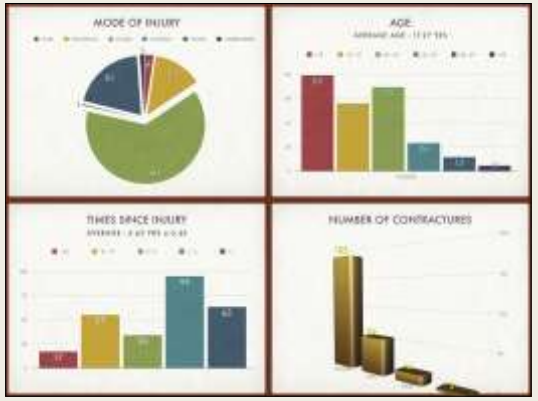


Figure 1: Top left – Mode of burns in our patient sample, with flame burns being the most common, followed by scalds and electrical burns Top right – Histogram depicting the age distribution of our patient population Lower left – Histogram depicting the time duration since injury Lower right – diagram depicting the number of contractures in our patients

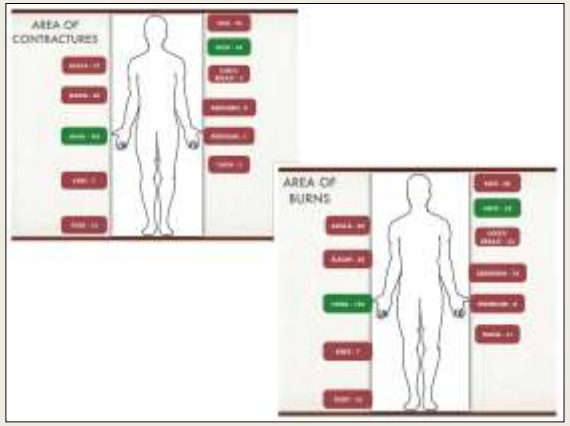


Figure 2: Diagrammatic representation of the areas affected by contractures (top left) and the areas affected by the initial burns in the same patients (bottom right)

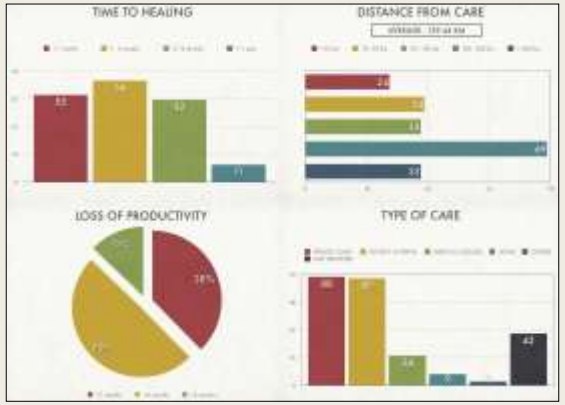


Figure 3: Top left – Diagram depicting the time required for the initial burn wound to heal Top right – Diagram depicting the distance traveled by the patient to reach our institute Lower left – Pie diagram depicting the time at which patients were able to resume productive activity (jobs, household work) Lower right – histogram depicting the place of receiving initial care

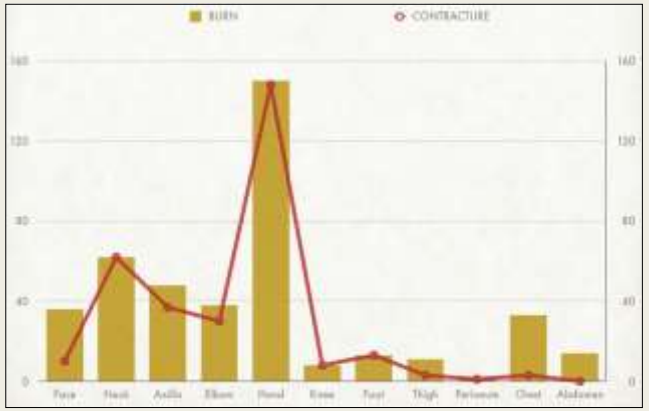


Figure 5: Diagram depicting the areas of burns (bars) and the areas of contractures (lines). Neck and hands are less forgiving than face, axilla and elbow as far as contractures are concerned, thus being the critical care areas

Figure 4: Questions asked to the patients assessing their awareness regarding burn contractures

DISCUSSION & CONCLUSION

Critical burn area like the hands and neck although play a small role in TBSA, but have high chance of formation of contractures

These wounds requires continuous treatment in the form of splintage and physical therapy, to prevent the formation of contractures.

Despite suffering from the deformity, the awareness of the patients regarding contractures was non-existent.

Awareness regarding the prevention of contractures through training and public health programs will help reduce the morbidity of contractures

Guided Needle Aspirations of Intra-Abdominal Masses; Analogy Between Liquid Based and Conventional Smear Preparation Methods

Rinki Agrahari, **Preeti Agarwal*** Shalini Bhalla, Akshay Anand, Naseem Akhtar, Anit Parihar, Abhinav Arun Sonkar, Madhu Mati Goel.
Department of Pathology, Surgery, Radiodiagnosis, Surgical Oncology, King George's Medical University, Lucknow. **Q2; IF: 3.00**

Acta Cytologica March 2022;66:197–205 .

INTRODUCTION:

- The liquid-based cytology (LBC) technique consists of an automated method for preparing thin layer cytological samples from cell suspensions collected in alcohol-based preservative. Preprocessing of samples by this method avoids superimposition artifacts by eliminating red blood cells, inflammatory cells, necrosis, multi layering, drying artifacts and cellular distortion. The present study was undertaken to evaluate LBC in intra-abdominal lesion aspirates and compare its diagnostic efficacy with conventional preparation methods with objectives to find diagnostic accuracy of LBC and agreement of LBC with conventional smear methods in guided aspiration samples from intra-abdominal masses

AIMS AND OBJECTIVE:

The Aim of the present study was to study LBC in intraabdominal masses

1. To study to find diagnostic accuracy of LBC in intraabdominal masses
2. To find the agreement of LBC with conventional smear methods in guided aspiration samples from intra-abdominal masses

MATEIRAL AND METHODS:

Procedure and sample collection:

First pass: material obtained was transferred to glass slides and at least one air dried and one alcohol fixed smear was prepared from it -Conventional smear (CS) Second pass: the LP needle with aspirated sample was rinsed in BD CytoRich™ red preservative. In 35 (39.4%) cases due to procedural difficulty second pass was not performed. The residual material in the needle hub from first pass was rinsed in the alcohol based preservative fluid vial (split sampling) in these cases.

Air dried smear was stained with Geimsa stain, alcohol fixed with hematoxylin and eosin. Sample collected in BD CytoRich™ red preservative was subjected to density centrifugation and automated smear preparation and staining via BD Surepath Prepmate systemTM.

All the smears for each case were reviewed independently by two pathologists with different years of experience in liquid-based cytology. Objective scoring of parameters on scale of 1-3 was performed to compare the adequacy, cellularity, morphology preservation and ease of diagnosis between CS and LBC preparations.

RESULTS:

A total of 113 cases presenting with intra-abdominal masses along with clinical suspicion of malignancy were analyzed. [Table 1] LBC alone was diagnostic in 80.8% of the cases and conventional smear (CS) alone was diagnostic in 71.2% cases (agreement was 83.7%, P = 0.03).[Table 2] Cellular morphology was better preserved in LBC; however, interpretation was easier in CS. [Table 3]

SN	Variable (Characteristic)	Statistic
1	Mean age ± SD (range) in years	47.73±12.67 (4–75)
2	Gender, n (%)	
	Male	43 (38.1)
	Female	70 (61.9)
3	Site involved, n (%)	
	Hepatobiliary	93 (82.3)
	Liver SOL	51 (45.1)
	Gall bladder mass	42 (37.2)
	Others	20 (17.7)
	Abdominal lump	10 (8.8)
	Retroperitoneal LN	5 (4.4)
	Omental nodule	2 (1.8)
	Pelvic mass	2 (1.8)
	Suprarenal mass	1 (0.9)
4	Slides prepared, n	
	Conventional cytology	Total 5–9 slides (average – 7 total slides with 2.3 cellular slides)
	LBC	1 slide
5	Conventional cytology diagnosis, n (%)	
	Malignant	64 (56.64)
	Benign	39 (34.51)
	Inadequate/inconclusive	10 (8.85)
6	LBC diagnosis	
	Malignant	76 (67.3)
	Benign	24 (21.2)
	Inadequate/inconclusive	13 (11.5)
7	Overall cytology (LBC + CS) diagnosis, n (%)	
	Malignant	80 (70.8)
	Benign	28 (24.8)
	Inadequate/inconclusive	5 (4.4)
8	Final histopathological diagnosis (n = 70)	
	Malignant	65 (57.5)
	Benign	05 (4.4)
	No biopsy performed	43 (38.1)
9	Passes taken, n (%)	
	2 separate passes taken	78 (69.6)
	1 pass taken (splitting of aspirated materials)	35 (30.4)

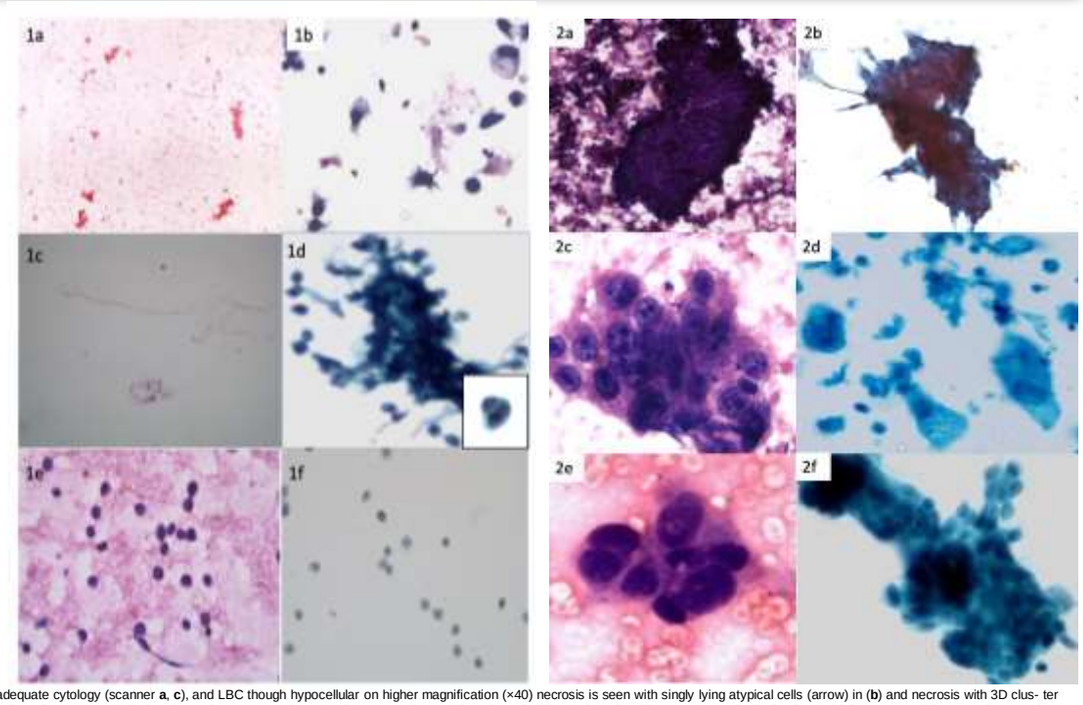


Fig. 1. Smears from guided FNA from gall bladder adenocarcino- ma: CS shows inadequate cytology (scanner **a**, **c**), and LBC though hypocellular on higher magnification (×40) necrosis is seen with singly lying atypical cells (arrow) in (**b**) and necrosis with 3D clus- ter and cannibalism seen in inset (×40) in (**d**). Both CS (×10) and LBC (×10) showing aspirate from non-Hodgkin lymphoma in a mesenteric node with scattered population of atypical lymphoid cells with open chromatin (**e**, **f**). **Fig. 2.** CS from FNA pelvic mass diagnosed as high-grade serous carcinoma (×10) shows tight cluster of atypical cells entrapped in clot, while LBC (×40) shows similar cluster in clear background (**a**, **b**). FNA from metastatic adenocarcinoma in liver (**c–f**). Both CS and LBC display malignant cells (**c**, **d**). CS (×40) with hyperchro- matic nuclei and prominent nucleoli and LBC (×40) with singly lying highly atypical cells. **e**, **f** Cellularity-wise LBC fairs better than CS. Clusters of atypical cells have smaller cell size as seen in LBC (×40) as compared to cell size of atypical cell cluster in CS (×40).

Table 2. LBC versus CS on basis of cellularity, morphology preservation, and ease of diagnosis site wise

Variable	Total, n	Liver SOL		Gall mass		Abdominal lump		Suprarenal mass		Omental nodules		Retroperitoneal lymph node		Pelvic mass	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
Cellularity															
LBC = CS	41	21	46.7	11	27.5	5	50.0	1	100	0	0	2	40	1	50
LBC > CS	43	14	29.8	21	52.5	5	50.0	0	0	0	0	2	40	1	50
LBC < CS	23	12	25.5	8	20.0	0	0	0	0	2	100	1	20	0	0
$\chi^2 = 17.108$ (df = 12), $p = 0.146$															
Ease of diagnosis															
LBC = CS	41	21	44.7	12	30.0	5	50.0	0	0	0	0	2	40	1	50
LBC > CS	41	13	27.7	20	50.0	5	50.0	0	0	0	0	2	40	1	50
LBC < CS	35	13	27.7	8	20.0	0	0	1	100	2	100	1	20	0	0
$\chi^2 = 18.132$ (df = 12), $p = 0.112$															
Morphology preservation															
LBC = CS	46	23	48.9	15	37.5	5	50.0	0	0	0	0	3	40	1	50
LBC > CS	43	13	27.7	22	55.0	5	50.0	0	0	0	0	3	40	1	50
LBC < CS	18	11	23.4	3	7.5	0	0	1	100	2	100	1	20	0	0
$\chi^2 = 25.280$ (df = 12), $p = 0.014$															

Table 3. Morphological comparison of LBC versus CS

	Advantages	Disadvantages
3C	Total number of smears prepared was one Average number of cellular smears was one Time required in screening was less Smaller area to screen in a single slide Loss of background obscuring material (Images 1f and 2f) Better preserved nuclear architecture Onsite cytotechnologist/pathologist is not needed to prepare good quality smears (needle directly rinsed into liquid fixative)	Smaller cell size (Images 1e and f) Decreased/loss of informative background (necrosis, hemorrhage)
3	Larger cell size Better assessment of the arrangement of cells Background tumor diathesis well preserved	Total number of smears prepared 5–9 (average 7) Average number of cellular smears was 2.7 Time required in screening more Multiple slides to screen Entrapment of cells in hemorrhage (Image 2a) Onsite cytotechnologist/pathologist is required to prepare good quality smears

DIACUSSION AND CONCLUSIONS:

There was no significant difference observed between sensitivities of CS and LBC alone in diagnosing intra-abdominal lesions. Hence, our findings do not support the use of LBC as a preferred method of smear preparation in guided intra-abdominal FNA for routine examination. However, LBC ensures the complete sample transfer even the hub material and has almost perfect agreement for cytodiagnosis. It may be used to compliment the CS in intra-abdominal guided aspirate samples. It can also be used to collect cellular material from remote areas to the referral laboratory for interpretation.

Palliative radiotherapy: a one-week course in advanced head and neck cancer – quality of life outcomes

CATEGORY G – PG Students, PhD Scholars and M.Sc. Nursing/BMJ Supportive & Palliative Care/Impact Factor 4.6

Prakash S, Chakrabarti D, Kumar R, *et al*
Palliative radiotherapy: a one-week course in advanced head and neck cancer – quality of life outcomes
BMJ Supportive & Palliative Care **Published Online First: 15 April 2022** doi: 10.1136/bmjspcare-2021-002908

Sadanand Prakash#[1], **Deep Chakrabarti#[1]**, Rajendra Kumar[1], Manas Mani Agrawal[1], Mranalini Verma[1], Sudhir Singh[1], Seema Gupta[1], Kirti Srivastava[1], Rajeev Gupta[1], Madan Lal Brahma Bhatt[1]
 # Equal first authors
deep@kgmcindia.edu, drrkumar10@gmail.com, drmlbhatt@yahoo.com, @DeepOnco
1-Department of Radiotherapy, King George's Medical University, Lucknow, India

BACKGROUND

Head and neck squamous cell cancers (HNSCC) are a major public health problem in developing countries like. Cancers of the lip and oral cavity are the second most common cancer overall, and the most common among Indian males. The major proportion (nearly 75%) of HNSCC in a low-middle-income country like India present at an advanced stage, and consideration of palliative strategies often go hand in hand with radical or curative approaches of treatment.

The most pertinent measure of a cancer-directed treatment to the patient and caregivers are the duration of life that is prolonged by a particular therapeutic intervention (i.e. overall survival) and to what extent can the patient function with minimal symptoms for the remaining duration of his life (i.e. quality of life). Quality of life is unique for its ability to quantify physical, mental, emotional, social, and spiritual dimensions which are not measured by other clinical endpoints. While multiple regimens exist for the palliative treatment of HNSCC patients by radiotherapy, there is no international consensus on their choice and their QoL has been studied sparsely. We aimed to evaluate a one-week palliative radiotherapy regimen against a longer regimen for advanced head and neck cancers in terms of quality of life.

METHODS

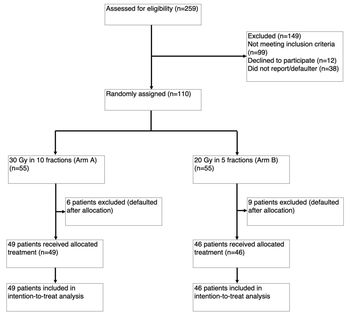
Between July 2019 and June 2020, we randomised patients with advanced, non-metastatic, head and neck squamous cell carcinomas(stage IVA-B) with WHO performance score of 2 or higher to receive 30 Gy in 10 fractions over two weeks (arm A) or 20 Gy in 5 fractions over one week (arm B). Quality of life was assessed using EORTC QLQ-C30 and QLQ-H&N35 questionnaires at baseline and post-radiotherapy. The primary endpoint was the EORTC-defined global health status. Secondary endpoints were functional and symptom scores of QoL, response to radiotherapy, and acute toxicities. The primary aim was to evaluate the one-week regimen in terms of QoL to the longer regimen.

The study protocol was approved by the Institutional Ethics Board (Registration No.: ECR/262/Inst/UP/2013/RR-16, approval reference code: 97th ECM II B-Thesis/P114). The study was carried out per the international guidelines for Good Clinical Practice and conformed to the ethical standards set by the Declaration of Helsinki.

The analysis was carried out according to the intention-to-treat principle. Categorical variables were compared using the Fisher exact test (for cell count less than five) or the Chi-square test for proportions. Continuous data were compared using the student t-test for normal data and the Mann Whitney U test otherwise. Kaplan-Meier estimates were used to describe overall survival and progression-free survival, and the two arms were compared using the log-rank (Mantel-Cox) test. All tests were two-sided with a significance level set at a P-value of 0.05. Hazard ratios (HR) and differences in means were reported as applicable, along with 95% confidence intervals (CI). The data were analysed with IBM SPSS Statistics software version 24 for Linux (IBM Inc., New York, NY) and R software (www.r-project.org).

RESULTS

110 patients were randomised, the number of patients in the final analysis was 95: 49 in arm A and 46 in arm B. Baseline characteristics were similar. Clinical outcomes post-treatment were comparable. Post-radiotherapy, there were improved scores for functional and symptom scales, the differences were non-significant. **The duration of treatment was significantly reduced in arm B(P<0.01) with a significantly lower score for financial difficulty(P<0.001). The difference in global health status(primary endpoint) was non-significant(P=0.82).** The median overall survival was 7 months, the median progression-free survival was 5 months, and these did not vary between the two groups.



Baseline patient characteristics

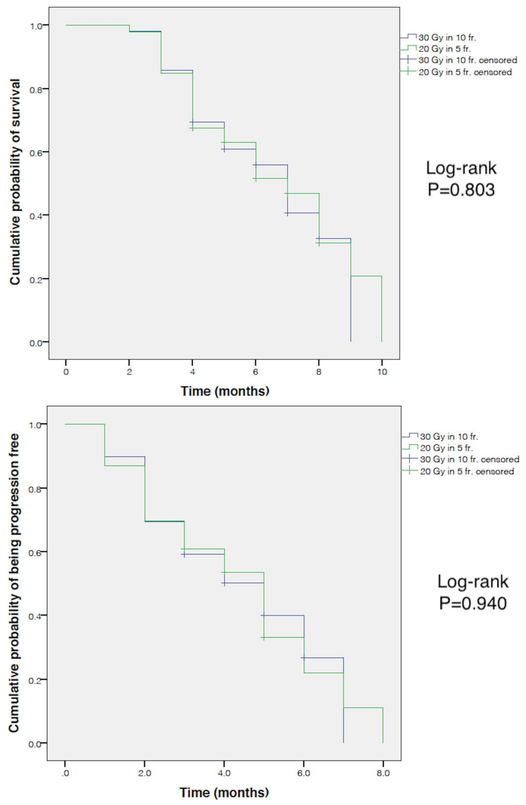
	Arm A, 30Gy in 10 fr.	Arm B, 20Gy in 5 fr.	
	n=49 (%)	n=46 (%)	P value
Age in years, median (IQR)	48 (39-60)	49.5 (41-60)	0.89
Sex			0.44
Male	45 (92)	40 (87)	
Female	4 (8)	6 (13)	
ECOG			0.43
2	34 (69)	29 (63)	
3	15 (31)	17 (37)	
Site of primary			0.30
Oral cavity	33 (67)	31 (67)	
Oropharynx	7 (14)	7 (15)	
Hypopharynx	2 (4)	2 (4)	
Larynx	5 (10)	5 (11)	
Others	2 (4)	1 (2)	
T staging			0.54
T3	1 (2)	1 (2)	
T4a	15 (31)	11 (24)	
T4b	33 (67)	34 (74)	
N staging			0.68
N0	2 (4)	1 (2)	
N1	7 (14)	8 (17)	
N2	19 (39)	22 (48)	
N3	21 (43)	15 (33)	

Response and toxicities of palliative radiotherapy

	Arm A, 30Gy in 10 fr.	Arm B, 20Gy in 5 fr.		
	n=49 (%)	n=46 (%)	P value	HR (95% CI)
Reduction in primary, post RT	37 (76)	35 (76)	0.95	0.99 (0.79-1.25)
Reduction in lymph node, post RT	38 (78)	33 (72)	0.52	1.08 (0.85-1.37)
Pain (Visual analogue scale)				
Baseline, median (IQR)	6 (5-8)	7 (5-8)	0.77	
Post RT, median (IQR)	4 (3-6)	4 (3-6)	0.93	
Duration in days, median (IQR)	13 (12-14)	5 (5-6)	<0.01	
Status post-RT			0.86	
Partial response	25 (51)	24 (52)		
Stable disease	9 (18)	10 (22)		
Progressive disease	15 (31)	12 (26)		
Skin reactions			0.71	
Grade 0	5(10)	7 (15)		
Grade 1	23 (47)	21 (46)		
Grade 2	18 (37)	17 (37)		
Grade 3	3 (6)	1 (2)		
Mucosal reactions			0.65	
Grade 0	5 (10)	2 (4)		
Grade 1	26 (53)	25 (54)		
Grade 2	16 (33)	18 (39)		
Grade 3	2 (4)	1 (2)		

CONCLUSIONS

In conclusion, this superiority trial with a negative result showed that a longer radiotherapy regimen for the palliative treatment of patients with advanced head and neck cancers with a poor performance status (ECOG 2 or higher) is not superior to short-course radiotherapy delivered in one week for quality of life and entails significantly higher financial toxicity and longer treatment time. Short-course palliative radiotherapy should be followed as a standard, particularly in developing countries, for the better utilisation of financial and logistical resources.



Kaplan-Meier plots showing overall survival between the two arms.

Kaplan-Meier plots showing progression-free survival between the two arms.

Key questions

What is already known about this subject?

Quality of life is a crucial metric for palliation. Multiple radiotherapy regimens are used in clinical practice to manage advanced head and neck cancers in the palliative setting. While any of these regimens can be used in theory, their implications in terms of quality of life are not established.

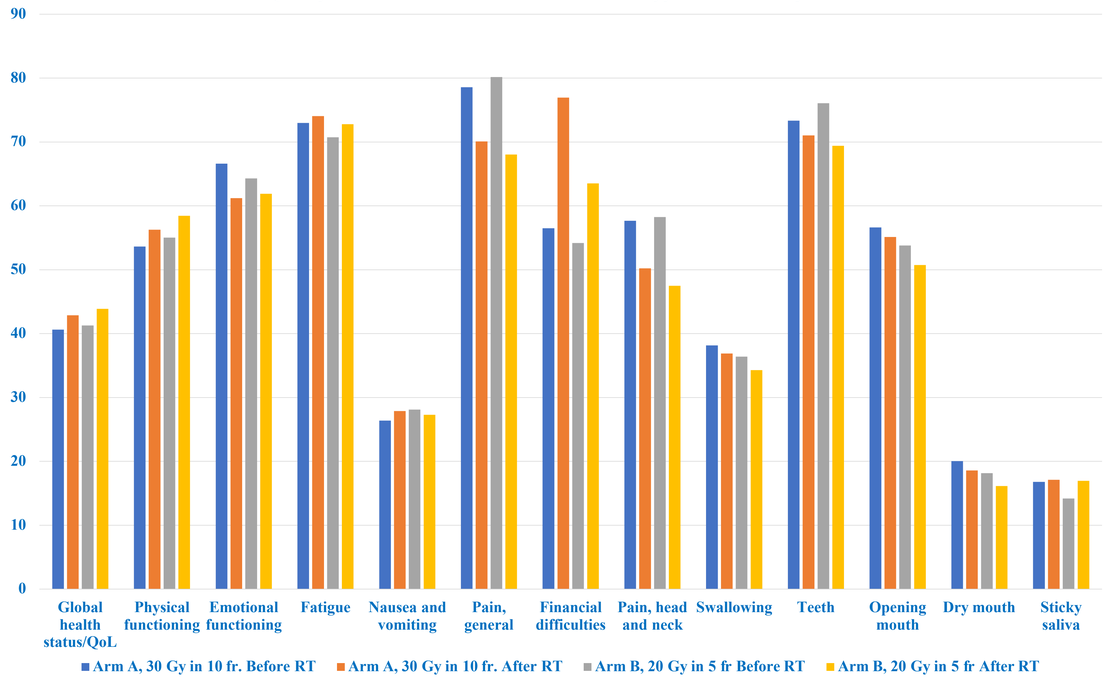
What does this study add?

Our study establishes that a longer radiotherapy schedule is not superior to one-week short-course radiotherapy in terms of quality of life, clinical response and acute toxicities. Also, the one-week regimen leads to significant reductions in treatment time and financial toxicity.

How might this impact on clinical practice?

One week short-course palliative radiotherapy should be a standard, particularly in low/middle-income countries as it is associated with improved logistics and resource utilisation.

Quality of life scores before and after radiotherapy in the two study arms



Circulating Soluble Lectin-like Oxidized low-density Lipoprotein Receptor-1(sLOX-1): A Diagnostic Indicator Across the spectrum of Acute Coronary Syndrome

Authors: Wahid Ali [1], Sandeep Kumar [1], Sridhar Mishra [2], Akshay Pradhan [3], Rishi Sethi [3], Rashmi Kushwaha [1], U.S. Singh[1] and Marco Alfonso Perrone [4]

Affiliations: 1Department of Pathology and 3Lari Cardiology Centre, Department of Cardiology, King George's Medical University, 2Department of Pathology, Dr. Ram Manohar Lohia Institute of Medical Sciences, 4Department of Cardiology, University of Rome Tor Vergata, Rome, Italy

Category: Pre-clinical

CONTEXT

- Coronary artery disease (CAD) is a major health problem worldwide & Asian countries [1] and diagnosed with an invasive coronary angiogram (CAG) and radiologic techniques.
- There is a number of blood-based biomarkers that have been studied in the diagnosis of CAD and have been shown to have limited clinical correlation [2,3].
- Cardiac troponin is the best marker for diagnosing acute coronary syndrome (ACS). However, early diagnosis using markers for plaque instability may be of significance.
- Soluble lectin-like oxidized low-density lipoprotein receptor-1 (sLOX-1) plays an important role in the pathogenesis of atherosclerosis plaque rupture and may be a potential biomarker of coronary artery disease (CAD), including ACS.
- In ACS patient's sLOX-1 is more precisely identified in CAD as compared to the Troponin T marker.9 However, a higher concentration of sLOX-1 in CAD patients after the PCI has not been completely investigated.

OBJECTIVES

- To compares the utility of sLOX-1 levels in risk assessment of patients of ACS/CAD for future recurrence.

METHODOLOGY

- **Study Type:** Case and Control
- **Study Group: 160 subjects,** including patients who underwent coronary angiography (n=18, group I), patients of stable CAD who underwent percutaneous intervention (n=50, group II), patients of the acute coronary syndrome (n=64, group III) and healthy controls (n=28, group IV).
- **Inclusion Criteria:**
- Subjects of both sexes between 40 to 81 years, Subjects who have angiographically proven coronary artery diseases, Subjects willing to give written informed consent
- **Exclusion Criteria:-**
- Patients with histories of significant concomitant diseases including: Hepatic failure, Renal failure, Abnormal liver function, Hepatitis, cardiomyopathy, Congenital heart disease, Bleeding disorders, Previous thoracic Irradiation therapy and Malignant diseases
- Not willing to give written informed consent
- **Samples collection and serum isolation:**
- 3.0 ml of peripheral blood was collected from cases and controls in plain, EDTA and Fluoride vials (NOVAC, POLYMED, POLY MEDICURE LTD, India)
- Serum was separated by centrifugation at 1900g for 10 min, followed by a 10 min high-speed centrifugation at 16,000g and stored at -80° C until further processing.
- **Biochemical Examination:**
- All biochemical parameters were measured by fully automated biochemical analyzer (ARCHITECT i2000SR, Abbott Diagnostic & Selectra ProXL, ELITech Group).
- **Serum sLOX-1** was quantified by a commercially available enzyme-linked immunosorbent assay (ELISA) kit per the manufacturer's instructions (USCN, Wuhan, China).

RESULTS

Table 1. Intergroup Comparison of Pre-treatment Serological parameters

	Group I (n=18)	Group II (n=50)	Group III (n=64)	Group IV (n=28)	ANOVA	
	Mean±SD	Mean±SD	Mean±SD	Mean±SD	F value	P value
Neutrophil-Lymphocyte Ratio	1.22±0.677	1.90± 1.428	1.88±1.377	1.45±0.86	2.029	0.112
Platelet-Lymphocyte Ratio	48.57±24.33	52.60±25.20	52.13±24.89	30.38±13.67	6.614	**<0.001**
Vitamin D	10.76±5.08	16.29±3.99	10.16±4.52	31.84±6.44	139.232	**<0.001**
Magnesium	1.45±0.303	1.344±0.369	1.52±0.339	1.56±0.516	2.753	**0.045**
Creatinine Kinase MB	17.39±26.35	67.78±73.22	14.78±19.97	14.96±3.82	16.456	**<0.001**
Homocysteine	5.31±2.77	41.75±45.10	9.51±12.15	9.92±2.50	17.762	**<0.001**
Vitamin B12	323.61±230.48	282.60±207.82	306.56±453.74	340.29±260.14	0.192	0.902
Thyroid Stimulating Hormone	3.83±4.76	3.73±4.15	3.08±4.22	2.68±0.99	0.612	0.608
Folate	13.62±5.44	14.72±5.78	10.73±9.02	23.70±10.27	16.948	**<0.001**
sLOX-1	44.43±42.86	815.04±683.38	995.16±611.77	28.68±9.97	29.492	**<0.001**

Table 2. Between Group Comparison of Pre-treatment Serological Parameters

Serological parameters	Group I vs. Group II			Group I vs. Group III			Group II vs. Group III			Group I vs. Group IV			Group II vs. Group IV		
	Mn diff.	SE	P value	Mn diff.	SE	P value	Mn diff.	SE	P value	Mn diff.	SE	P value	Mn diff.	SE	P value
Neutrophil-Lymphocyte Ratio	-0.67	0.35	0.214	-0.66	0.34	0.206	0.01	0.24	1.000	-0.23	0.38	0.931	0.44	0.30	0.445
Platelet -Lymphocyte Ratio	-4.02	6.43	0.924	-3.55	6.24	0.941	0.47	4.41	1.000	18.19	7.06	0.053	22.22	5.52	**0.001**
Vitamin D	-5.53	1.32	**<0.001**	0.60	1.29	0.966	6.13	0.91	**<0.001**	-21.08	1.46	**<0.001**	-15.55	1.14	**<0.001**
Magnesium	0.11	0.10	0.695	-0.06	0.10	0.923	-0.18	0.07	0.067	-0.10	0.12	0.811	-0.22	0.09	0.079
Creatinine Kinase MB	-50.39	12.05	**<0.001**	2.61	11.70	0.996	53.00	8.28	**<0.001**	2.42	13.25	0.998	52.82	10.35	**<0.001**
Homocysteine	-36.44	7.28	**<0.001**	-4.20	7.06	0.934	32.24	5.00	**<0.001**	-4.61	8.00	0.939	31.83	6.25	**<0.001**
Vitamin B12	41.01	92.89	0.971	17.05	90.16	0.998	-23.96	63.79	0.982	-16.67	102.10	0.998	-57.69	79.77	0.888
Thyroid Stimulating Hormone	0.09	1.07	1.000	0.74	1.04	0.893	0.65	0.74	0.815	1.14	1.18	0.768	1.05	0.92	0.666
Folate	-1.10	2.21	0.959	2.88	2.15	0.537	3.99	1.52	**0.047**	-10.09	2.43	**<0.001**	-8.98	1.90	**<0.001**
sLOX-1	-770.61	150.06	**<0.001**	-950.72	145.65	**<0.001**	-180.12	103.04	0.303	15.75	164.93	1.000	786.36	128.86	**<0.001**

Table 3. Intergroup comparison of post-intervention serological parameters

	Group I (n=18)	Group II (n=50)	Group III (n=64)	ANOVA	
	Mean±SD	Mean± SD	Mean±SD	F value	P value
Neutrophil-Lymphocyte Ratio	1.565±0.63	2.588±1.78	2.53±1.67	2.915	0.058
Platelet - Lymphocyte Ratio	56.95±28.26	65.95±27.10	65.66±27.06	0.821	0.442
Vitamin D	10.82±5.16	16.25±4.03	10.13±4.53	28.262	**<0.001**
Magnesium	1.358±0.570	1.494±0.654	1.546±0.641	0.616	0.542
CKMB	34.00±32.47	99.32±84.80	30.25±26.79	22.490	**<0.001**
Homocysteine	15.14±5.48	61.18±52.23	18.73±16.49	24.825	**<0.001**
Vitamin B12	321.50±230.74	282.96±207.86	307.67±453.61	0.107	0.898
TSH	3.83±4.77	3.74±4.15	3.08±4.22	0.428	0.653
Folate	13.85±5.69	14.73±5.84	10.87±8.93	3.957	**0.021**
sLOX-1	74.01±58.35	1137.36±772.59	1945.50±843.90	47.053	**<0.001**

Table 4. Between-group comparison of post-interventional serological parameters

	Group I vs. Group II			Group I vs. Group III			Group II vs. Group III		
	Mn diff.	SE	p-value	Mn diff.	SE	p value	Mn diff.	SE	p value
Neutrophil-Lymphocyte Ratio	-1.02	0.45	0.060	-0.97	0.43	0.070	0.06	0.31	0.981
Platelet - Lymphocyte Ratio	-9.00	7.49	0.454	-8.71	7.27	0.456	0.29	5.14	0.998
Vitamin D	-5.43	1.22	**<0.001**	0.69	1.18	0.828	6.12	0.84	**<0.001**
Magnesium	-0.14	0.18	0.719	-0.19	0.17	0.512	-0.05	0.12	0.901
CKMB	-65.32	15.60	**<0.001**	3.75	15.14	0.967	69.07	10.71	**<0.001**
Homocysteine	-46.04	9.41	**<0.001**	-3.59	9.14	0.918	42.45	6.46	**<0.001**
Vitamin B12	38.54	96.76	0.916	13.83	93.92	0.988	-24.71	66.44	0.927
TSH	0.09	1.17	0.997	0.75	1.14	0.786	0.66	0.81	0.691
Folate	-0.87	2.06	0.906	2.99	2.00	0.297	3.86	1.41	**0.020**
sLOX-1	-1063.3	208.43	**<0.001**	-1871.4	202.31	**<0.001**	-808.14	143.12	**<0.001**

Table 5. Diagnostic of sLOX-1 in CAD

Diagnostic	Cut-off value	AUC	p-value	Sensitivity (95% CI)	Specificity (95% CI)
Cases (group I+II+III) vs. control	≥47.15	0.925	**< 0.0001**	87.88 (81.06-92.91)	100.00 (87.66-100.0)
ACS vs. control	≥48.50	0.966	**0.01**	93.75 (84.76-98.27)	100.00 (87.66-100.0)
Stable CAD underwent PCI vs. Control	≤47.50	1.00	**< 0.0001**	100.00 (87.66-100.0)	100.00 (92.89-100.0)

CONCLUSION

- **We found increased sLOX-1 levels in all the patient groups with a statistically significant increase in all the groups before and after PCI.**
- **A significant correlation of post-treatment sLOX-1 level with future recurrence.**
- **sLOX-1 is a more sensitive and specific biomarker for ACS that provides additional diagnostic values**
- **Circulating levels of sLOX-1 might be a diagnostic and prognostic marker for atherosclerotic-related events**

PUBLISHED ARTICLE INFORMATION


Journal of Clinical Medicine

Submit to this Journal

Review for this Journal

Edit a Special Issue

Article Menu

Open Access Article

Circulating Soluble Lectin-like Oxidized Low-Density Lipoprotein Receptor-1 (sLOX-1): A Diagnostic Indicator across the Spectrum of Acute Coronary Syndrome

by Sandeep Kumar, Wahid Ali, Sridhar Mishra, Akshyaya Pradhan, Rishi Sethi, Rashmi Kushwaha, Uma Shankar Singh and Marco Alfonso Perrone

IF: 4.69

Name of Journal: JOURNAL OF CLINICAL MEDICINE

Year of Publication: 2021

Vol. & page number (or doi number): 10(23), 5567; doi.org/10.3390/jcm10235567

Scimago Journal Rank, Q1/Q2 category: 1.04

Effect of Diet Components on the Sleep Quality of First-year Medical Students of a Medical University of Northern India

Shubhajeet Roy[1]*, Archna Ghildiyal[2]

(1: MBBS 3rd Year, Faculty of Medical Sciences, King George's Medical University, Lucknow; 2: Professor, Department of Physiology, King George's Medical University, Lucknow)

Indian Journal of Sleep Medicine 2021;16(4):116-124. doi: *10.5005/jp-journals-10069-0089*

RESEARCH SHOWCASE 2022: Category (h)-U.G. Students (MBBS)

Rationale, Aim and Objectives:

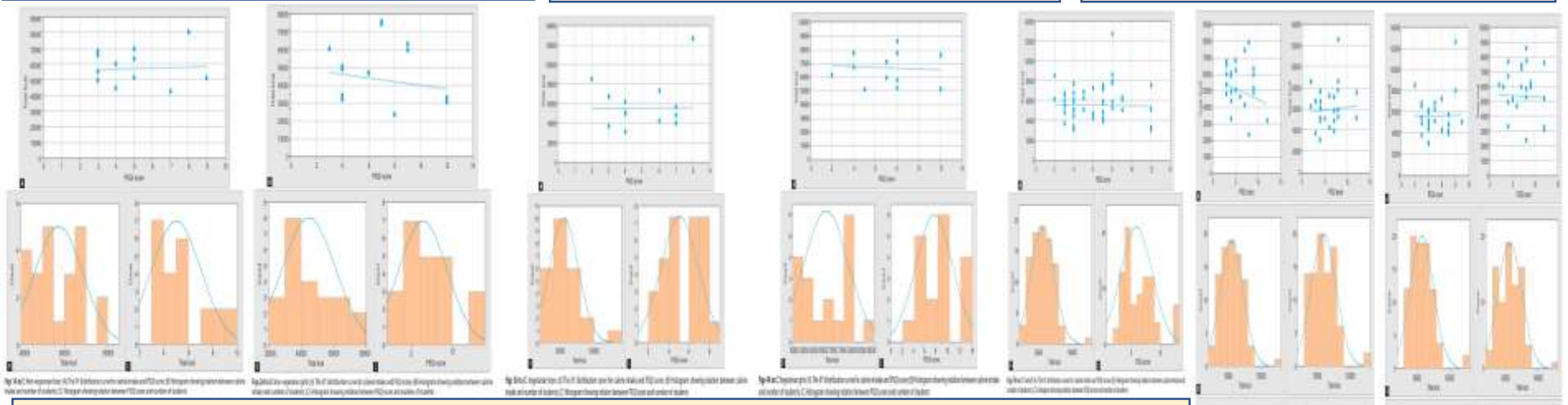
The primary objective was to find out the effect of diet components: **protein-rich food (represented by the non-vegetarians)** or **carbohydrate- rich food (represented by the vegetarians)** on the sleep quality of first-year medical students. The secondary objective was to find whether the total calorie intake and the sleep quality of the subjects had any relation.

Methodology:

Students were divided into 4 groups according to gender and whether they are vegetarians or non-vegetarians. All were required to fill their daily food consumption questionnaire each day, for 28 days. At the end of this period, they had to fill the Pittsburgh Sleep Quality Index (PSQI) questionnaire. The total calorie intake and PSQI scores were calculated and analysed.

Result:

The average calorie intake and PSQI score of non-vegetarians were 50747.78 ± 15068.05 kcal and 5.76 ± 2.57, respectively, and that of vegetarians were 60342.63 ± 18309.56 kcal and 6.02 ± 2.66, respectively. No significant correlation was found to exist between calorie intake and sleep quality, in any of the individual groups nor overall.



Discussion and Conclusion:

The average calorie intake of vegetarians was higher, but their sleep quality was worse, due to more carbohydrate consumption and less protein consumption as compared to the non-vegetarians. More of carbohydrate and less of protein had resulted into their poorer sleep quality. Boys had overall better sleep quality than girls. Excess intake of snacks and fast food and consuming less variety of foods, as mostly seen in girls, were also found to be the dietary reasons behind their poorer sleep quality. This study will help hostellers in finding the balanced combination of food components that are best for them to lead a healthy life and get the very needed sound sleep and can be beneficial for different institutions in designing their balanced hostel mess menu.

Prevalence of primary immunodeficiency syndromes in tuberculous meningitis: A case-control study

Journal of infectious disease and public health 2022: 15:29-35 SJR 1.28 Q1

Background

Only a proportion of patients with tuberculosis develop tuberculous meningitis. We hypothesize that inherent abnormalities in the host's innate or adaptive immune system may affect the outcome in tuberculous meningitis. In this study, we evaluated the proportion of underlying primary immunodeficiency in patients with tuberculous meningitis and its impact on the outcome.

Methods

Newly-diagnosed cases with tuberculous meningitis and healthy controls were included. Patients with HIV disease were excluded. Blood specimen were subjected to immunological assessment to detect primary immunodeficiency syndrome/s. We estimated serum levels of IgG, IgA, IgM, IgE and IgD along with complement C3, C4, and C5 assay. Absolute lymphocyte count was obtained from an automated three-part cell counter. Flow cytometry was used to enumerate the following lymphocyte subsets: T Cell (CD3, CD4, CD8), B cell (CD19/CD20), and Natural killer cells (CD16 and CD56). Cases were followed for 6 months. Modified Barthel Index was used as a measure of disability.

Results

We included 55 cases with tuberculous meningitis and 30 healthy controls. We noted that among immune parameters, absolute lymphocyte count and CD4 T-cell count in the tuberculous meningitis group was lower; higher serum IgG levels were noted in the poor outcome group.

Conclusion

Host's immune factors contribute to the pathogenesis of tuberculous meningitis. Absolute lymphocyte count and CD4+ T-cell count were lower in tuberculous meningitis cases. Higher serum IgG levels may be associated with a poor outcome. A study with a larger sample size is needed to confirm our findings.

VARIABLE	CASES (N=55)	CONTROLS (N=30)	"P" VALUE
AGE in Yrs			0.207
Mean +/- SD	27.71+/-11.65	27.40+/-4.89	
Median	24.00	28.50	
Inter Quartile Range	12.00	7.50	
CD3			0.730
Mean +/- SD	939.92+/-560.53	1061.29+/-849.84	
Median	809.15	813.60	
Inter Quartile Range	615.60	657.59	
CD 4			**0.005**
Mean +/- SD	402.79+/-244.29	659.24+/-579.23	
Median	327.07	536.59	
Inter Quartile Range	250.21	470.00	
CD 8			0.682
Mean +/- SD	457.52+/-325.69	424.50+/-301.62	
Median	386.80	351.26	
Inter Quartile Range	361.66	501.00	
Absolute Lymphocyte count			**0.040**
Mean +/- SD	1320.18+/-680.72	1690.00+/-1042.33	
Median	1100.00	1450.00	
Inter Quartile Range	600	725	
CD19, CD20			0.974
Mean +/- SD	202.41+/-170.19	227.8787+/-288.23	
Median	155.85	146.05	
Inter Quartile Range	190.09	185.57	
CD16, CD56			0.092
Mean +/- SD	129.58+/-131.37	171.34+/-133.70	
Median	92.90	123.42	
Inter Quartile Range	104.82	220.67	
C3			0.163
Mean +/- SD	538.86+/-18.30	535.49+/-12.87	
Median	542.41	536.69	
Inter Quartile Range	19.54	13.60	
C4			0.815
Mean +/- SD	305.46+/-36.88	303.22+/-49.61	
Median	319.60	319.08	
Inter Quartile Range	25.79	22.90	
C5			0.502
Mean +/- SD	968.41+/-1235.22	801.19+/-1026.97	
Median	451.55	432.19	
Inter Quartile Range	824.63	779.21	
IMMUNOGLOBULIN G			0.662
Mean +/- SD	2.22+/-1.21	2.83+/-3.30	
Median	1.89	1.8300	
Inter Quartile Range	1.98	2.00	
IMMUNOGLOBULIN A			0.916
Mean +/- SD	1632.99+/-404.31	1632.75+/-413.50	
Median	1728.14	1752.69	
Inter Quartile Range	528.14	516.17	
IMMUNOGLOBULIN M			0.090
Mean +/- SD	43.40+/-35.75	37.81+/-32.54	
Median	31.44	24.04	
Inter Quartile Range	28.80	15.68	
IMMUNOGLOBULIN E			0.139
Mean +/- SD	401.21+/-298.25	301.15+/-276.26	
Median	307.30	189.40	
Inter Quartile Range	472.06	314.36	
IMMUNOGLOBULIN D			0.365
Mean +/- SD	22.36+/-12.72	29.26+/-25.72	

Natural Orifice Endosonographic Colposuspension With Rectopexy for Combined Pelvic Organ Prolapse : A Feasibility Study

Abhijit Chandra [1], Pritheesh Rajan [1], Vivek Gupta [1], Arshad Ahmad [2], Anit Parihar [3], Gourav Yadav [3], Uma Singh [4], Mahesh Rajashekhara [1], Sanjiv K Patankar [5], Ravi Patel [1]

1. Department of Surgical Gastroenterology, King George's Medical University, Uttar Pradesh, India
2. Department of Surgery, King George's Medical University, Uttar Pradesh, India
3. Department of Radiodiagnosis, King George's Medical University, Uttar Pradesh, India
4. Department of Obstetrics and Gynaecology, King George's Medical University, Uttar Pradesh, India
5. BKL Walawalkar Rural Medical College and Hospital, Dervan, Chiplun, Maharashtra, India

Introduction

- Pelvic organ prolapse (POP),occurs in about 50% of parous women and increases with age, although rectal prolapse (RP) alone is estimated to affect only 2.5% per 10,000 population.[1,2]
- There is no universal agreement as to an ideal approach for the combined surgical repair of both RP and POP.
- The preferred approach for the repair of these patients is transabdominal for those with good performance status and transperineal in the high-risk group.
- We for the first time describe a natural orifice technique for simultaneous endoluminal lateral suspension of apical vaginal wall and rectal prolapse fixation with ultrasound and fluoroscopic assistance.

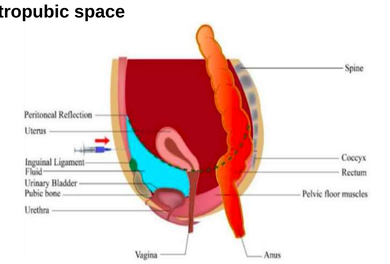
Materials and Methods

- Seven patients were included in the study with a mean age of 63 years and were followed between 3 to 11 months.
- The procedure has two steps both done endoluminally :

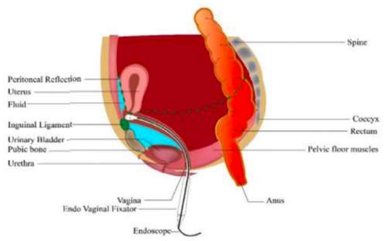
A) Apical suspension of vagina:

- ***Lateral suspension of vaginal apex:***

1. Creation and expansion of retropubic space

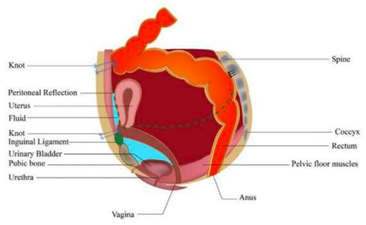


2. Retropubic vaginal fixation



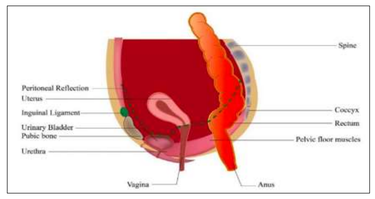
B) Rectal fixation:

1. **Rectal Ventral Rectal Fixation**
2. **Posterior Fixation**

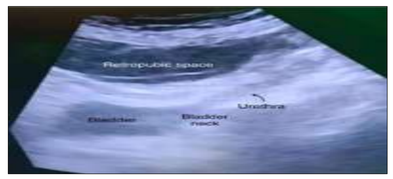


Technical Details

Combined rectal and vaginal prolapse

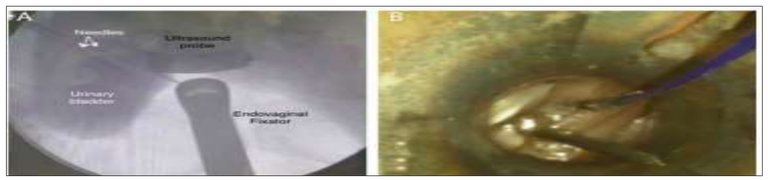


Apical suspension of vaginal apex

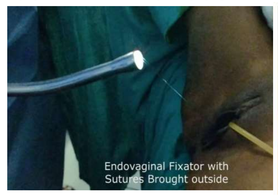


Expansion of retropubic space by injecting hydroxy ethyl starch

A-Introduction of endovaginal fixator with bronchoscope into vagina B- Creation of suprapubic transillumination



Introduction of 2 Vygon needles into endovaginal fixator gel head under fluoroscopic (A) and endoscopic (B) guidance



Final view of apical suspension of vagina, fixing knots in both lateral fornices with cervix in between

Rectal Fixation

Anterior (A) and Posterior (B,C) fixation of rectum

Results

- Anatomical prolapse correction was accomplished in all the patients.
- Significant improvement in ODS score was observed postoperatively.
- Patients S-POPQ score, improved from stage 4 to stage 1 after the procedure.

Table 1: Preoperative and postoperativeODS,SMIS,UDI-6 score and S-POPQ score

	Mean ± SD		
Parameter	*Preoperative*	*Postoperative*	*p value*
ODS score	13.43 ± 1.51	2.86 ± 0.90	<0.0001
SMIS	6 ± 1.63	5.14 ± 1.07	0.078
UDI-6 score	11.86 ± 1.35	11.43 ± 1.51	0.08
S-POPQ score			
Point Ba, cm	2.01 ± 0.66	1.1 ± 0.25	0.006
Point C, cm	2.31 ± 0.43	1.09 ± 0.2	0.0007
Point Bp, cm	2.23 ± 0.44	1.04 ± 0.2	0.0002

- Uroflowmetry showed significant improvement of urine flow in all 7 patients

Table 2 : Preoperative and postoperative anal canal manometry, MR defecography and uroflowmetry

	Mean ± SD		
Parameter	*Preoperative*	*Postoperative*	*p value*
Anal canal pressure (mm Hg)			
Resting	9 ± 3.0	9.71 ± 2.69	0.39
Squeeze	31.57 ± 5.65	32.71 ± 6.99	0.17
Anorectal angle (degrees)			
Resting	117.71 ± 6.02	98 ± 4.12	0.001
Straining	129 ± 2.38	117.57 ± 9	0.02
Anorectal descent (cm)	2.87 ± 0.577	0.73 ± 0.11	<0.0001
Uroflowmetry: maximal flow rate (mL/sec)	13.86 ± 1.35	23.71 ± 3.15	0.0004

Conclusion

- It is a novel minimally invasive transluminal procedure that repairs concomitant rectal and vaginal prolapse in the same sitting.
- Improvement in the instrument design and incorporation of endoluminal robotic systems will enhance the technical ease.
- The study needs validation in larger series of patients with longer follow-up.

References

1. Speed JM, et al. Urology. 2021;150:188–193.
2. Wallace SL,,et al. Int Urogynecol J. 2020;31:2101–2108.

DISEASES OF THE COLON & RECTUM
ASCRS American Society of Colon & Rectal Surgeons

Dis Colon Rectum Dis Colon Rectum 2022; 65: e184–e190

Impact Factor: 4.78
SJR : Q1

Utility of Itraconazole and Terbinafine in Mucormycosis: a proof-of-concept analysis

Prashant Gupta, Hardeep Singh Malhotra, Priyamvada Saxena, Riddhi Singh, Deeksha Shukla, Mohd Saqib Hasan, Veerendra Verma, Gopa Banerjee, Bipin Puri, Himanshu Dandu

Journal of Investigative Medicine, BMJ Journal 2022;70:914–918. doi:10.1136/jim-2021-002179
Accepted 4 January 2022; **Published** Online First 25 January 2022; **Impact factor (JCR): 3.235; Scimago Journal Rank (SJR): 0.682; Quartile Q2**

RATIONALE: The rapid surge of post COVID mucormycosis, in a span of 2 months in year 2021, led to an acute shortage of mainstay drugs. Lack of liposomal amphotericin B (AMB), Posaconazole (PSC) and isavuconazole (ISC), coupled with their exorbitant cost, caused a huge gap in the treatment of patients with mucormycosis. A literature search into possible alternative drugs revealed two potential antifungal agents, itraconazole (ITZ) and terbinafine (TRB), which had demonstrated low minimum inhibitory concentration (MIC) against some species of mucormycetes.

AIM & OBJECTIVES:

1. To identify different species of Mucorales affecting patients with COVID-19-associated mucormycosis
2. Identify the MIC trends of all antifungal agents, with special focus on ITZ and TRB.

METHODS:

Place of Study: Mycology lab, Department of Microbiology

Total patients: 322; **Duration of Study**: May 1, 2021 and July 31, 2021

Inclusion criteria: Any patient, either in the acute phase of COVID-19 or in the post-COVID-19 phase, presenting with visual deterioration, periorbital swelling, proptosis, facial pain or numbness, headache, nasal obstruction or nasal bleed

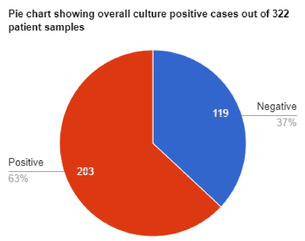
Exclusion criteria: Non-covid cases

Specimen: Tissue, nasal scrapings, nasal swabs, orbital content, brain tissue, abscess

Laboratory methods: KOH microscopy, culture, antifungal susceptibility by broth micro-dilution (CLSI M38 A2)

Ethics approval: IRB number 676/ethics/2021.

RESULTS: 203 culture positive out of 322 patients; 173 isolates were confirmed to species level both by MALDI-tof (Vitek MS) and slide culture. 150/173 were tested for ITZ and 132/173 were tested for TRB



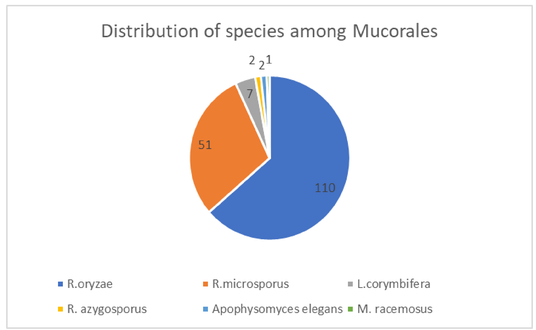


Table 5 MIC distribution of itraconazole for 150 Mucorales species determined using the CLSI M38-A2 microdilution method

Species	Isolates (n) Total (n=150)	Isolates (n) with MIC (µg/mL) ≤0.03	0.06	0.125	0.25	0.5	1.0	2.0	4.0	8.0	≥16.0
Rhizopus oryzae complex	98	–	1	–	7	30	30	27	1	–	2
Rhizopus microsporus complex	41	–	–	–	–	1	2	8	25	5	–
Lichtheimia corymbifera	7	–	–	–	–	2	3	2	–	–	–
Rhizopus azygosporus	2	–	–	–	–	–	1	1	–	–	–
Apophysomyces elegans	2	–	–	–	–	–	1	1	–	–	–

CLSI, Clinical Laboratory Standard Institute; MIC, minimum inhibitory concentration.

Table 6 MIC distribution of terbinafine for 132 Mucorales species determined using the CLSI M38-A2 microdilution method

Species	Isolates (n) Total (n=132)	Isolates (n) with MIC (µg/mL) ≤0.03	0.06	0.125	0.25	0.5	1.0	2.0	4.0	8.0	≥16.0
Rhizopus oryzae complex	88	–	–	–	–	7	–	–	1	–	80
Rhizopus microsporus complex	38	–	–	1	1	13	20	3	–	–	–
Lichtheimia corymbifera	2	–	–	–	–	1	1	–	–	–	–
Rhizopus azygosporus	2	–	–	–	–	–	–	–	–	1	1
Apophysomyces elegans	2	–	–	–	–	–	2	–	–	–	–

CLSI, Clinical Laboratory Standard Institute; MIC, minimum inhibitory concentration.

DISCUSSION:

- The most common Mucorales found to cause this epidemic was *Rhizopus oryzae*, followed by *R. microsporus*.
- Amphotericin B, posaconazole and isavuconazole had low MIC values in 98.8% of all Mucorales identified.
- MIC for ITZ seems to be species-dependent. It is low in the case of most (98%) of the *R. oryzae*, but high for most of the isolates of *R. microsporus* (tables 5 and 6). Since the majority of infections have been caused by *R. oryzae*, ITZ may therefore be tried as an alternative, especially when AMB, PSC or ISC is not available.
- Moreover, ITZ is a cheaper drug and is easily available as it is commonly used for treatment of dermatophytic infections and aspergillosis. However, its in vivo effect needs to be studied further by correlating its clinical response with serial serum trough levels.
- It may also be tried in few cases of *R. microsporus* infections, wherever susceptibilities are available. The epidemiological cut off value (ECV) for *R. microsporus* is yet to be decided; from our MIC data, an ECV of 8 µg/mL can be proposed. However, studies on more isolates of *R. microsporus* need to be done to affirm our findings.
- TRB was found to be more active against *R. microsporus* (85.2%) than against *R. oryzae*. This contrasting pattern potentially opens up a whole new set of permutations and combinations when different isolates are detected. Similar findings were found by Dannaoui *et al* [6] in the past. Primarily designed for superficial mycoses, TRB has also been found to be effective in the treatment of systemic fungal infections, such as aspergillosis or pseudallescheriasis.

CONCLUSION: ITZ and TRB appear to be potential agents for treatment of infections caused by *R. oryzae* and *R. microsporus*, respectively, especially when the primary agents are sparingly available. It may be recommended that AFST be done, wherever facilities exist, in all patients with mucormycosis to aid in the logical selection of antifungal agent.

Evaluation of mandibular advancement device placement based on levels of TNF-alpha in participants with obstructive sleep apnea: A clinical study

Published in Journal of Prosthetic Dentistry (Impact factor-4.148) in Dec'2021; DOI: :10.1016/j.prosdent.2021.10.031

Journal of Prosthetic Dentistry
Q1
Medicine (miscellaneous)
best quartile
SJR 2021
1.11
powered by scimagojr.com

Dr. Neeti Solanki (CATEGORY-G)

Statement of Problem & Aim

Objective assessments of the effect of mandibular advancement device on patients with obstructive sleep apnea are lacking. The purpose of this clinical study was to compare levels of serum tumor necrosis factor alpha (TNF-alpha), Epworth Sleepiness Scale score, and Berlin Questionnaire score in patients with mild to moderate obstructive sleep apnea before and after treatment with a mandibular advancement device.

Hypothesis

- The null hypothesis stated that mandibular advancement device would have no effect on serum TNF-alpha levels and on the Epworth Sleepiness Scale and Berlin Questionnaire scores in participants with mild to moderate obstructive sleep apnea.

Material and Method

- Study setting: **Single-center, before and after controlled study**. Institutional ethical clearance obtained before the start of the study (96th ECM II BThesis/52), and the trial registered at the clinical trial registry **(CTRI/2020/06/025646).**

Inclusion Criteria

- Sample size = 20
- Participants aged between 25 and 65 years, mild to moderate OSA, no previous history of OSA treatment, and more than 8 natural teeth per jaw without any periodontal disease.

Methodology

Participant selection based on predetermined Inclusion and Exclusion Criteria (n= 20), **Epworth Sleepiness Scale Questionnaire and Berlin Questionnaire** evaluated (0 months-baseline), Patient educated, Informed Consent taken

↓

Peripheral venous blood sample collected (5-6ml) in anticoagulant vials, Centrifuged, Serum stored at -80ºC, Intraoral impressions and protrusive bite registration record made at **70% mandibular protrusion** for Mandibular Advancement Device (MAD), custom-made MAD fabricated and delivered

↓

Patient recalled for follow up (after 3 months), Questionnaires evaluated, blood sample collected again and serum stored

↓

Patient recalled for follow up (after 6 months from the start of treatment), Questionnaires evaluated, blood sample collected again and serum stored

After collection of pre and post treatment samples at 0, 3 and 6 months, the quantification of TNF- α done using **Human TNF-α ELISA kit.**

Mandibular Advancement Device- Custom made for the study

Figure 1. Custom-made single-piece nonadjustable mandibular advancement device.

Observation and Results

Table 1. Mean values of TNF-alpha and Epworth Sleepiness Scale recorded at baseline and after 3 and 6 months

	TNF-alpha	Epworth Sleepiness Scale Score
Timeline	**Mean ±SD**	**Mean ±SD**
Baseline	5.40 ±0.96	14.60 ±1.05
3 mo	3.42 ±1.01	10.15 ±1.23
6 mo	2.73 ±0.67	8.45 ±1.05

SD, standard deviation.

Table 2. Comparison of levels of TNF-alpha at baseline and after 3 and 6 months

TNF-alpha	Mean ±SD	*P*
Baseline-3 mo	1.98 ±0.56	<.001
Baseline-6 mo	2.67 ±0.67	<.001
3 mo-6 mo	0.69 ±0.48	<.001

SD, standard deviation.

Table 3. Comparison of levels of Epworth Sleepiness Scale score at baseline and at 3 and 6 months

Epworth Sleepiness Scale Score	Mean ±SD	*P*
Baseline-3 mo	4.45 ±0.89	<.001
Baseline-6 mo	6.15 ±0.93	<.001
3 mo-6 mo	1.70 ±0.66	<.001

SD, standard deviation.

Table 4. Comparison of Berlin Questionnaire scores at baseline and at 3 and 6 months

		Berlin Questionnaire Score at Baseline		
		Low	**High**	**Total**
Berlin Questionnaire score at 3 mo	**Low**	4 (80%)	7 (46.7%)	11 (55%)
	High	1 (20%)	8 (53.3%)	9 (45%)
Total		5 (100%)	15 (100%)	20 (100%)
P=.070				

		Berlin Questionnaire Score at Baseline		
		Low	**High**	**Total**
Berlin Questionnaire score at 6 mo	**Low**	5 (100%)	11 (73.3%)	16 (80%)
	High	0 (0%)	4 (26.7%)	4 (20%)
Total		5 (100%)	15 (100%)	20 (100%)
P=.001				

		Berlin Questionnaire Score at 3 months		
		Low	**High**	**Total**
Berlin Questionnaire score at 6 mo	**Low**	11 (100%)	5 (55.6%)	16 (80%)
	High	0 (0%)	4 (44.4%)	4 (20%)
Total		11 (100%)	9 (100%)	20 (100%)
P=.062				

Discussion & Conclusion

- 1. The use of MAD therapy in participants with mild to moderate OSA ***reduced the levels of inflammatory marker TNF-alpha.***
- 2. ***Excessive daytime sleepiness and the risk of OSA were reduced*** with MAD therapy.
- 3. These findings may help in *the* ***management of various metabolic disorders associated with OSA.***

References

- 1. Spicuzza L, Caruso D, Di Maria G. Obstructive sleep apnoea syndrome and its management. Ther Adv Chronic Dis 2020;6:273-85.
- 2. Unnikrishnan D, Jun J, Polotsky V. Inflammation in sleep apnea: an update. Rev Endocr Metab Disord 2019;16:25-34.

Characterization of the novel SARS-CoV-2 Omicron (B.1.1.529) variant of concern and its global perspective

Shailendra K. Saxena*†, Swatantra Kumar, Saniya Ansari, Vimal K Maurya

Centre for Advanced Research (CFAR-Stem cell/Cell Culture) Faculty of Medicine, King George's Medical University (KGMU), Lucknow 226003, India

Journal of Medical Virology
Impact Factor: 20.69
Q1 Infectious Diseases
SJR 2021 2.66

J Med Virol. 2022; 94(4): 1738-1744. doi: 10.1002/jmv.27524. PMID: 34905235. (SJR: Q1; Impact Factor: 20.69; *First author; †Corresponding author) (Pre-clinical category)

INTRODUCTION

As the latest identified novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variant of concern (VOC), the influence of Omicron on our globe grows promptly. Importantly, Considering crucial mutations and their implications including an increase in transmissibility, COVID-19 severity, and reduction of efficacy of currently available diagnostics, vaccines, and therapeutics, Omicron has been classified as one of the VOC. Therefore, our present study characterizes the mutational hotspots of the Omicron variant in comparison with the Delta variant of SARS-CoV-2.

AIMS AND OBJECTIVES

- To identify the global prevalence of Omicron SARS-CoV-2 (B.1.1.529).
- To identify the divergence of Omicron SARS-CoV-2.
- To identify the mutational hotspots of Omicron SARS-CoV-2.

METHODOLOGY

- To identify the global prevalence of Omicron SARS-CoV-2 (B.1.1.529), we have used the phylogenetic assignment of named global outbreak (PANGO) lineage which provides a nomenclature that is being used by public health agencies and researchers to track the transmission and spread of SARS-CoV-2 including VOCs.
- To identify the divergence of Omicron SARS-CoV-2, we have used the Nextstrain which provides the latest global analysis of SARS-CoV-2 genome as soon as they are being shared by GISAID.
- Mutational divergence of Omicron SARS-CoV-2 was observed upon phylogenetic tree analysis performed in the scatter format where the x-axis representing the S1 mutations and the y axis representing the Clade was selected.

RESULTS

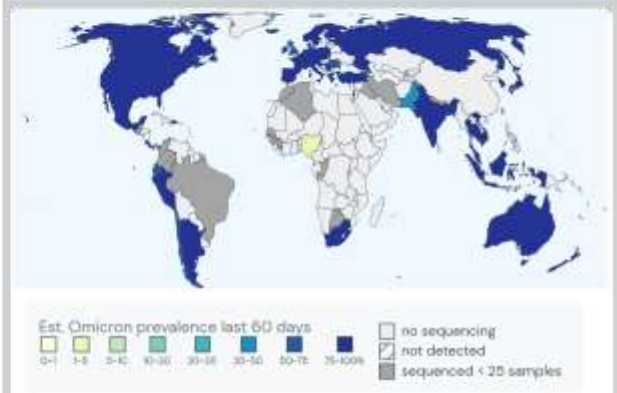


Fig 1: Worldwide prevalence of Omicron showing its recent emergence based on the sequencing.

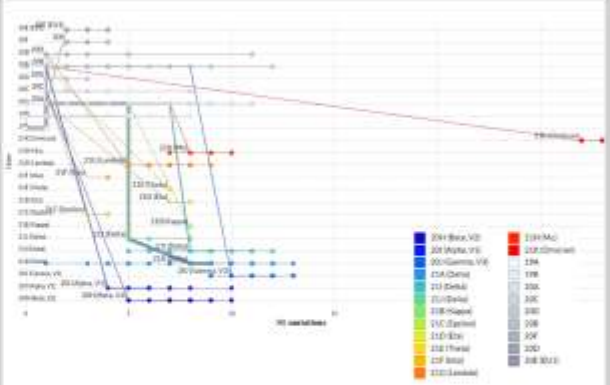


Fig 2: The phylogenetic tree between S1 mutations and clade shows the mutational divergence of the Omicron variant of SARS-CoV-2. The divergence of Omicron was evaluated based on the number of mutations in the spike glycoprotein of SARS-CoV-2 sequenced samples that have been classified as characteristic variants based on S1 mutations notified as specific color dots and phylogenetic trees (lines) on Nextstrain.

STRUCTURAL COMPARISON OF OMICRON SPIKE PROTEIN

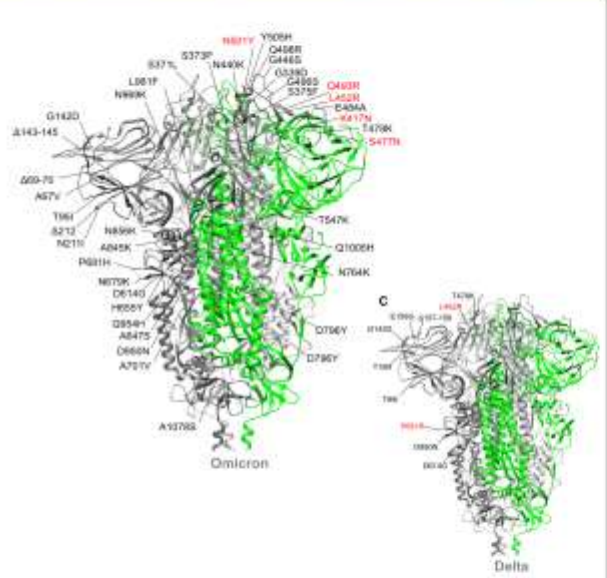


Fig 3: Structures of spike glycoprotein of Omicron SARS-CoV-2 showing the comparative mutations.

Fig 4: Comparative mutational hotspots of spike glycoprotein of Omicron and Delta variant of SARS-CoV-2 where the gradient dark purple color coding of the box represents to the prevalence of that mutation in overall sequenced samples and labeling with red and green color showing the variant of concern variant of interest, respectively, that has been identified in previous variants.

MUTATIONS OF SARS-COV-2 OMICRON SPIKE

Table 1: Spike amino acid changes in SARS-CoV-2 Omicron variants of concern (WHO label)/PANGO lineage•B.1.1.529/GISAID clade• GR/484A/Nextstrain clade•21K

Deletions	Δ69–70	Δ143–145	Δ211
Insertions	214EPE	-	-
Receptor-binding domain (residues 319–541)			
G339D	S371L	S373P	S375F
K417N	N440K	G446S	S477N
T478K	E484A	Q493R	G496S
Q498R	N501Y	Y505H	-
Other amino acid changes in the spike			
A67V	T95I	G142D	L212
T547K	D614G	H655Y	N679K
P681H	N764K	D796Y	N856K
Q954H	N969K	L981F	-
Effects on transmissibility			
Possibility: High to very high			
Vaccine escape potentiality			
Possibility: Possible			
The cross-neutralizing capacity of the Omicron variant needs to be evaluated.			

DISCUSSION AND CONCLUSIONS

- Collectively, for the first time, have characterize the novel SARS-CoV-2 Omicron Variant of Concern and its mutational hotspots in comparison with Delta variant of SARS-CoV-2. The Omicron exhibits highest number of amino acid substitutions in the spike glycoprotein.
- The variation in the spike glycoprotein sequences suggests that the use of coronavirus-specific attachment inhibitors may not be the current choice of therapy for SARS-CoV-2 Omicron (B.1.1.529) and we need to proceed with a sense of urgency in this matter.

Tuberculous myelitis: a prospective follow-up study

Neurological Sciences 2022;43:5615-24 SJR 0.85,Q1 Impact Factor 3.830

Background

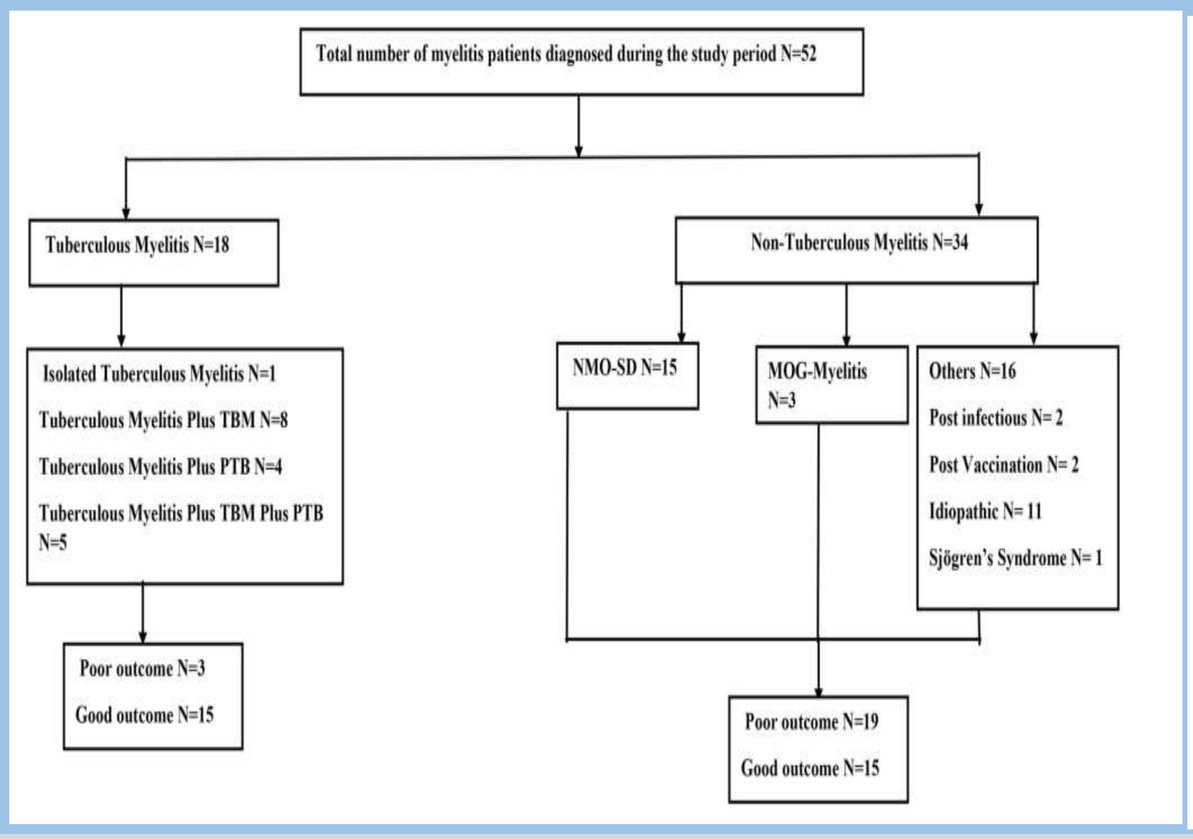
Tuberculous myelitis: Inflammation of spinal cord due to TB. Prospective studies regarding tuberculous myelitis are lacking. We aimed to prospectively evaluate patients with tuberculous myelitis to identify the features that distinguish tuberculous myelitis from other myelitis.

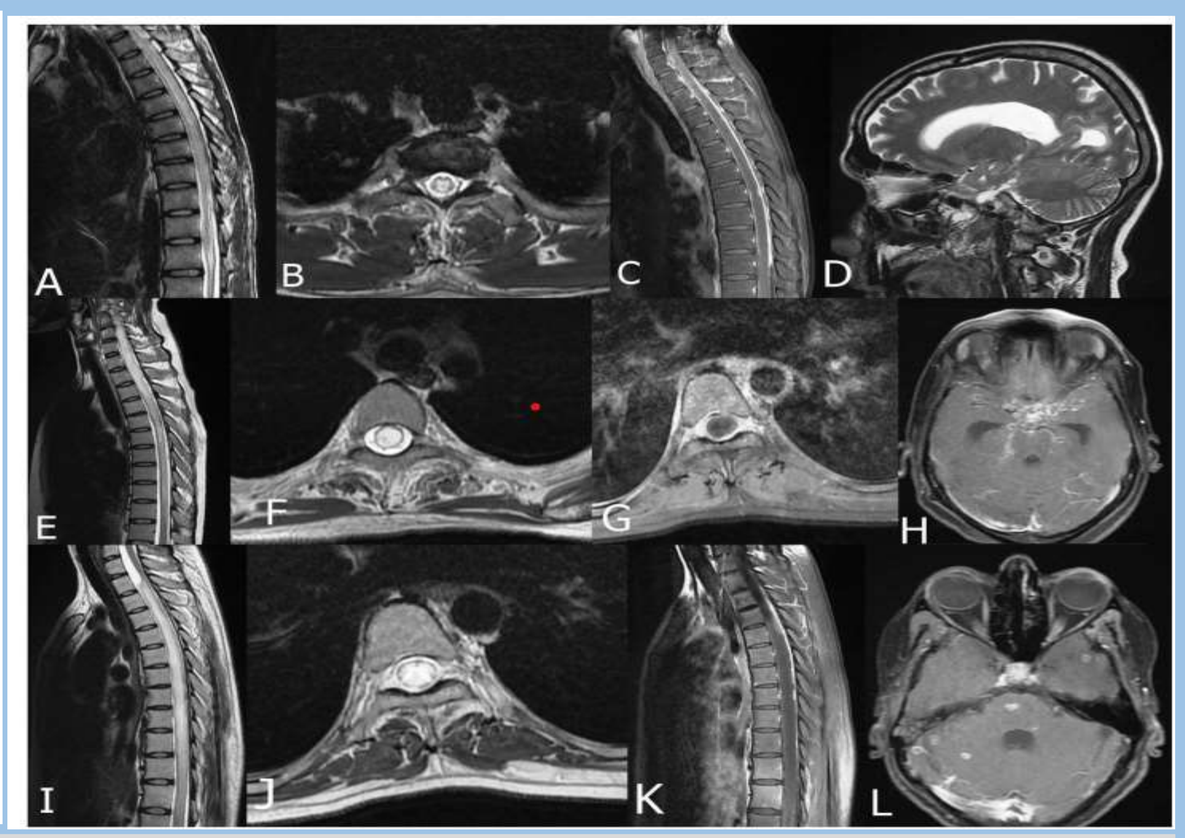
Methods

This was a prospective study. Patients presenting with paraparesis/quadriparesis, and MRI showing myelitis were included. All patients were subjected to clinical, neuroimaging, and laboratory evaluation. Diagnosis of definite tuberculous myelitis was made if GeneXpert test in CSF was positive. Probable tuberculous myelitis was diagnosed if there was evidence of tuberculosis elsewhere in the body. Patients were treated with methylprednisolone and antituberculosis treatment. Patients were followed for 6 months.

Results

We enrolled 52 patients. Eighteen (34.6%) patients had tuberculous myelitis. Headache ($P = 0.018$) was significantly more common in tuberculous myelitis. The CSF protein ($P < 0.001$), and CSF cell count ($P < 0.001$) were significantly higher in tuberculous myelitis. On neuroimaging, a LETM was common in tuberculous myelitis. Spinal meningeal enhancement (14; 77.8%), extra-axial collection, and CSF loculation (6; 33.4%), arachnoiditis (3;16.7%), and concomitant spinal tuberculoma (2;11.1%) were other common imaging features of tuberculous myelitis. Tuberculous myelitis patients showed a better response ($P = 0.025$) to treatment.





Conclusion

TB myelitis was seen in 35% of our patients. Headache, High CSF Protein and cell count and low CSF sugar were seen in TB myelitis. Outcome of TB myelitis was better as compared to other causes of myelitis.

Clinical Surgical paper

Evaluation and management of rectovaginal fistula in anorectal malformation-an observational study

Gupta SK, **Pandey A,** Kumar P, Srivastava S, Singh S, Rawat JD

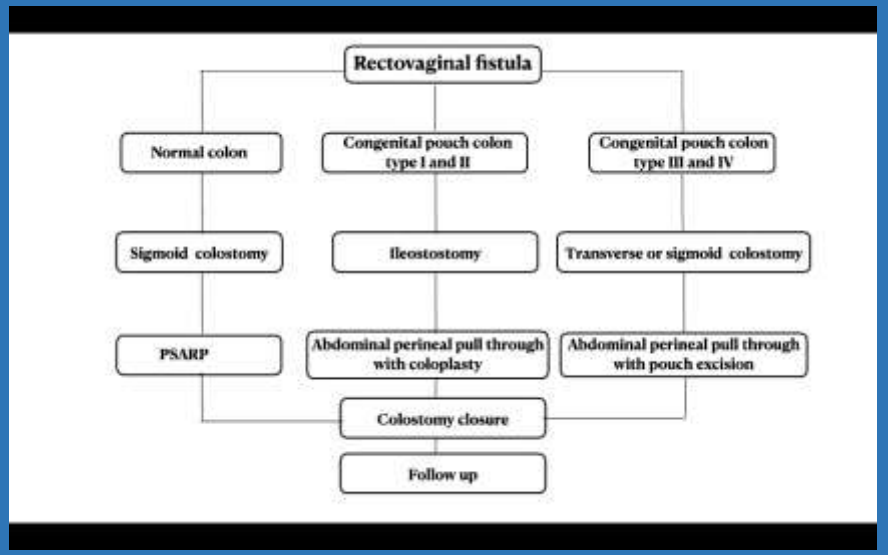
Rationale-

- Anorectal malformation (ARM) is a common congenital anomaly.
- The rectovaginal fistula (RVF) is a type of female ARM in which the rectum terminates in the vagina.
- There are two openings in the vestibule, and the anal opening is absent.
- Its incidence is estimated to be close to 1% of female ARMs

Aims and objectives- There are limited reports on its presentation, management, and follow-up. This paper deals with the clinical presentation, management, and outcome of this rare anomaly.

Methods-

- It was a retrospective cohort study (January 2010 to 2020.).
- The complaint was absent anal opening and stool coming out from the vestibule.
- They were evaluated for age at presentation, clinical presentation, and associated anomalies
- The patients were also assessed for any prior surgical interventions performed elsewhere and complications.
- The surgery was performed in three stages in all patients.



- The follow up was recorded for up to five years.
- Complications were managed as and were noted.

Pediatric Surgery International 2021:37: 1601-6
SJR 181 of Surgery, Q2 Journal, IF=2.0 (2021)

Results-

- Fifty-six patients of RVF (2.8% of total ARM).
- The associated anomalies were present in 37 (66%) patients.
- Forty seven patients have completed all three stages of surgery
- Constipation was present in 39 patients two years after the third surgery. It responded to laxatives.
- In five-year follow-up of 29 patients, constipation was noted in 20 patients.

Conclusion- RVF is a distinct entity, which needs careful clinical examination for an accurate diagnosis. With proper planning for diagnosis and treatment, it can be managed at specialized centers. Care may be necessary for the associated anomalies. The follow-up is an integral part of its management.

Serological and Molecular Study of *Leptospira* in Pediatric Patients at a Tertiary Care Centre of Northern India

Asmat Jahan , Prachi Bhargava , Raj Kumar Kalyan *, Sanjeev Kumar Verma , Kamlesh Kumar Gupta , Sophia Inbaraj , Aman Agarwal

Journal: Indian Journal of Medical Microbiology, doi.org/10.1016/j.ijmmb.2021.03.010, Indexing status : **Scopus SCI with 1.0 Impact , Volume 39, Issue 2, April 2021 p (245-248)Scimago Journal Rank 0.398 Q2**

CATEGORY: PARA-CLINICAL

INTRODUCTION

spirosis is a neglected tropical zoonotic disease, which is caused by the pathogenic spirochetes belong to the genus *Leptospira.*

6 Adolf Weil Professor of Medicine at Heidelberg described this disease.

pira are Gram negative, thin, helically coiled, motile spirochetes, Leptospires are usually about 6-25 µm long and 0.1 to 0.2 µm in diameter.

re 300 serovars of *Leptospira* belonging to 24 serogroups based on their antigenic relatedness.

oms of this disease are appear such as fever, chills, headache, conjunctival suffusion, rashes, myalgia, and jaundice. Therefore the disease can be confused with ical diseases like malaria, influenza, typhoid fever, scrub typhus, dengue, chikungunya and viral hepatitis.

orld Health Organization (WHO) has estimated that the annual incidence of leptospirosis is 0.1 to 1 case/100,000 people in temperate non-endemic areas, and 10- /100,000 people in humid, tropical, endemic areas.

re paucity of reports on leptospirosis in paediatric population from northern India, so we have planned this study at our setup.

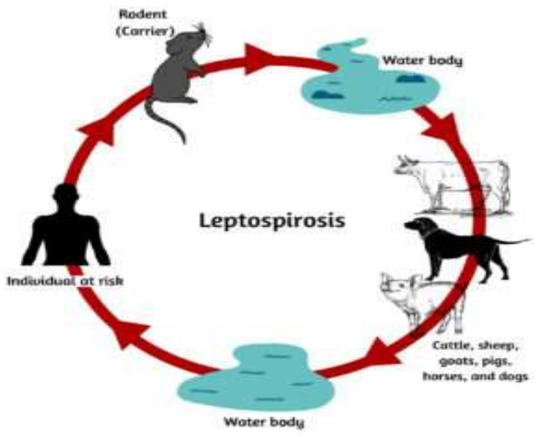


Figure 1:Transmission of *Leptospira*

AIM & OBJECTIVES OF THE STUDY

Aim: This prospective study was undertaken to know the proportion of leptospirosis in pediatric patients presented with acute febrile illness.

Objective:
1.To detect leptospiral infection by serological and molecular methods.
2.To know the prevalence of leptospirosis in paediatric patients presenting with facute ebrile illness in our setup.
3.To know the associated risk factors for leptospirosis in children

MATERIALS & METHODS

Place of study:

Post Graduate Department of Microbiology King George's Medical University, Lucknow.

Study design:

Hospital based prospective observational study

Collection of samples:

70 blood samples from suspected pediatric patients of leptospirosis were collected from pediatric ward of K.G.M.U., Lucknow.

Duration of study:

This study was done from Jan 2018 to December 2018.

Ethical Consideration

Ethics approval was obtained from the Ethics Review Committee of King George's Medical University, Lucknow, India (Approval no. 147/Ethics/R. Cell-18

Inclusion Criteria

Clinically presenting with acute undifferentiated fever (<14 days)

Exclusion Criteria

Patients not willing to give consent to participate in the study

Methodology

Clinically presenting with acute febrile illness
5 ml whole blood sample in plain vial

Separation of serum from blood samples

↓

Separated sera were diagnosed by IgM ELISA , MAT and PCR

↓

IgM ELISA Test: Serum samples were tested by using anti *Leptospira* IgM ELISA kit (Panbio USA) . The results were interpreted as follows: < 9 PU were considered negative, 9–11 equivocal, and >11 were considered as positive.

PCR Test**:** DNA was extracted from all 70 serum samples of pediatric patients using QIAamp DNA mini kit as per the manufacturers' instructions. The PCR products were loaded in 2% agarose gel prepared in Tris -borate EDTA (TBE) buffer and 100 bp DNA ladder was used. 628 bp amplicon was detected in this study which confirm the amplification of Ccmf gene of *Leptospira*.

MAT test: The serovars used in this study were Icterohaemorrhagiae, Pomona, Canicola, Hardjo, Grippotyphosa, Australis, Autumnalis, Patoc, Hebdo, Javanica, Pyrogenes and Tarassovi. MAT test with titre of 1:100 was considered positive.

RESULTS & DISCUSSION

Out of the 70 blood samples, 7 (10%) samples were found positive by IgM ELISA, 4 (5.7%) samples were positive by MAT and 3(4.3%) were found positive by PCR. The sensitivity and specificity of IgM ELISA and PCR when compared to MAT were 42.9% and 100% while specificity of IgM ELISA and PCR were 98.4% and 98.5% respectively. The statistical analysis revealed a kappa value p<0.01 was significantly associated with IgM ELISA and PCR respectively in comparison with MAT .

Table 1. Comparison of ELISA and PCR test by taking MAT as a gold standard test.

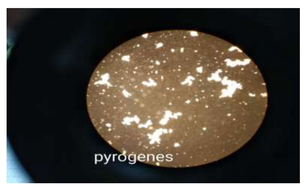
Characteristic	ELISA Test Performance Result	PCR Test Performance Result
Sensitivity %(95% C.I.), p- value	42.9 (9.9 - 81.6),0.99	100 (96 - 100),<0.01
Specificity %(95% C.I.), p value	98.4 (91.5 - 99.9),<0.01	98.5 (91.9 – 99.9),<0.01
Agreement %(95% C.I.), p value	92.9 (84.1 - 97.6),<0.01	98.6 (92.3 - 99.9),<0.01
Expected Agreement % Cohen's Kappa (p-value)	85.4 0.51 (< 0.01)	90.5 0.85 (<0.01)

A total of 70 pediatric patients aged <12 yrs with acute febrile illness were included in the study. On the basis of clinical history and investigation, 54 (77.1%) were boys and the rest girls were enrolled. Among them, statistically significant seropositive cases were noticed in children of 7–12 years (6/8; 75%) compared to children of age from 0 to 6 years (2/ 8; 25%). Majority of patients were from rural background 40/70 (57.1%) and 30/70 belonged to urban background (42.9%). Seropositive cases 8/ 8(100%) were seen in children from rural locality. Patient's enrollment were highest in the season of south-west monsoon 49/70 (70%). Contacts with animals (dog, cow, rat etc.) were noticed in 2 (25%) children and exposure to contaminated environment was noticed in 4/ 8(50%) patients. Considering the clinical signs, all of the patients exhibited febrile illness 70(100%) followed by chills headache, cough, vomiting, abdominal pain, myalgia, icterus, rashes and conjunctival suf-fusion were the most common sign/symptoms. The statistical analysis of the patient level demographic and risk factors association with leptospiral seropositivity are shown in Table 2.

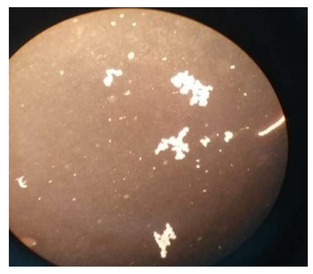
Table 2: Demographic and risk factors association with leptospirosis

Demographic Characteristics	Demographic Variables (n=70)	Seroprevalence (n=8)	p- value
Gender	Male 54 (77.1) Female 16(22.9)	6(75) 2 (25)	**0.89**
Age-wise	0-6 34(48.6) 7-12 36(51.4)	2(25) 6(75)	**0.21**
Location	Urban 30 (42.9) Rural 40 (57.1)	0(0.0) 8(100)	**0.02**
Risk Factors	Risk variables (n=70)	Seroprevalence (n=8)	**p- value**
Epidemiological factors	Contaminated Environment 30 (42.8) Rain Fall 20 (28.6) Animal contact 20 (28.6)	4(50) 2 (25) 2 (25)	**0.91**

Figure 2: Microscopic images MAT of *Leptospira* serovars



A : *L. pyrogenes*



B*: L. pomona*

In India, leptospirosis is endemic in southern and coastal parts of the country such as Andaman and Nicobar Islands, Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Odisha, parts of Maharastra and Gujarat. Cases of urban leptospirosis have been noticed in Chennai, Mumbai and Delhi. However, studies in certain parts of northern India revealed increased seroprevalence of leptospirosis from 11.7% in 2004 to 20.5% in 2008.

In our study, (57.14%) children from rural background, monsoon season, contact with animals and contaminated environment were observed as the major risk factors. The clinical severity of the disease depends upon the age and immunity factors. Previous studies revealed pediatric leptospirosis as a mild disease compared to adult leptospirosis.

MAT is the gold standard test for serological diagnosis of leptospirosis. Due to its laborious protocols and need for specialized laboratory conditions to maintain live antigens, other techniques such as PCR and ELISA were employed for the rapid detection of leptospirosis.

CONCLUSION

Leptospirosis is endemic in the southern coastal areas of India. But the current study revealed 10% leptospirosis in pediatric patients presented with a febrile illness in northern India. The study emphasizes the need for strengthening laboratory diagnostic services to keep a vigil on emerging and re-emerging zoonotic diseases like leptospirosis.

Duration of the disease is reduced as the antibiotic treatment is started as soon as possible.

In our opinion a combination of IgM ELISA and PCR offered the most reliable laboratory strategy for confirmation of leptospirosis.

REFERENCES

[1] Naing C, Reid SA, Aye SN, Htet NH, Ambu S. Risk factors for human leptospirosis following ⎵ooding: a meta-analysis of observational studies. PloS One 2019;14(5).

[2] Pal M, Hadush A. Leptospirosis: an infectious emerging waterborne zoonosis of global significance. Air Water Borne Dis 2017;6:133.

3] Agrawal SK, Chaudhry R, Gupta N, Arif N, Bhadur T. Decreasing trend of seroprevalence of leptospirosis at all India institute of medical sciences New Delhi. J Fam Med Prim Care 2018;7:1425–8.

ACKNOWLEDGEMENT

Authors are thankful to U.P.C.ST. Lucknow for providing funding for this study.

Transmission dynamics and mutational prevalence of the novel Severe acute respiratory syndrome coronavirus-2 Omicron Variant of Concern

Swatantra Kumar*, Shailendra K. Saxena†, Saniya Ansari, Vimal K Maurya

Centre for Advanced Research (CFAR-Stem cell/Cell Culture) Faculty of Medicine, King George's Medical University (KGMU), Lucknow 226003, India

Journal of Medical Virology
Impact Factor: 20.69
Q1 Infectious Diseases
SJR 2021 2.66

J Med Virol. 2022; 94(5): 2160-2166. doi:10.1002/jmv.27611. PMID: 35050521; (SJR: Q1; Impact Factor: 20.69; *First author; †Corresponding author) (Category-G)

INTRODUCTION

On November 24, 2021, from South Africa, the Omicron was first reported to the WHO. The novel Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) variant, Omicron (PANGO lineage B.1.1.529) is being reported from all around the world. The WHO has categorized Omicron as a Variant of Concern (VOC) considering its higher transmissibility and infectivity, vaccine breakthrough cases. Therefore, this study was planned to investigate the transmission dynamics and mutational prevalence of the novel SARS-CoV-2 Omicron variant.

AIMS AND OBJECTIVES

- To study the transmission dynamics and divergence of Omicron SARS-CoV-2.
- To identify the mutation prevalence and their frequency in spike glycoprotein of Omicron as compared with other prevalent VOCs.

METHODOLOGY

- To study the transmission dynamics of Omicron, we have used GISAID server which provides information about the genetic sequences, epidemiological, geographical, and species-specific data of human, avian, and animal viruses.
- To determine the Omicron SARS-CoV-2 divergence, we used Nextstrain, which offers the most recent worldwide genomic sequencing of the SARS-CoV-2 data as soon as it is released by GISAID.
- To determine the mutation prevalence in spike glycoprotein of Omicron, we have analyzed the frequencies of amino acid substitutions reported on SARS-CoV-2 (hCoV-19) Mutation Reports
- To identify the most significant mutations in the Omicron, we have taken 60,410 Omicron sequences and performed the $\chi 2$ test analysis.

RESULTS

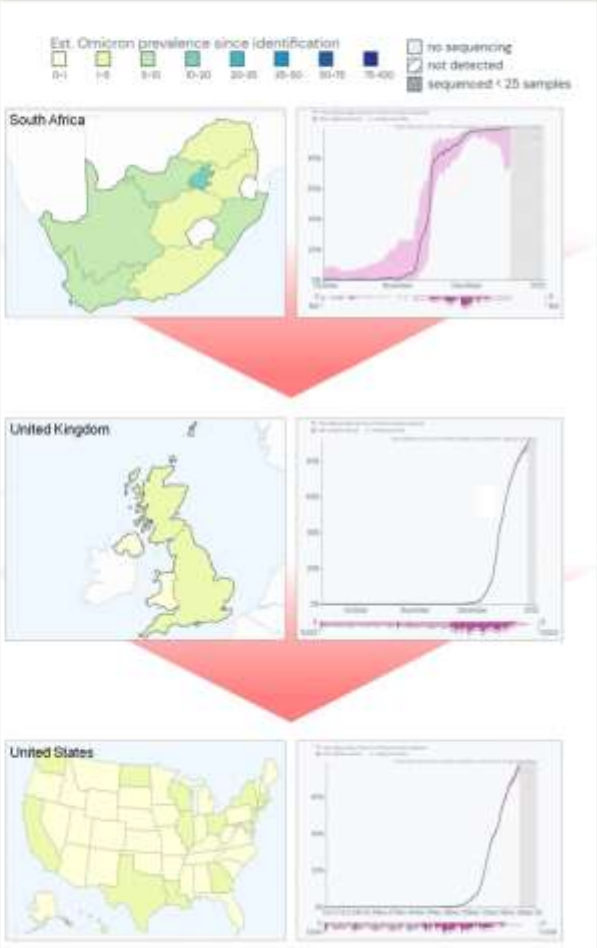


Fig 1: SARS-CoV-2 Omicron variant first reported in South Africa followed by the United Kingdom (C) and subsequently spread to the United States

TRANSMISSION DYNAMICS OF OMICRON

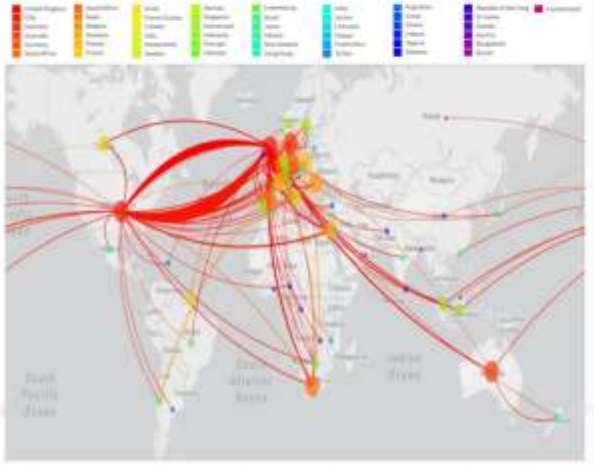


Fig 2: Transmission dynamics showing the widespread transmission of novel SARS-CoV-2 Omicron, where the color lines are showing the timeline of Omicron transmission.

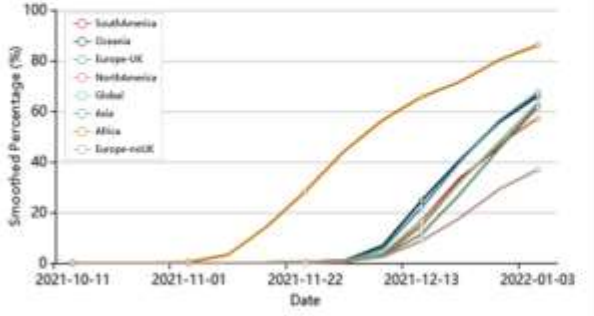


Fig 3: Relative SARS-CoV-2 Omicron genome frequency per region (exponentially smoothed alpha = 0.3) showing the prevalence of Omicron in South America, Oceania, Europe-UK, North America, Asia, Africa, and Europe-noUK

MUTATIONS OF SARS-COV-2 OMICRON

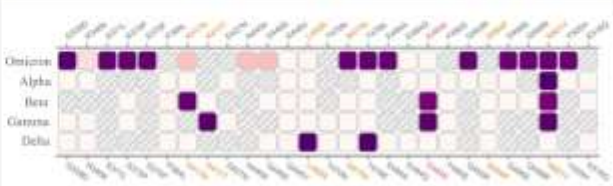


Fig 4: Mutations in RBD domain of SARS-CoV-2 VOCs in compassion with the novel SARS-CoV-2 Omicron.

PHYLOGENETICS OF OMICRON

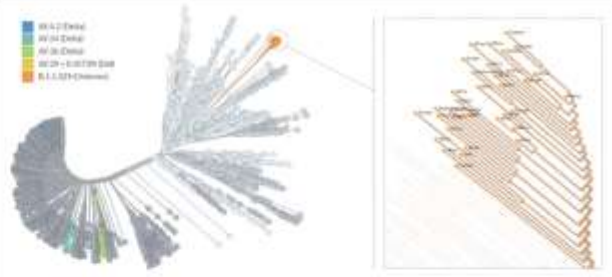


Fig 5: Phylogenetic tree (unrooted) showing the distinct clusters acquired by the novel SARS-CoV-2 Omicron. Inset showing Clade continent wise recent submission of Omicron genomic data.

DISCUSSION AND CONCLUSIONS

- The specificity and efficacy of the variant monitoring system, as well as infectious preventive measures in each nation, are critical for efficient prevention and therapeutic management of Omicron.
- The 32 amino acid alterations in the spike protein of Omicron, which include three modest deletions and one short insertion, some of which are concerning and may be related to humoral immune escape potential and higher transmissibility.
- Current emergence of Omicron XBB and BQ.1 subvariants are monitored based and transmission dynamics of these variants are being analyzed.

Category: Pre-Clinical

Expression Pattern and Clinical Significance of Beta 2-Adrenergic Receptor in Oral Squamous Cell Carcinoma: An Emerging Prognostic Indicator and Future Therapeutic Target

Krishna A[1,8], Singh V [1,2], Singh N[3], Singh S[1], Mohanty SK[4], Singh R[4], Kumar V[5], Singh US[6], Singh RK[7]

Departments of [1] Physiology, [3]Microbiology, [5] Surgical Oncology, [6]Pathology, [7]Oral and Maxillofacial Surgery, KGMU, Department of [2]Biotechnology, BBAU, [4] Division of Endocrinology, CDRI, [8] Specialty of Pathology and Cancer Genetics, KSSSCI, Lucknow, UP, India.

(Correspondence: Prof. Shraddha Singh, Dept. Physiology, KGMU, Lucknow, U.P, India. Email: drshraddha.22@gmail.com)

Background: Beta2-Adrenergic Receptor (β2-AR) is significantly overexpressed in various types of malignancies. However, the role of β2-AR in oral cancer is not well studied.

Rationale: This study may confirm a potential biomarker β2-AR to predict the prognosis and clinical outcomes of oral squamous cell carcinoma (OSCC) patients.

Objective: To investigate the β2-AR gene expression and its significance in relation to the clinicopathological features and overall survival of OSCC patients.

Methodology: IHC, western blot and qRT-PCR techniques were used to analyze β2-AR protein and mRNA levels in histopathological confirmed 65 OSCC tissues (case group) and 65 normal tissues of the oral cavity (control group).

Results: Of the total 63.1% OSCC tissues exhibited high expression for β2-AR protein. The relative density of protein (mean ± SD) was higher in the case group as compared to the control group (2.77 ± 1.17 vs. 1.28 ± 0.37, $p < 0.001$). β2-AR mRNA level was also upregulated in patients compared to the controls ($p < 0.001$). High β2-AR protein expression was significantly associated with multiple risk habits, histological differentiation, clinical TNM stages, and poor survival of patients. In the Cox proportional hazards model, β2-AR was identified as a prognostic biomarker of OSCC ($p = 0.047$).

Conclusion: β2-AR is overexpressed in oral carcinoma and associated with advanced clinical stages, pathological grades and poor survival of patients. β2-AR is also identified as an independent significant prognostic factor in OSCC patients.

Springer

Impact Factor: 3.34

Published in Journal: Clinical and Translational Oncology, **DOI:** https://doi.org/10.1007/s12094-022-02879-8

Year: 2022, **SJR 2021:** Q2/0.76, **Link:** https://pubmed.ncbi.nlm.nih.gov/35918593/

Does Calcified Neurocysticercosis Affect Migraine Characteristics and Treatment Responsiveness? A Case–Control Study

Kamini Sharma[1], Ravi Uniyal[1]*, Ravindra Kumar Garg[1], Rajesh Verma[1], Vimal Kumar Paliwal[2], Hardeep Singh Malhotra[1], Praveen Kumar Sharma[1], Neeraj Kumar[1], Shweta Pandey[1], Imran Rizvi[1]

***Corresponding author**

1. Department of Neurology, King George Medical University, Lucknow, Uttar Pradesh, India, 2. Department of Neurology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

Category: Clinical-Medical; **Name of Journal:** American Journal of Tropical Medicine and Hygiene (Official Journal of American society of Tropical Medicine and Hygiene); **Subject area:** Medicine (Q1)
Year of publication: 2022 **doi**: 10.4269/ajtmh.22-0335. Online ahead of print. PMID: 36216323, **SCImago Rank (SJR)**: 1.013

Background & Rationale

- Recently, inflammation and free-radical release has been described in the surrounding brain parenchyma of seemingly inert calcified lesions of neurocysticercosis. These free radicals can induce migraine by stimulating calcitonin gene-related peptide release.[1] This stipulated mechanism led us to hypothesize that calcified neurocysticercosis may affect the migraine severity and treatment responsiveness.

Objectives:

1. To compare baseline headache frequency, VAS score and MIDAS score among patients of migraine with and without neurocysticercosis.
2. To compare change in headache frequency, VAS score and MIDAS score (at 3 months~ at baseline) among patients of migraine with and without neurocysticercosis.

Methods

Inclusion criteria:

- Consecutive patients with migraine (as per criteria of ICHD 3).
- Patients who showed calcified neurocysticercosis in their cranial CT were included as cases in **NCC group**.
- Similar number of age and gender matched controls who did not show any calcified lesion in cranial CT scan, were included in **Control group**.

Exclusion criteria:

- Patients with history of seizures, aura, or who received any preventive medication in past.
- Additionally, patients whose cranial CT scan showed stages of neurocysticercosis other than calcified stage were also excluded.

Treatment and follow up:

- Preventive treatment was given in the form of tablet amitriptyline 10 mg for 7 days followed by 25 mg for 3 months. All patients were advised to take tablet naproxen 500 mg for abortive treatment.
- Primary outcome measures were changed in headache frequency, VAS score, and MIDAS score at the end of three months. Good outcome was defined as 50% or more reduction in headache frequency at 3 months in comparison to baseline while less than 50% reduction was defined as poor outcome.

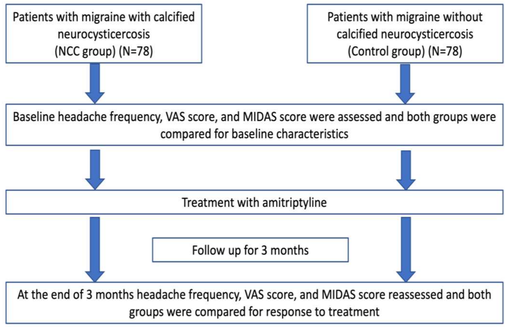


Figure 1 : Flow-chart of the study

Results

1. A total of 156 patients included in the study. Each group (NCC Group and Control group) comprised of 78 patients.
2. **Baseline characteristics:** Baseline headache frequency, VAS score and MIDAS score were significantly greater in NCC group than control group (table 1).
3. **Response to treatment within groups:**
   - A significant reduction in headache frequency was noted at the end of 3 months when compared with baseline in the NCC group (11.3 ± 3.3 at baseline versus 5.2 ± 1.6 at 3 months, P<0.001) as well as in the control group (7.9 ± 3.4 at baseline versus 5.1 ± 1.9 at 3 months, P<0.001).
   - Similarly, the VAS scores (7.5 ± 1.0 at baseline versus 4.8 ± 1.1 at 3 months in the NCC group, P<0.001; 6.0 ± 1.2 at baseline versus 4.6 ± 1.2 at 3 months in the control group, P<0.001) and MIDAS scores (15.2 < 7.8 at baseline versus 6.5 < 2.4 at 3 months in the NCC group, P<0.001; 9.6 ± 4.5 at baseline versus 6.5 ± 2.4 at 3 months in the control group, P<0.001) were significantly reduced at the end of 3 months when compared with baseline both groups
4. **Response to treatment between NCC group and Control group:** At the end of 3 months, the mean difference in headache frequency, VAS score, and MIDAS score were significantly greater (P<0.001) in the NCC group than the control group (table 2).
5. **Predictors of good outcome:**
   - On univariate analysis, the presence of neurocysticercosis (P<0.001; OR 37.40; 95% CI 15.13–92.45), younger age (P=0.02; mean difference 3.98; 95% CI 0.76–7.20), greater baseline headache frequency (P<0.001; mean difference 3.61; 95% CI –4.64 to –2.58), higher baseline VAS score (P<0.001; mean difference 1.13; 95% CI –1.50 to –0.75), higher baseline MIDAS score (P<0.001; mean difference 4.22; 95% CI –6.29 to –2.16), and higher baseline PHQ-9 score (P=0.02; mean difference 1.20; 95% CI 0.18–2.23) were significantly associated with a good outcome at 3 months.
   - On multivariate analysis (logistic regression), only the presence of neurocysticercosis (P<0.001; OR 26.57; 95% CI 8.83–79.93) and greater baseline headache frequency (P=0.001; OR 1.38; 95% CI 1.15–1.65) predicted good outcome independently.

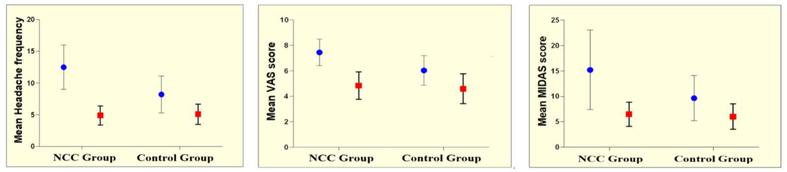


Figure 2 : Graphical presentation of mean headache frequency, mean visual analog scale (VAS) score and mean Migraine Disability Assessment (MIDAS) score at baseline (circle) and at the end of 3 months (square) in patients with migraine with calcified neurocysticercosis (NCC group) and without calcified neurocysticercosis (Control group).

Table 1 : Comparison of baseline clinical characteristics among patients with migraine with calcified neurocysticercosis (NCC group) and without calcified neurocysticercosis (control group)

Characteristic	NCC group (n= 78)	Control group (n= 78)	P value
Mean age ± SD	26.49 ± 9.269	31.18 ± 11.20	0.5
Gender, n (% female)	46 (59.1)	56 (71.8)	0.8
Location of headache Hemicranial Holocranial	 76 2	 69 9	0.02
Headache frequency, n (mean ± SD)	11.27 ± 3.29	7.88 ± 3.35	<0.001
VAS score Mean ± SD Median (IQR)	 7.42 ± 1.03 8(7-8)	 6.03 ± 1.17 6(5-7)	<0.001
MIDAS score Mean ± SD Median (IQR)	 15.0 ± 7.66 13(10-18)	 9.58 ± 4.48 8(6-12)	<0.001
GAD-7 score, mean ± SD	3.96 ± 3.70	3.56 ± 3.52	0.4
PHQ-9 score, mean ± SD	7.80 ± 2.56	9.21 ± 3.75	0.4

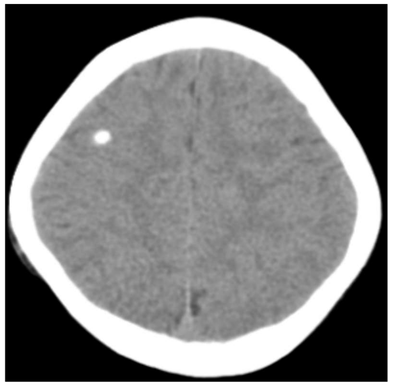


Figure 3 : Calcified Neurocysticercosis

Table 2 : Comparison of change in headache frequency, visual analog scale (VAS) score, and Migraine Disability Assessment (MIDAS) score from baseline to the end of 3 months among patients with migraine with calcified neurocysticercosis (NCC group) and without calcified neurocysticercosis (control group)

Parameters	NCC group (mean ±SD)	Control group (mean ±SD)	Mean difference (95% CI)	P value
Headache frequency	6.03 ± 1.68	2.78 ± 1.41	3.25 ± 0.24 (2.75 to 3.74)	<0.001
VAS score	2.60 ± 0.02	1.44 ± 0.01	1.16. ± 0.002 (1.15 to 1.16)	<0.001
MIDAS score	8.30 ± 5.04	3.58 ± 1.98	4.72 ± 0.61 (3.51 to 5.93)	<0.001

Discussion

1. Our study demonstrates that **migraineurs with calcified neurocysticercosis experience more frequent and severe migraine** than migraineurs without calcified lesions. Interestingly, these patients showed a better response to treatment than patients with normal CT scans.
2. Our results are in concordance with another study by Del Brutto *et al*[2] which found that headache is more prevalent in subjects with calcified neurocysticercosis in comparison to controls. However, we specifically studies migraine headache and used ICHD-3 criteria for diagnosis.
3. We included only those patients who had not undergone any prior preventive treatment. This allowed us to compare baseline characteristics without any confounding effect of preventive medications on migraine course.
4. In addition, we gave identical treatment to both groups which removed any drug-specific influence on migraine outcomes and allowed us an unbiased comparison of response to treatment.
5. Our results differ from the results of study by Pradhan *et al*[3] who found a greater headache frequency in patients without calcified lesions. This can be explained by the difference in patient selection. Their patients were apparently on preventive treatment, which would have affected their results. Interestingly, in our study also, after 3 months of preventive medication, there was no difference in headache frequency, VAS scores, and MIDAS scores between the two groups.
6. Despite a greater baseline headache frequency, VAS scores, and MIDAS scores; patients in the NCC group showed a better treatment response in comparison to control subjects. This is an interesting finding in our study and can be explained by the anti-inflammatory action of amitriptyline in addition to its anti-migraine action. By suppressing inflammation in surrounding parenchyma, amitriptyline eliminated the difference in headache frequency and severity between the two groups at the end of 3 months.
7. We found a significant difference in baseline headache frequency among patients and control subjects, but at the 3-month follow-up, this difference disappeared. This may be due to regression to the mean. However, this does not entirely negate the impact of neurocysticercosis on outcome. On multivariate analysis, a good outcome was predicted independently by the presence of neurocysticercosis also, along with greater baseline headache frequency and the OR for the presence of neurocysticercosis (OR, 26.57) was much greater than the baseline headache frequency (OR, 1.38).

Conclusion

- Our study emphasizes that seemingly inert calcified lesions of neurocysticercosis influence the course of migraine by increasing the frequency and severity of headaches.
- Further studies are warranted to explore possible inflammatory mechanisms in calcified neurocysticercosis that influence migraine physiology.

References

1. Herrick JA, et al., 2020.Am J Trop Med Hyg 103: 639.
2. Del Brutto OH et al., 2018. Am J Trop Med Hyg 99: 729.
3. Pradhan S et al., 2019. Trans R Soc Trop Med Hyg 113: 418–423.

Clinical Surgical paper

Evaluation and management of "low" anorectal malformation in male children: an observational study

Shandilya G, **Pandey A**, Pant N, Singh G, Kumar A, Rawat JD

Rationale-

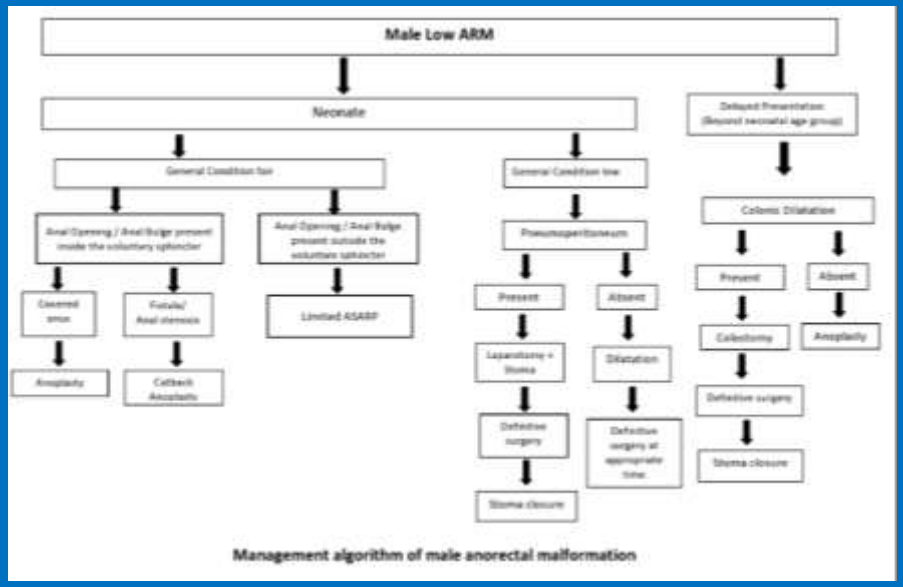
- Anorectal malformation (ARM) is an important congenital anomaly.
- An ARM with perineal fistula has been traditionally defined as low ARM (LARM).
- There is limited literature on specific studies of male LARM.

Aims and objectives- The present study was conducted to exclusively evaluate LARM in male patients, emphasizing the role of various factors on the outcome and follow-up.

Methods-

- It was a retrospective cohort study (December 2010 to 2018.)
- The patients of perineal fistula, anal stenosis, and imperforate anus without fistula (distance of gas shadow <1 cm from skin) were included.

- The patients were evaluated for age at presentation, the clinical presentation of the low ARM, associated anomalies, and complications (fig 1)
- The first follow up was at 15 days.
- Follow up protocol for two years.
- Problems like skin level anal stricture (SLAS), constipation, and incontinence were evaluated.



Management algorithm of male anorectal malformation

Results-

- Total 301 patients were evaluated.
- The clinical complaints included abnormal anal opening 183 or absent anal opening (51), constipation (81), abdominal distension (67), and peritonitis (3).
- Most of the children presented in the neonatal period.
- Eighty-seven patients presented after one month of age.
- Nine patients expired due to poor general conditions
- Associated anomalies were present in 110 (36.54%) patients.
- Fourteen patients were referred from other centers.
- In a 2-year follow up (n=219), SLAS (16) and constipation (91) were noted.

Conclusion-LARM in male patients may have diverse presentations. Awareness is necessary to avoid delayed presentation and unwanted complications. Expert management is needed at all levels.

Pediatric Surgery International 2022:38: 337-43
SJR 181 of Surgery, Q2 Journal, IF=2.0 (2021)

Re-emerging human monkeypox: A major public-health debacle

SANIYA ANSARI*, SWATANTRA KUMAR, SHAILENDRA K. SAXENA

Centre for Advanced Research (CFAR), Faculty of Medicine, King George's Medical University (KGMU), Lucknow 226003, India. *saniaansari108@gmail.com

J Med Virol. 2022 Jun 1. doi: 10.1002/jmv.27902. PMID: 35652133;(SJR: Q1; Impact Factor: 20.69 ;corresponding author) (Category-G)

JOURNAL OF MEDICAL VIROLOGY

Edited By: SHOU-JIANG (SJ) GAO

Impact factor (2021): 20.693

Journal Citation Reports (Clarivate, 2022): 2/37 (Virology)

Online ISSN: 1096-9071

INTRODUCTION

- Monkeypox (MPX) is a viral zoonotic disease that is mostly prevalent in tropical rainforests in Central and West Africa, but can also be found in other parts of the world.
- Monkeypox is caused by the Monkeypox virus (MPXV), which belongs to Orthopoxvirus (OPXV) genus.
- Monkeypox symptoms usually start within 3 weeks of exposure to the virus. If someone has flu-like symptoms, they will usually develop a rash 1-4 days later.

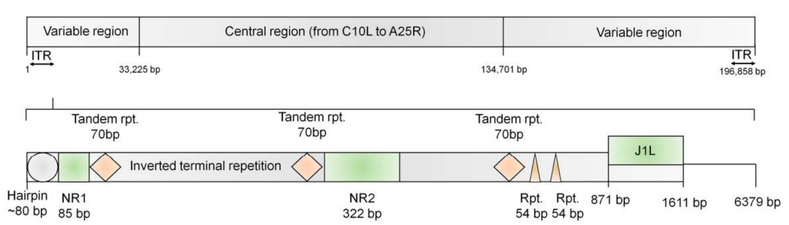


Fig. 1. showing the Genomic organization of Monkeypox virus (MPXV). MPXV genome is ~197 kb in length.

MATERIALS AND METHODS

EPIDEMIOLOGY OF MONKEYPOX:

TRANSMISSION OF MONKEYPOX VIRUS:

PHYLOGENETIC ANALYSIS OF MONKEYPOX:

RESULTS

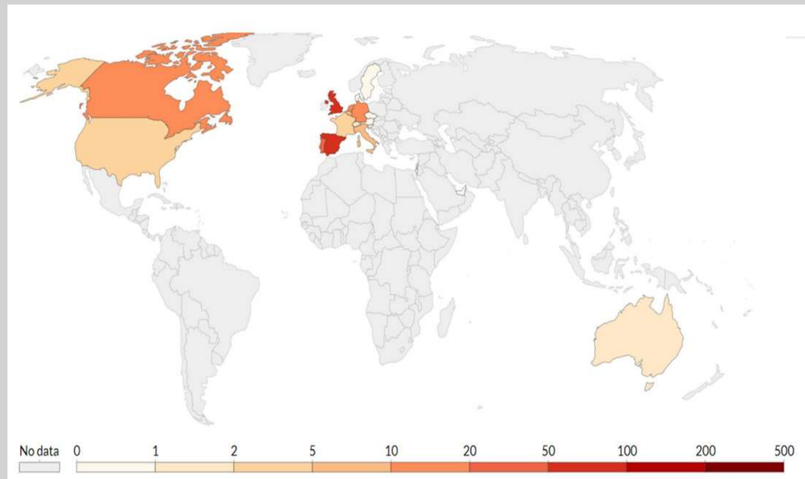


Fig. 2. EPIDEMIOLOGY OF MONKEYPOX: World map is showing the outbreaks of the Monkeypox virus (MPXV) where the cases are predominantly reported in Europe, the United States, and Australia. The color coding is showing the number of confirmed cases in that area.

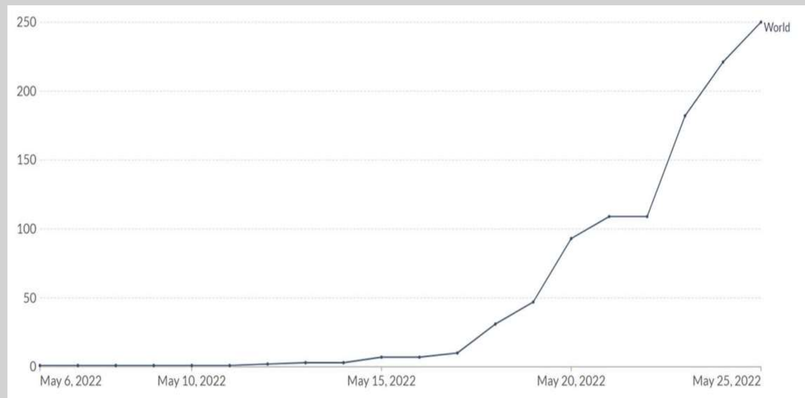


Fig.3. This graph showing the Recent global trend in the number of cumulative confirmed cases of Monkeypox.

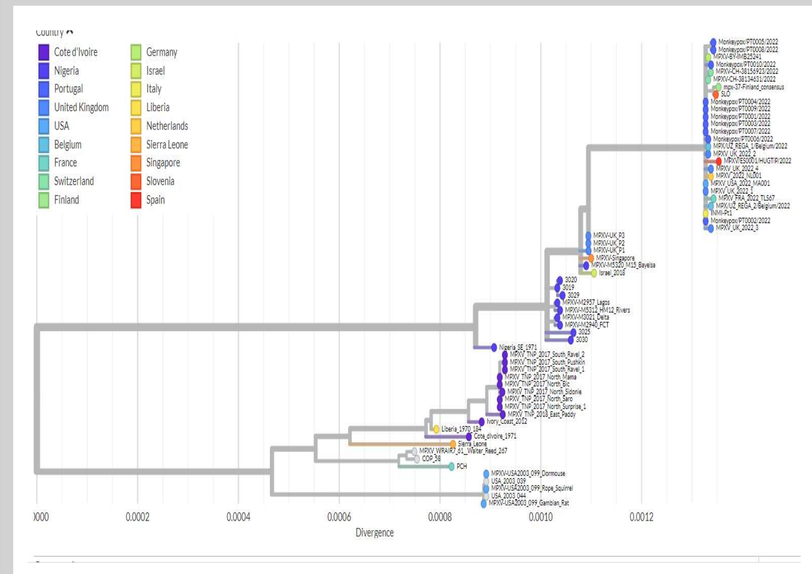


Fig. 4. Phylogenetic tree showing the mutational divergence of recently re-emerged Monkeypox virus (MPXV). Sampling date-wise divergence among these re-emerged MPXV was evaluated based on the number of mutations showing that the recently re-emerged MPXV strains are genotypically distinct from the predecessors' strains.

CONCLUSIONS

Future research and studies should focus on integrative techniques that combine human, animal, and environmental efforts to better understand the diverse parts of this disease system and offer appropriate solutions to preserve public health.

REFERENCES

Saxena SK, Ansari S, Maurya VK, Kumar S, Jain A, Paweska JT, Tripathi AK, et.al. Re-emerging human monkeypox: A major public-health debacle. *J Med Virol*. 2022 Jun 1. doi: 10.1002/jmv.27902.

Aripiprazole as First-Line Therapy for Late-Life Depression: A Case Note Review

Akanksha Sonal (DM), Shrikant Srivastava (FRCPsych, MD)

Journal of Clinical Psychopharmacology, Volume 42, Number 3, May/June 2022. Pg no. 280-283

Background

- Aripiprazole is an effective adjuvant strategy for managing treatment-resistant depression
- Also used successfully as an add-on agent in late-life depression (LLD)
- No controlled trials on its use as first-line therapy, either alone or in combination with an antidepressant

Methods

- Case note review of Aripiprazole prescribed to out-patients with LLD as a first-line therapy either in combination with an antidepressant or as a monotherapy
- Audit was approved by the ethics committee
- Case notes of subjects with Hamilton Rating Scale for Depression scores of ≥11 and with at least 1 follow-up visit were included
- Remission was defined as the first occurrence of achieving a score of <10

Results

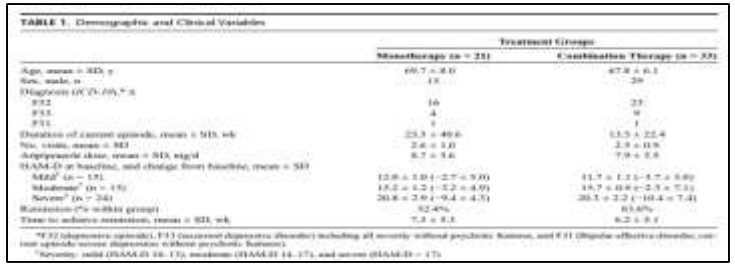


TABLE 1. Demographic and Clinical Variables

	Treatment Groups	
	Monotherapy (n = 21)	Combination Therapy (n = 33)
Age, mean ± SD, y	69.7 ± 8.0	67.8 ± 6.1
Sex, male, n	13	20
Diagnosis (ICD-10),* n		
F32	16	27
F33	4	6
F31	1	1
Duration of current episode, mean ± SD, wk	23.3 ± 40.6	13.5 ± 22.4
No. visits, mean ± SD	2.6 ± 1.0	2.9 ± 0.9
Aripiprazole dose, mean ± SD, mg/d	8.7 ± 3.6	7.9 ± 3.6
HAM-D at baseline, and change from baseline, mean ± SD		
Mild† (n = 15)	12.9 ± 1.9 (−2.7 ± 3.9)	11.7 ± 1.1 (−3.7 ± 3.6)
Moderate† (n = 19)	18.2 ± 2.2 (−3.2 ± 4.9)	16.7 ± 0.6 (−2.3 ± 7.1)
Severe† (n = 24)	26.6 ± 2.6 (−9.4 ± 4.3)	20.3 ± 2.2 (−10.4 ± 7.4)
Remission (% within group)	52.4%	63.6%
Time to achieve remission, mean ± SD, wk	7.3 ± 4.3	6.2 ± 4.1

* F32 (depressive episode), F33 (recurrent depressive disorder) including all severity without psychotic features, and F31 (bipolar affective disorder, current episode severe depression without psychotic features).
† Severity: mild (HAM-D 14–17), moderate (HAM-D 18–25), and severe (HAM-D > 25).

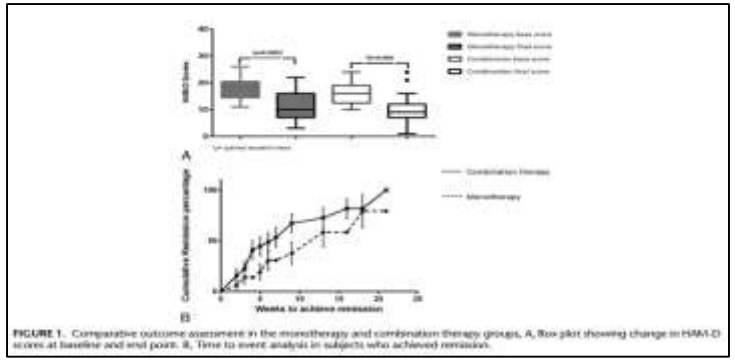


FIGURE 1. Comparative outcome assessment in the monotherapy and combination therapy groups. A, Box plot showing change in HAM-D scores at baseline and end point. B, Time to event analysis in subjects who achieved remission.

Conclusions

- Aripiprazole was found to be an effective first-line antidepressant in LLD
- This warrants controlled trials of Aripiprazole as a first-line antidepressant for LLD

Research Showcase 2022; Category: Clinical-Medical

Dynamic Change in Cortisol Levels Associated with Severity, Progression and Survival of Patients with Traumatic Brain Injury; **ALOK** et al. doi.org/10.1016/j.clineuro.2022.107419. Clinical Neurology and Neurosurgery. **Cat. Clinical surgical**

Rationale

- Cortisol levels are elevated in severe TBI and gradually decrease during patient recovery.
- Changes in cortisol levels may serve as a prognostic biomarker of TBI.

Aim

To examine the relationship between serum cortisol levels(day1, day 7 & after 6 months) and outcomes (GCS & GOS-E) in TBI patients.

Method

Prospective case-cohort study TBI patients (N= 238) at the Department of Neurosurgery.

↓

Clinical and MRI/CT were recorded within the first 24 h of hospitalization.

↓

Glasgow Coma Scale (GCS)

↓

Score 13-15= mild TBI
Score 9-12= moderate TBI
Score≤ 8 as severe TBI

Glasgow Outcome Scale (E) (GOS-E) scores

↓

Unfavorable group (grades 1-5)
Favourable group (6-8)
Survivors (grades 2-8)
Non-survivor (grade 1).

↓

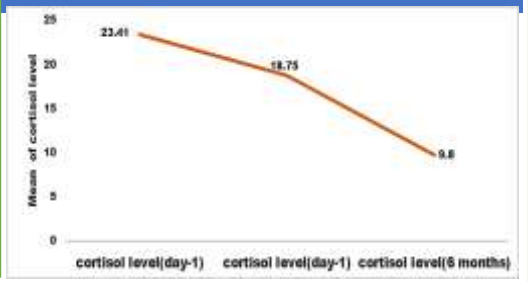
On day 1, day 7, and month 6, cortisol levels were evaluated using the Chemiluminescence Microparticle assay Method (Immunoassay i1000).

↓

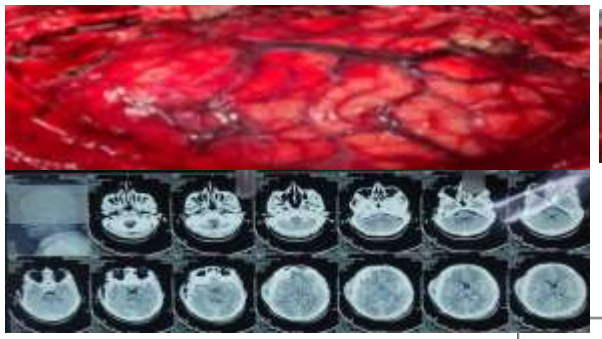
The association between cortisol levels and outcome (GCS&GOS-E) was evaluated on day-1 after 6 months of follow-up.

Result

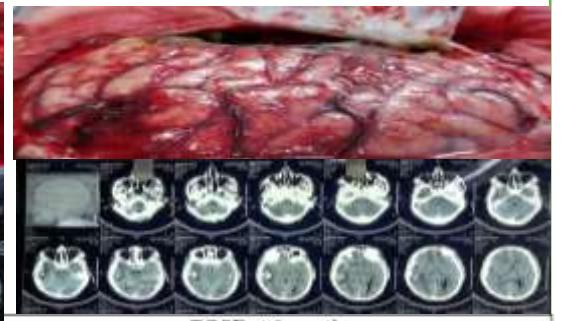
Mean age - 35.03 ± 17.68 years
Male: Female -4.3:1.
Mode of injury- RTA > FFH > assault.



Moderate TBI - 45.4%



Severe TBI -54.6 %



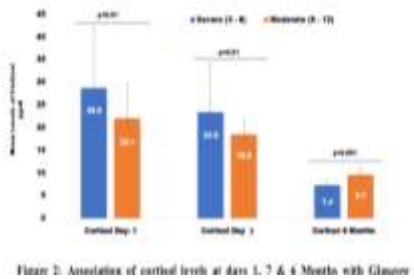


Figure 2: Association of cortisol levels at days 1, 7 & 6 Months with Glasgow

		GOSE at 6 months	
		Unfavorable	Favorable
High Cortisol at Day 1	19.4-35	48 (70.59%)	20 (29.41%)
	35.1-50	33 (94.29%)	2 (5.71%)
	>50	3 (100%)	0 (0%)
High Cortisol at day 7	19.4-35	31 (70.46%)	13 (29.54%)
	35.1-50	10 (100%)	0 (0%)
	>50	3 (100%)	0 (0%)

Conclusion

Cortisol on day-1 had a proportional relationship with the disease severity.
Cortisol levels at day 1 and day 7 increased in unfavorable outcome at 6-month

Tracing the origin of Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2): A systematic review and narrative synthesis

MAURYA VK*, SWATANTRA KUMAR, SHAILENDRA K. SAXENA

Centre for Advanced Research (CFAR), Faculty of Medicine, King George's Medical University (KGMU), Lucknow 226003, India. *saniaansari108@gmail.com

JOURNAL OF MEDICAL VIROLOGY

Edited By: SHOU-JIANG (SJ) GAO

Impact factor (2021): 20.693

Journal Citation Reports (Clarivate, 2022): 2/37 (Virology)

Online ISSN: 1096-9071

INTRODUCTION

- Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) has been responsible for the global coronavirus disease 2019 (COVID-19) pandemic with at least 426 million cases and 5.89 million deaths reported to date.
- Based on the currently available data, it remains unclear whether the inception of SARS-CoV-2 is the result of zoonosis caused by a wild viral strain or an accidental escape of experimental strains.
- It is critical to address this issue to develop preventive and biosafety measures.
- The critical need to advance biosafety standards at all laboratory levels is paramount as experimental virology research on dangerous pathogens develops to reduce the threat of pandemics to the environment and human civilization.

MATERIALS AND METHODS

- **Literature search:** A systematic review was performed by the sources listed in Supporting Information: The sources used for the analysis were PUBMED searches (1966–2022), MEDLINE searches (2000–2022), and CINAHL searches (2000–2022).
- **Clustering and similarity matrix analysis:** Year-wise cluster grams/heatmaps were generated to visualize the origin of SARS-COV-2 from different sources specifically zoonotic origin (Z), laboratory origin (L), and obscure origin (O).
- **Forest plot analysis**: A Forest plot was generated between Z and L origin using Cochrane's Review Manager.

RESULTS

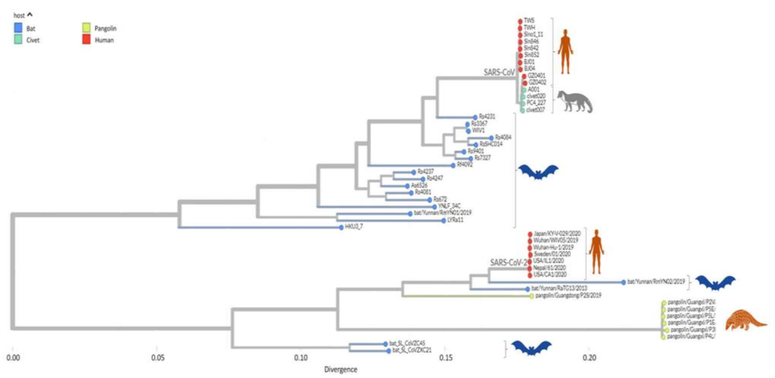


FIGURE.1. Showing the Phylogenetic of SARS-like coronaviruses and SARS-CoV-2. Phylogenetic relationship showing that the SARS-CoV-2 is closely related to the SARS-like coronaviruses isolated from the bats. However, SARS-CoV-2 has been reported in pangolins. Whereas earlier reported SARS-CoV has been isolated from humans, bats, and civets. SARS-CoV-2, Severe acute respiratory syndrome coronavirus 2.

FIGURE.2 showing the Heatmap and similarity matrix of SARS-CoV-2 origin.

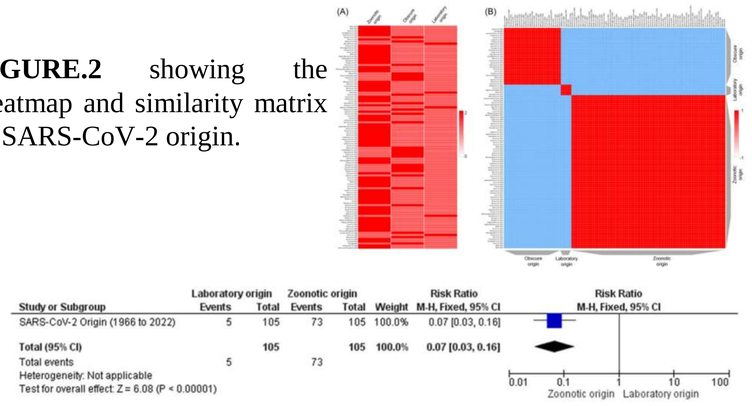


FIGURE.3.Forest plot of theories showing the hypothesis of SARS-CoV-2 origin. The horizontal line represents the risk ratio estimates at 95% confidence intervals (95% CI).

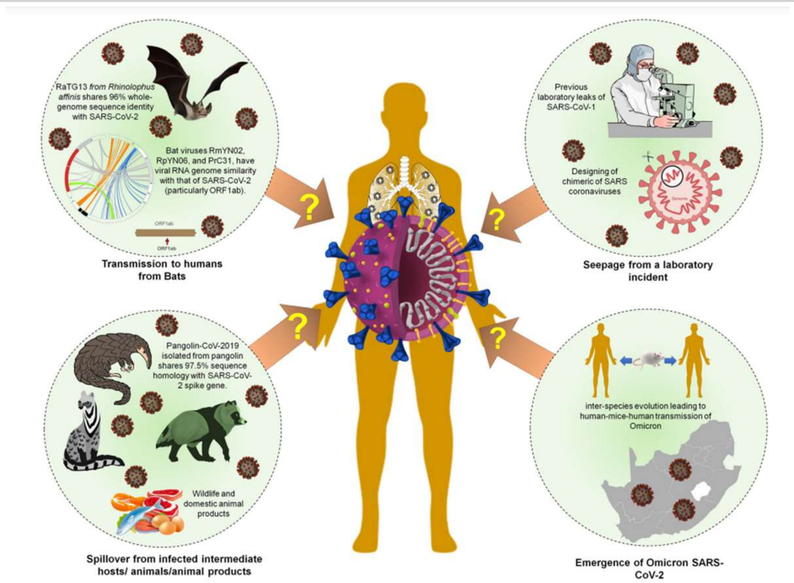


FIGURE.4. Theories of SARS-CoV-2 origin. SARS-CoV-2 shares sequence similarity with intermediate hosts including Bat-CoV-RaTG13. SARS-CoV-2 has been shown to originate as a spillover from the infected intermediate hosts. Pangolin-CoV-2019, a pangolin isolates shared a higher sequence homology of 97.5% with spike glycoprotein.

CONCLUSIONS

Based on our keyword searches in PubMed, CINAHL, and MEDLINE library databases, most of the authors favors the zoonotic spillover as the most probable origin of SARS-CoV-2 whereas origin based on laboratory spillover is unlikely as no concrete evidence is being shown to cite.

REFERENCES

Thakur N, Das S, Kumar S, Maurya VK, Dhama K, Paweska JT, et.al. Tracing the origin of Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2): A systematic review and narrative synthesis. *J Med Virol*. 2022;94(12):5766-5779. doi: 10.1002/jmv.28060.

RESEARCH SHOWCASE 2022
KING GEORGE'S MEDICAL UNIVERSITY U.P., LUCKNOW.

Category of application:
Clinical- Medical

Sujita Kumar Kar, Additional Professor of Psychiatry, King George's Medical University, Lucknow, U.P

- Name of Journal: International Journal of Social Psychiatry
- Year of Publication/Acceptance: (First published online December 27, 2020 and assigned to March 2022 issue)
- Volume and page number (or doi number): Vol. 68; Issue. 2; Page- 309-315; DOI: 10.1177/0020764020984511
- Scimago Journal Rank, Q1/Q2 category: Q1 (IF: 10.461)

Title of the article: **Religious coping in the time of COVID-19 Pandemic in India and Nigeria: Finding of a cross-national community survey (CITATIONS: 12; VIEWS & DOWNLOADS: 5620 by 28-10-2022)**

Authors: Huma Fatima, Tosin Philip Oyetunji, Sudha Mishra, Krittika Sinha, Olorunyomi Felix Olorunsogbon, Oluwayemi Samson Akande, Srinivasan, Sujita Kumar Kar

Corresponding author: **SUJITA KUMAR KAR**

Rationale:

- Religion is often overlooked in researches involving cross-cultural psychology.
- Many people have strong religious beliefs, and during challenging situations like the COVID-19 pandemic, religion may help people cope.
- Unfortunately, a paucity of research evaluated religious coping in the community population during this COVID-19 pandemic.

Aim and Objectives:

- To assess religious coping in the time of the COVID-19 pandemic among the general population

Methodology

- Online survey (CHERRIES guideline); Snow ball sampling; Conducted during April –May 2020 in India & Nigeria
- Participants: Age between 18 and 60 years, having completed at least 10 years of formal education, and have internet access
- Tools used: Semi-structured proforma (demographic and personal characteristics) and Brief RCOPE to measure positive and negative forms of religious coping

Result

- 647 individuals (360 from Nigeria and 287 from India) participated.
- In India: Religious activity- Increased (21.3%); Decreased (10.8%); No change (65.5%)
- In Nigeria: Religious activity- Increased (24.2%); Decreased (44.4%); No change (29.2%)

Discussion and Conclusion

- Significant percentages of people after the COVID-19 pandemic took religious coping steps to overcome their problems.
- Positive religious coping in the Nigerian population was significantly higher than the Indian population.
- Similarly, negative religious coping was significantly higher (for most of the items in the brief RCOPE) in the Indian population than the Nigerian population.

Variables	Total ($N=647$)	India ($n=287$)	Nigeria ($n=360$)	p-value
Responses to the items of brief rcope				
1. Looked for a stronger connection with God				
No	105 (16.2%)	76 (26.5%)	29 (8.1%)	Chi-square: 39.877 $p<.001$
Yes	542 (83.8%)	211 (73.5%)	331 (91.9%)	
2. Sought God's love and care				
No	71 (11.0%)	58 (20.2%)	13 (3.6%)	Chi-square: 45.031 $p<.001$
Yes	576 (89.0%)	229 (79.8%)	347 (96.4%)	
3. Sought help from God in letting go of my anger				
No	166 (25.7%)	97 (33.8%)	69 (19.2%)	Chi-square: 17.922 $p<.001$
Yes	481 (74.3%)	190 (66.2%)	291 (80.8%)	
4. Tried to put my plans into action together with God				
No	94 (14.5%)	73 (25.4%)	21 (5.8%)	Chi-square: 49.41 $p<.001$
Yes	553 (85.5%)	214 (74.6%)	339 (94.2%)	
5. Tried to see how God might be trying to strengthen me in this situation				
No	99 (15.3%)	73 (25.4%)	26 (7.2%)	Chi-square: 40.874 $p<.001$
Yes	548 (84.7%)	214 (74.6%)	334 (92.8%)	
6. Asked for forgiveness of Sin				
No	100 (15.5%)	80 (27.9%)	20 (5.6%)	Chi-square: 60.877 $p<.001$
Yes	547 (84.5%)	207 (72.1%)	340 (94.4%)	
7. Focused on religion to stop worrying about my problems				
No	240 (37.1%)	152 (52.96%)	88 (24.44%)	Chi-square: 55.654 $p<.001$
Yes	407 (62.9%)	135 (47.04%)	272 (75.56%)	
8. Wonder whether God had abandoned me				
No	498 (77.0%)	206 (71.8%)	292 (81.1%)	Chi-square: 7.849 $p=.005$
Yes	149 (23.0%)	81 (28.2%)	68 (18.9%)	
9. Felt punished by God for my lack of devotion				
No	481 (74.3%)	210 (73.2%)	271 (75.3%)	Chi-square: 0.372 $p=.542$
Yes	166 (25.7%)	77 (26.8%)	89 (24.7%)	
10. Wondered what I did for God to punish me				
No	525 (82.2%)	219 (76.3%)	313 (86.9%)	Chi-square: 12.365 $p<.001$
Yes	115 (17.8%)	68 (23.7%)	47 (13.1%)	
11. Questioned God's love for me				
No	525 (81.1%)	210 (73.2%)	315 (87.5%)	Chi-square: 21.43 $p<.001$
Yes	122 (18.9%)	77 (26.8%)	45 (12.5%)	
12. Wondered whether my church/temple/mosque had abandoned me.				
No	498 (77.0%)	206 (71.8%)	292 (81.1%)	Chi-square: 7.849 $p=.005$
Yes	149 (23.0%)	81 (28.2%)	68 (18.9%)	
13. Decided the devil made this happen				
No	499 (77.1%)	237 (82.6%)	262 (72.8%)	Chi-square: 8.694 $p=.003$
Yes	148 (22.9%)	50 (17.4%)	98 (27.2%)	
14. Questioned the power of God				
No	566 (87.5%)	223 (77.7%)	343 (95.3%)	Chi-square: 45.05 $p<.001$
Yes	81 (12.5%)	64 (22.3%)	17 (4.7%)	

Fatima H, Oyetunji TP, Mishra S, et al. Religious coping in the time of COVID-19 Pandemic in India and Nigeria: Finding of a cross-national community survey. International Journal of Social Psychiatry. 2022;68(2):309-315. doi:10.1177/0020764020984511

Gallbladder perforation: a single-center experience in north India and a step-up approach for management

Vivek Gupta, Abhijit Chandra *, Vishal Gupta, Ravi Patel, Amit Dangi, Ajay Pai

Department of Surgical Gastroenterology, King George's Medical University, Lucknow

Hepatobiliary-and-pancreatic-diseases-internationalVolue21,issue 2, April 2022, Pages 168-174. Impact Factor: 3.3 SJR-Q2

Background

- Gallbladder perforation (GBP) is an uncommon diagnosis, usually associated with acute cholecystitis.
- The etiology of GBP remains poorly understood and it presents a diagnostic and surgical challenge.
- Symptoms and signs of GBP may be mimicked by various other pathologies, such as cholecystitis, liver abscess and gallbladder (GB) malignancy.
- An early and correct diagnosis of GBP is imperative for proper management because of high morbidity and mortality.
- GBP has been classified into three categories by Niemeier (1934): free perforation into the peritoneal cavity (type 1), contained localized perforation (type 2) and cholecysto-enteric fistulas (type 3).
- Type 2 is the most common type in previously reported series.
- Cases of intrahepatic perforation of the gallbladder with liver abscess and cholecysto-hepatic communication are very rare but have been reported.

Objectives

- To present the experience of managing spontaneous GBP over nine years at a large, tertiary care university hospital in North India.
- To analyze the outcomes and treatment strategies.

Methods

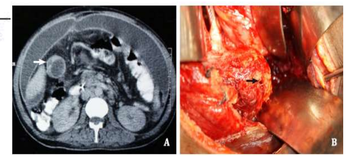
- **Study Design** : Retrospective review of prospectively maintained digital database of consecutive patients.
- **Setting** : Tertiary Teaching Institute.
- **Department** : Department of Surgical Gastroenterology, King George Medical University, Lucknow (UP).
- **Study duration** : January 2010 and June 2018.

- We followed a step-up approach for managing GBP patients. All patients were initially managed conservatively with intravenous fluids and antibiotics.
- Patients with intra- abdominal collections were managed with percutaneous drain placement (PCD).
- Endoscopic retrograde cholangiopancreatography (ERCP) or percutaneous transhepatic biliary drainage (PTBD) was performed, if necessary, for control of sepsis.
- Surgery was performed at a later stage after adequate resuscitation and control of sepsis.
- Treatment options, including PCD, laparoscopic or open cholecystectomy, common bile duct (CBD) exploration or other surgical procedures, were compared with patient outcomes to determine the best management strategy depending on the type of GBP.

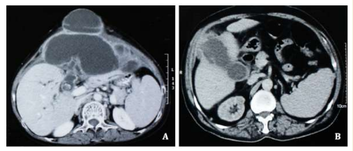
Results

Patient characteristics and summary of patients with spontaneous gallbladder perforation (n = 151).

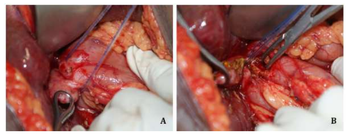
Characteristics	Data
Age (yr)	53.08 ± 13.04
Sex	
Male	70 (46.4%)
Female	81 (53.6%)
Presentation	
Pain abdomen	146 (96.7%)
Fever	82 (54.3%)
Jaundice	47 (31.1%)
Abdominal lump	35 (23.2%)
Acute kidney injury	40 (26.5%)
Hypotension	24 (15.9%)
Co-morbidities	
Diabetes	30 (19.9%)
Hypertension	24 (15.9%)
Coronary artery disease	6 (4.0%)
Chronic obstructive pulmonary disease	15 (9.9%)
Etiology	
Gallbladder stones	128 (84.8%)
Choledocholithiasis	46 (30.5%)
Mirizzi syndrome	8 (5.3%)
Gallbladder cancer	18 (11.9%)
Periampullary cancer	2 (1.3%)
Xanthogranulomatous cholecystitis	27 (17.9%)
Tubercular cholecystitis	1 (0.7%)
Distal common bile duct stricture	1 (0.7%)
Pancreatitis	3 (2.0%)
Cholangitis	10 (6.6%)
Site of perforation	
Fundus	115 (76.2%)
Body	25 (16.6%)
Neck	6 (4.0%)
Cystic duct	2 (1.3%)
Unknown	3 (2.0%)
Types of perforation	
Type 1 (free)	13 (8.6%)
Type 2 (contained)	115 (76.2%)
Type 3 (cholecysto-enteric fistula)	20 (13.2%)
Types 2 and 3	3 (2.0%)



Free (type 1) gallbladder perforation.



contained (type 2) gallbladder perforation.



Cholecysto-gastric fistula (type 3) gallbladder perforation.

US and CT characteristics of patients with gallbladder perforation.

Characteristics	Data
US findings	
Gallbladder stones	128/151 (84.8%) Type 1: 9/13 (69.2%) Type 2: 103/115 (89.6%) Type 3: 16/20 (80.0%)
Extensive intraperitoneal free fluid	13/151 (8.6%)
Small peri-cholecystic free fluid	76/151 (50.3%)
Sonological hole sign	51/151 (33.8%)
Thick-walled gallbladder	78/151 (51.6%)
CT scan findings	
Extensive/loculated intraperitoneal free fluid/peri-cholecystic collection	43/92 (46.7%)
Site of perforation	28/92 (30.4%)
Gallbladder mass	26/92 (28.3%)

Overview of initial management of gallbladder perforation.

Intervention	Type 1 (n = 13)	Type 2 (n = 115)	Type 3 (n = 20)
Conservative (antibiotics only)	2 (15.4%)	18 (15.7%)	1 (5.0%)
US guided drain placement	7 (53.8%)	32 (27.8%) [a]	0
ERCP	6 (46.2%)	29 (25.2%)	7 (35.0%)
PTBD	0	2 (1.7%)	0
Urgent exploratory laparotomy	3 (23.1%)	0	0

Results

Surgical management of gallbladder perforation.

Intervention	Type 1 (n = 13)	Type 2 (n = 115)	Type 3 (n = 20)
Emergency exploratory laparotomy	3 (23.1%)	0	0
Interval laparoscopic converted to open cholecystectomy and/or dismantling of fistula	2 (15.4%)	17 (14.8%)	3 (15.0%)
Laparoscopic cholecystectomy	0	10 (8.7%)	0
Interval open cholecystectomy and/or dismantling of fistula	1 (7.7%)	58 (50.4%)	15 (75.0%)
Partial cholecystectomy	2 (15.4%)	14 (12.2%)	6 (30.0%)
Extended cholecystectomy	0	5 (4.3%)	2 (10.0%)
Common bile duct exploration	3 (23.1%)	20 (17.4%)	5 (25.0%)
Choledochoduodenostomy	1 (7.7%)	4 (3.5%)	3 (15.0%)
Roux-en-Y hepaticojejunostomy	1 (7.7%)	5 (4.3%)	0

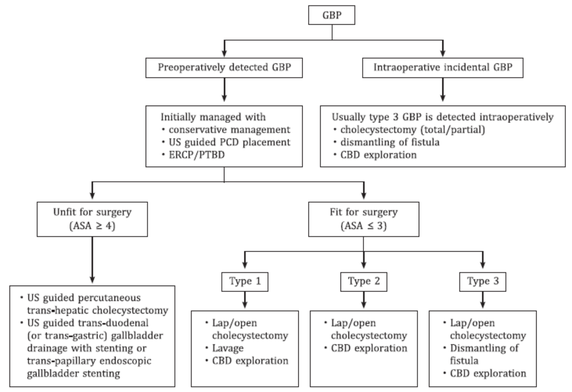
Comparison of three types of gallbladder perforation.

Parameters	Type 1 (n = 13)	Type 2 (n = 115)	Type 3 (n = 20)	P value
Age (yr)	56.61 ± 14.70	52.84 ± 12.98	53.10 ± 11.22	0.95
Sex				0.05
Male	8 (61.5%)	57 (49.6%)	4 (20.0%)	
Female	5 (38.5%)	58 (50.4%)	16 (80.0%)	
Pain abdomen	12 (92.3%)	112 (97.4%)	20 (100.0%)	0.79
Jaundice	7 (53.8%)	34 (29.6%)	5 (25.0%)	0.08
Fever	13 (100.0%)	61 (53.0%)	7 (35.0%)	0.16
Acute kidney injury	11 (84.6%)	25 (21.7%)	4 (20.0%)	< **0.01**
Hypotension	6 (46.2%)	18 (15.7%)	0	< **0.01**
Co-morbidities				
Diabetes	8 (61.5%)	18 (15.7%)	4 (20.0%)	< **0.01**
Hypertension	4 (30.8%)	15 (13.0%)	5 (25.0%)	0.13
Coronary artery disease	0	6 (5.2%)	0	0.76
Etiology				0.89
ACC	9 (69.2%)	103 (89.6%)	16 (80.0%)	
AC	1 (7.7%)	10 (8.7%)	2 (10.0%)	
XGC	0	26 (22.6%)	1 (5.0%)	
GBC	1 (7.7%)	16 (13.9%)	1 (5.0%)	
PACA	1 (7.7%)	1 (0.9%)	0	
Timing of diagnosis				
Preoperative	13 (100.0%)	76 (66.1%)	2 (10.0%)	< **0.01**
Intraoperative	0	39 (33.9%)	18 (90.0%)	< **0.01**
Site of perforation				
Fundus	10 (76.9%)	98 (85.2%)	7 (35.0%)	< **0.01**
Body	2 (15.4%)	12 (10.4%)	11 (55.0%)	< **0.01**
Neck/Cystic duct	1 (7.7%)	5 (4.3%)	2 (10.0%)	0.54
Mortality	1 (7.7%)	2 (1.7%)	0	**0.01**
Postoperative stay (d)	13.25 ± 5.47	7.71 ± 4.47	10.64 ± 6.39	**0.02**

ACC: acute calculous cholecystitis; AC: acalculous cholecystitis; XGC: xanthogranulomatous cholecystitis; GBC: gallbladder cancer; PACA: periampullary carcinoma.

Conclusions

- Laparoscopic cholecystectomy in GBP has higher conversion rates and longer operative time.
- Rate of bile duct injury was also 3 times higher in presence of GBP
- An algorithm for the management of GBP is proposed



- In conclusion, early diagnosis of GBP using multimodal diagnostic workup is of paramount importance and requires high index of suspicion.
- Step-up approach based on patient condition and type of GBP can reduce the morbidity and mortality.
- Laparoscopic cholecystectomy can be difficult in these patients and patients may require open or partial cholecystectomy.

RESEARCH SHOWCASE 2022
KING GEORGE'S MEDICAL UNIVERSITY U.P., LUCKNOW.

Category of application:
Clinical- Medical

Sujita Kumar Kar, Additional Professor of Psychiatry, King George's Medical University, Lucknow, U.P

- Name of Journal: Journal of Public Health
- Volume and page number (or doi number): 10.1093/pubmed/fdab378
- Year of Publication/Acceptance: 08 November 2021
- Scimago Journal Rank, Q1/Q2 category: Q1 (IF: 5.058)

Journal of Public Health

Journal of Public Health
Q1 Medicine (miscellaneous) best quartile
SJR 2021 1.05
powered by scimagojr.com

Title of the article:

Suicide reporting of LGBTQI+ population in India: An analysis of online media reports of the past decade

Authors: Sujita Kumar Kar, Vikas Menon, Srijeeta Mukherjee, Sharmi Bascarane, Ginni Sharma, Jigyansa Ipsita Pattnaik, Ramdas Ransing , Susanta Kumar Padhy, Vivek Agarwal
Corresponding author: Vikas Menon

Rationale:

- Imbalanced portrayal of suicide by the media can have adverse public health consequences.
- Evidences suggest that most of the media reports violate the guidelines on suicide reporting; however, these studies are mostly in the context of general population.
- Special population groups often catch the attention of media and studies are lacking regarding the media reporting of suicide in LGBTQ population.

Aim and Objectives:

- We aimed to evaluate the psychosocial context, as well as the quality of media reporting, of suicide among lesbian, gay, bisexual, transgender people, queer and intersex (LGBTQI+) population

Methodology

- A cross-sectional study was conducted to evaluate online news reports discussing the suicide of LGBTQI+ persons published between January 2011 and January 2021.
- Psychosocial factors associated with suicide were extracted from the reports.
- Quality of suicide reporting was checked against international as well as locally relevant reporting guidelines.

Fig. 1 Word cloud analysis showing the common psychosocial contexts for LGBTQI+ suicide.

Result

- 135 suicide reports from five newspapers were analyzed
- Multiple psychosocial stressors were reported in 54.5% of the suicides.
- Several breaches of reporting were noted in relation to mentioning the identity (55.6%) and method of suicide (54.3%) in the title of report and inclusion of the deceased's photograph (20.4%).
- Potentially helpful reporting characteristics, such as including educational information (2.2%), mentioning warning signs (12.6%) and suicide support service details (3.7%), were rarely practiced.

Discussion and Conclusion

- This is the first study from India that specifically evaluated the quality of suicide reporting by media on LGBTQ population.
- Local language news articles displayed more frequent and serious violations compared to English news reports.
- Indian media reporting of suicide among LGBTQI+ persons is poorly adherent to reporting guidelines.

Kar SK, Menon V, Mukherjee S, Bascarane S, Sharma G, Pattnaik JI, Ransing R, Padhy SK, Agarwal V. Suicide reporting of LGBTQI+ population in India: An analysis of online media reports of the past decade. J Public Health (Oxf). 2021 Nov 8:fdab378. doi: 10.1093/pubmed/fdab378. Epub ahead of print. PMID: 34747474.

Table 3 Potentially harmful & helpful reporting characteristics against World Health Organization media reporting guidelines for suicide in newspapers

Variables		*All news reports (n = 135) n (%)*	*English news reports (n = 54) n (%)*	*Local language news reports (n = 81) n (%)*	*p value*
Potentially harmful characteristics					
Title of the news article					
Mentions in the title of the news article	Name	59 (43.70)	14 (25.93)	45 (55.56)	0.0007
	Age	40 (29.63)	14 (25.93)	26 (32.10)	0.4416
	Gender	126 (93.33)	46 (85.18)	80 (98.76)	0.0019
	Method of suicide***	53 (39.26)	09 (16.67)	44 (54.32)	<0.0001
	Location of suicide	60 (44.44)	16 (29.63)	44 (54.32)	0.0047
	Reason of suicide	99 (73.33)	35 (64.81)	64 (79.01)	0.0676
	Occupation	45 (33.33)	16 (29.63)	29 (35.80)	0.4561
	Life events	82 (60.74)	35 (64.81)	47 (58.02)	0.4287
Main report content					
Mentions of identity of the person	Name	109 (80.74)	39 (72.22)	60 (74.07)	0.8116
	Age	101 (74.81)	41 (75.93)	60 (74.07)	0.8081
	Gender	133 (98.52)	53 (98.15)	80 (98.76)	0.7712
	Occupation	73 (54.07)	30 (55.56)	43 (53.09)	0.7779
Mentions about details of act	Name of method of suicide	107 (79.26)	39 (72.22)	68 (83.95)	0.0996
	Details/steps of suicide	31 (22.96)	13 (24.07)	18 (22.22)	0.0628
	Location of suicide***	89 (65.92)	25 (46.30)	64 (79.01)	<0.0001
Life events mentioned		100 (74.07%)	44 (81.48)	56 (69.14)	0.1088
Mono-causal explanation implied		124 (91.85%)	50 (92.59)	74 (91.36)	0.7973
Mention of suicide associated with homicide		10 (7.41%)	06 (11.11)	04 (4.94)	0.1797
Mention about suicide pact		27 (20.00%)	08 (14.81)	19 (23.46)	0.2188
Mention about Suicide note***		38 (28.15%)	06 (11.11)	32 (39.51)	0.0003
Photo	Photo of the victim**	49 (36.30)	11 (20.37)	38 (46.91)	0.0017
	Photo of the location*	12 (8.89)	01 (1.85)	11 (13.58)	0.0190
Potentially helpful characteristics					
Mentions about the details of bereaved	Effects on bereaved**	12 (8.89)	09 (16.67)	03 (3.70)	0.0095
	Interview of bereaved	16 (11.85)	08 (14.81)	08 (9.88)	0.3845
	Comments of bereaved	24 (17.78)	07 (12.96)	17 (20.99)	0.2322
Mentions about warning signs/indications	Warning signs	17 (12.59)	07 (12.96)	10 (12.34)	0.9156
	Social media post indicating suicide	31 (22.96)	17 (31.48)	14 (17.28)	0.0547
	Text message/phone calls indicating suicide	15 (11.11)	05 (9.26)	10 (12.34)	0.5761
Mentions association with mental health issues		17 (12.59%)	07 (12.96)	10 (12.34)	0.9156
Mentions association with substance use		05 (3.70%)	02 (3.70)	03 (3.70)	1.0000
Mentions about suicide related evidence and preventive measures	Mention about expert opinion	17 (12.59)	10 (18.52)	07 (8.64)	0.0902
	Mention about research finding	06 (4.44)	04 (7.41)	02 (2.47)	0.1726
	Mention about any statistics related to suicide	03 (2.22)	03 (5.56)	0 (0)	——
	Mention about any educative/preventive information	03 (2.22)	03 (5.56)	0 (0)	——
	Mention about any support service contact details	05 (3.70)	05 (9.26)	0 (0)	——

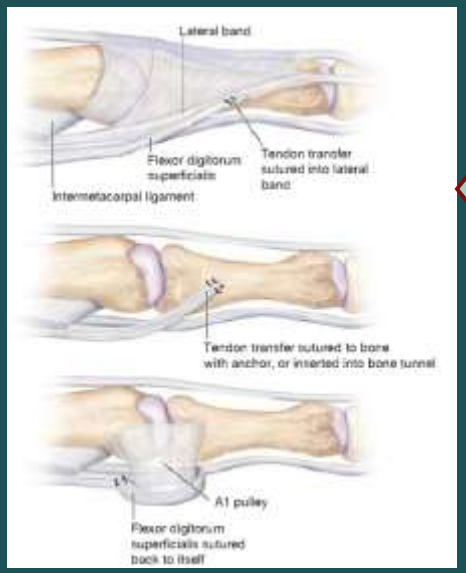
Dynamic correction of ulnar claw hand deformity with a simple insertion into the lumbrical muscle

(Original research; Category: Clinical Surgical)

Arun Kumar Singh, Pawan Dixit, Veena Singh,
Harsha Vardhan©

Journal of Plastic and Reconstructive Surgery (JPRAS) Accepted 12.04.2022.
https://doi.org/10.1016/j.bjps.2022.04.054
Scimago Journal Rank – 0.756, Q1 category, IF – 3.215 (5yr IF)

- Claw hand – Due to loss of ulnar nerve supplied intrinsic muscle of hand (trauma, leprosy)
- Standard treatment involved transferring working tendon units to replace function of lost intrinsic
- A simpler method of performing this procedure described in the article
- Compared with the standard techniques



correction of clawing

Classical insertions
- Lateral bands (Modified Bunnell)
- Proximal phalanx
- Pulley (Zancolli Lasso)

Table 2 Table demonstrating the results in the three groups. The values are the mean values of each groups.

		Lumbrical Reactivation	Zancolli Lasso	Modified Bunnell
Open Hand Assessment (PIP extension lag in degrees)	Index	19.4	21.6	20
	Middle	26.8	23.4	23.8
	Ring	49.4	67.6	50.8
	Little	56.2	45.8	48.2
Unassisted Angle (Lag in intrinsic plus position, in degrees)	Index	27.6	35	21.4
	Middle	35.6	42.6	35
	Ring	60.8	66.6	60
	Little	53	77.4	56.2
GRIP STRENGTH (pounds)	Preoperative	20.8	14.9	12.9
	Change postoperative	3.6	2.7	2.5
	Improvement	17.3%	14.9%	12.9%

Objective parameters in lumbrical reactivation (our technique) found comparable to standard techniques

In lumbrical reactivation, the transferred tendon sutured to the lumbrical muscle in the palm
A logical procedure – maintains the mechanical advantage of intrinsic insertion while retaining the simplicity of a single incision

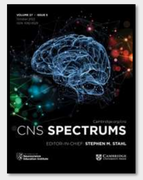
Highlights of this procedure
- Simplified the previous procedure
- Comparable outcome to standard techniques
- Lesser complications like adhesions, stiffness
- **Novel technique – this is its first description in literature**

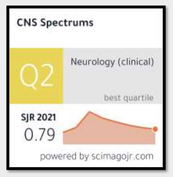
RESEARCH SHOWCASE 2022
KING GEORGE'S MEDICAL UNIVERSITY U.P., LUCKNOW.

Category of application:
Clinical- Medical

Sujita Kumar Kar, Additional Professor of Psychiatry, King George's Medical University, Lucknow, U.P

- Name of Journal: **CNS Spectrums**
- Volume and page number (or doi number): 10.1017/S1092852922000013
- Year of Publication/Acceptance: 27 January 2022
- Scimago Journal Rank, Q1/Q2 category: Q2 (IF: 4.604)





Title of the article: **Safety and efficacy of early augmentation with repetitive transcranial magnetic stimulation in the treatment of drug-free patients with obsessive–compulsive disorder**

Authors: Mohita Joshi , Sujita Kumar Kar, Pronob K Dalal
Corresponding author: Sujita Kumar Kar

Rationale:

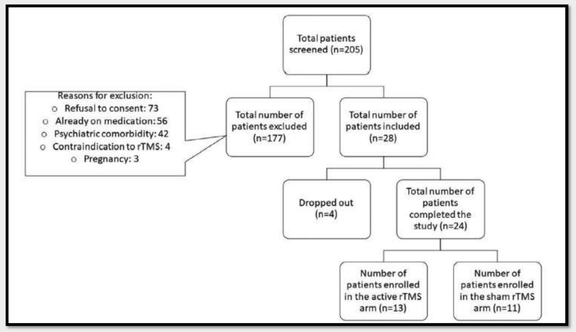
- Obsessive-compulsive disorder (OCD) is a chronic psychiatric disorder that results in significant disability and substantial compromise in the quality of life.
- Until now, the role of repetitive transcranial magnetic stimulation (rTMS) has been primarily explored in individuals with treatment-resistant OCD.
- rTMS is an effective augmentation strategy; however, as an early augmentation strategy, it was not used in any research.

Aim and Objectives:

- To investigate the safety and efficacy of rTMS as an early augmentation strategy in drug-free patients with OCD

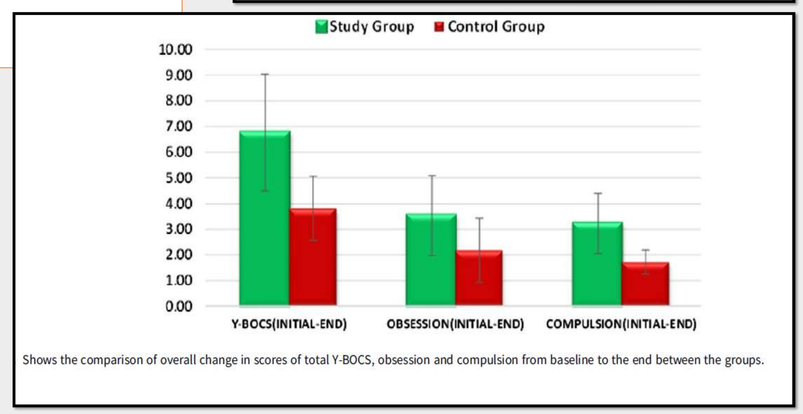
Methodology

- Randomized double-blind, placebo-controlled study (study period: 2019-2020)
- Population: Drug-free patients with obsessive-compulsive disorder
- Intervention: Repetitive transcranial magnetic stimulation (rTMS)
- Comparator: Drug-free patients with obsessive-compulsive disorder receiving sham (placebo) intervention as augmentation to treatment as usual
- Outcome: Safety and efficacy of rTMS as early augmentation strategy
- Protocol used: 20 sessions of rTMS (active/sham) to drug-naïve OCD patients using a standard protocol (1-Hz; 20 trains [80 pulses/train]; 1600 pulses per session at 100% resting motor threshold)
- Target of intervention: Supplementary motor area
- All patients (active and sham) were started on escitalopram 10 mg/d, which was subsequently increased to 20 mg/d after 10 days.
- Tools used: Yale Brown Obsessive Compulsive Scale (YBOCS), TMS side effect check list



Result

- At the end of rTMS therapy, there was a substantial reduction (P = .001) in total Yale-Brown Obsessive-Compulsive Scale, obsessions (P = .030) and compulsions (P = .001) between the groups.
- Only few patients (N = 8) reported mild side effect with rTMS, local pain, and headache being the commonest.
- The study revealed large effect size (Cohen's d = 1.6) of rTMS as an early augmentation strategy in drug-free patients of OCD.



Shows the comparison of overall change in scores of total Y-BOCS, obsession and compulsion from baseline to the end between the groups.

Discussion and Conclusion

- rTMS is a safe and effective early augmentation strategy in the management of OCD.
- Larger randomized controlled trials are required to establish the therapeutic role of rTMS as early augmentation in OCD
- In the first week, five patients in the active group and four from the sham group reported headaches from rTMS, which reduced to only one in the sham group in the next assessment
- Modulation of SMA through rTMS (early augmentation) and SSRI may alter symptom expression, lead to an early reduction of symptoms, helps to reduce the length, severity
- This study is one of the first studies to test the rTMS as an early augmenting agent in drug-free patients of OCD.
- Future protocols with improved stimulation procedures and more participants need to be tested in adults with this condition.

Table 4. Comparison of Scores of Obsessions, Compulsion and Total Y-BOCS from Baseline Till the End of the Intervention Between the Active and the Sham Group

Variable	Group A (Active) Mean ± SD	Group-B (Sham) Mean ± SD	
Reduction in total Y-BOCS score from baseline till the end of the intervention	6.77 ± 2.28	3.82 ± 1.25	*t* (3.83), *P* (.001)
Reduction in obsession from baseline till the end of the intervention	3.54 ± 1.56	2.18 ± 1.25	*t* (2.32), *P* (.030)
Reduction in compulsion from baseline till the end of the intervention	3.23 ± 1.17	1.73 ± 0.47	*t* (15.00), *P* (.001)

Abbreviation: Y-BOCS, Yale-Brown Obsessive–Compulsive Scale.

Joshi M, Kar SK, Dalal PK. Safety and efficacy of early augmentation with repetitive transcranial magnetic stimulation in the treatment of drug-free patients with obsessive-compulsive disorder. CNS Spectr. 2022 Jan 27:1-7. doi: 10.1017/S1092852922000013. Epub ahead of print. PMID: 35082003.

KgmuEye

Binocular Summation in Comitant Exotropia: Change after Surgery

Shaurya Verma, Pallavi Mishra, Siddharth Agrawal, Rajat M Srivastava, Vinita Singh

Category: Clinical Surgical

INTRODUCTION

Binocular summation (BiS) is defined as the superiority of binocular over monocular performance on visual tasks. It is simple and objective unlike other tests of binocularity. This is the 1st Indian study & only 4th in the world to assess the change in BiS after strabismus surgery.

AIM

To assess change in BiS in Comitant exotropia (XT) after strabismus surgery.

METHODOLOGY

Pre-post Interventional Study Design.

Best corrected visual acuity (VA) & contrast sensitivity (CS) of both eyes separately and together (binocularly) were recorded to calculate BiS score in 20 consecutive patients in this pilot study.

BiS score at 3 months after surgery was compared to preoperative score.

Patients
- Children (Age 6.5 ±1.6 years) with Comitant Horizontal Exotropia (n=20)

BiS Calculation
- Visual Acuity & Contrast Sensitivity Scores (Binocular & Uniocular)
- **BiS Score = Binocular Score- Better Eye Score**

Strabismus Surgery
- Strabismus surgery done to achieve ocular alignment

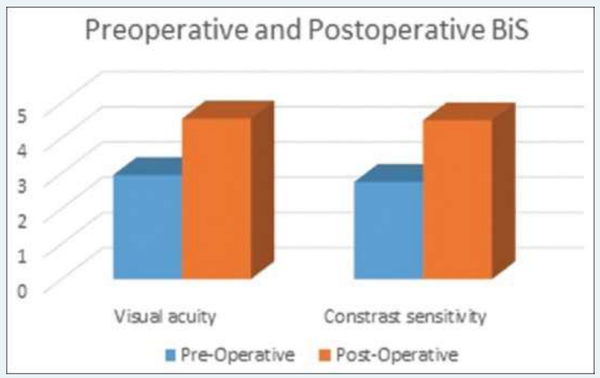
BiS Score Comparison
- 3 months post surgery & preoperative **BiS scores compared (paired t test)**

Result
- **A significant improvement in BiS scores** observed

Recommendation
- **BiS be used for functional outcome of strabismus surgery**

RESULTS

BiS score increased from 2.95 ± 0.88 to 4.55 ± 0.68 ($p < 0.001$) for VA and from 2.75 ± 0.44 to 4.5 ± 0.76 for CS ($p<0.001$) after surgery.



Change in binocular summation for visual acuity (VA) and contrast sensitivity (CS)

CONCLUSIONS

There is significant improvement in BiS in XT after surgery.

Authors recommend it for evaluation of functional outcome of strabismus surgery.

Indian Journal of Ophthalmology, Published: 2021, DOI: 10.4103/ijo_1709_21,
Scimago Rank: 46 (Ophthalmology) / Q2, Clarivate IF: 2.969

RESEARCH SHOWCASE 2022
KING GEORGE'S MEDICAL UNIVERSITY U.P., LUCKNOW.

Category of application:
Clinical- Medical

Sujita Kumar Kar, Additional Professor of Psychiatry, King George's Medical University, Lucknow, U.P

- Name of Journal: Crisis: The Journal of Crisis Intervention and Suicide Prevention
- Volume and page number (or doi number): 10.1027/0227-5910/a000768
- Year of Publication/Acceptance: Published Online: February 23, 2021 and assigned to march 2022 issue
- Scimago Journal Rank, Q1/Q2 category: Q2 (IF: 3.287)

Title of the article:

Assessing the quality of suicide reporting in online newspapers in Uttar Pradesh, India, according to World Health Organization guidelines

Authors: Sujita Kumar Kar, Shreya Shukla, Sagar Rai, Nivedita Sharma, Deblina Roy, Vikas Menon, S M Yasir Arafat

Corresponding author: Sujita Kumar Kar

Rationale:

- Sensitive media reporting has an important role in suicide prevention. However, there is no research on the quality of media reporting of suicide in newspapers of Uttar Pradesh (UP), India

Aim and Objectives:

- To assess the quality of newspaper reports of suicide against the World Health Organization (WHO) reporting guidelines

Methodology

- Suicide news content of four purposively selected newspapers published between March 1, 2019 and February 29, 2020, were scrutinized.
- A total of 501 news reports from UP were included.
- Two Vernacular News Papers (AMAR UJALA & DAINIK JAGARAN) and two English News Papers (THE TIMES OF INDIA & THE HINDUSTAN TIMES)
- The newspapers were accessed from their respective online portals by four independent investigators for 1 year (March 1, 2019 to February 29, 2020).
- In case of multiple suicides reported in a single newspaper report, the case that was most prominently reported on was taken into account for data input.

Exclusion criteria:

- When the newspaper report was not conclusive of suicide or when other possibilities such as homicide were considered, these reports were excluded.
- Suicide bombing and physician-assisted suicide was excluded.
- We also excluded suicides by natives of UP that took place outside the territory of UP.

THE TIMES OF INDIA | Hindustan Times | अमर उजाला | दैनिक जागरण

Table 1. Reporting of potentially harmful characteristics according to the World Health Organization and International Association for Suicide Preventionmedia reporting guidelines for suicide (n = 501) (WHO and IASP, 2017)

Variable	Frequency	%
Mentions in the title of the news article		
Name	43	8.58
Age	24	4.79
Gender	370	73.85
Method of suicide	321	64.07
Reason of suicide	151	30.14
Occupation	235	46.91
Life events	128	25.55
Mentions in the main body		
Identity of the person		
Name	397	79.24
Age	380	75.85
Gender	501	100
Occupation	371	74.05
Details of act		
Suicide method	481	96.01
Details/steps of suicide	179	35.73
Location of suicide	416	83.03
Life events mentioned	335	66.87
Monocausal explanation implied	335	66.87
Details of suicide note reported	115	22.95
Photo		
Of deceased	102	20.36
Of location	74	14.77

Table 2. Reporting of potentially helpful characteristics according to World Health Organization and International Association for Suicide Prevention suicide reporting guidelines (n = 501) (WHO and IASP, 2017)

Variable	Frequency	%
Mentions details of the bereaved		
Effects on bereaved	110	21.96
Interview with bereaved	142	28.34
Comments of bereaved	236	47.11
Mentions warning signs/indications		
Warning signs	33	6.59
Social media post indicating suicide	15	2.99
Text message/phone calls indicating suicide	32	6.38
Mentions association with mental health issues	119	23.75
Mentions association with substance use	17	3.39
Mentions evidences and preventive measures		
Expert opinion	7	1.4
Research findings	3	0.6
Any statistics related to suicide	6	1.2
Any educative/preventive information	2	0.4
Any support service contact details	7	1.4

Table 4. Reporting of potentially helpful characteristics in vernacular and English newspapers according to World Health Organization and International Association for Suicide Prevention suicide reporting guidelines (WHO and IASP, 2017)

Variable[a]	Vernacular newspapers (n = 256)	English newspapers (n = 245)
Mentions details of the bereaved		
Effects on bereaved***	98	12
Interview of bereaved	70	72
Comments of bereaved**	138	98
Mentions warning signs/indications		
Warning signs***	30	3
Social media post indicating suicide	10	5
Text message/phone calls indicating suicide	19	13
Mentions association with mental health issues***	81	38
Mentions association with substance use *	13	4
Mentions evidences and preventive measures		
Expert opinion	6	1
Research findings	2	1
Any statistics related to suicide	2	4
Any educative/preventive information	0	2
Any support service contact details**	0	7

Note. [a]Fisher's exact test was applied. *p < .05. **p < .01. ***p < .001.

Result

- The total number of suicide-related news reports obtained from Amar Ujala, Dainik Jagaran, Times of India, and Hindustan times was 89, 167, 155, and 90, respectively.
- Very few newspapers included helpful characteristics of suicide reporting.

Discussion and Conclusion

- Ramadas and Kuttichira (2011) published the first study of this kind in India.
- Detailing the steps of suicide was more frequent among vernacular newspapers than English newspapers.
- There has been no change in the approach of newspapers in terms of focusing on the preventive (helpful) aspects of suicide reporting, as our study findings concur with prior Indian and South-East Asian studies.
- The Press Council of India adopted the suicide reporting guideline developed by the WHO/IASP in 2019 (Vijayakumar, 2019).
- However, there is a need for intense monitoring to ensure sustained adherence by the media to this guideline.
- Although only four newspapers were scrutinized, to the best of the authors' knowledge ours is the first study to assess the quality of suicide reporting in UP.
- Adequate training of news reporters is needed to initiate and sustain the changes required in media suicide reporting.

Kar SK, Shukla S, Rai S, Sharma N, Roy D, Menon V, Arafat SMY. Assessing the Quality of Suicide Reporting in Online Newspapers in Uttar Pradesh, India, According to World Health Organization Guidelines. Crisis. 2022 Mar;43(2):142-148. doi: 10.1027/0227-5910/a000768. Epub 2021 Feb 23. PMID: 33620257.

The impact of a "short-term" basic intensive care training program on the knowledge of non-intensivist doctors during the COVID-19 pandemic: An experience from a population-dense low- and middle-income country

Authors: **Suhail S Siddiqui*, Sai Saran,** Sulekha Saxena, Shuchi Agrawal, Syed Nabeel Muzaffar, Avinash Agrawal et al.
Australian Critical Care 2022, https://doi.org/10.1016/j.aucc.2022.08.004, **Cat Q1, SJR 702, Clinical-Medical**

Aim and Objectives: The study assessed the utility of basic ICU training comprising of a "one-day course" in increasing the knowledge of non-intensivist doctors from resource-limited settings.

Methodology: Prospective observational study (IEC: 101st ECM IB/P4).

Basis of ICU experience: <1-month, 1-6 month and >6 months.

Basis of Broad specialty: Clinical Medical(CM) and Clinical Surgical(CS)

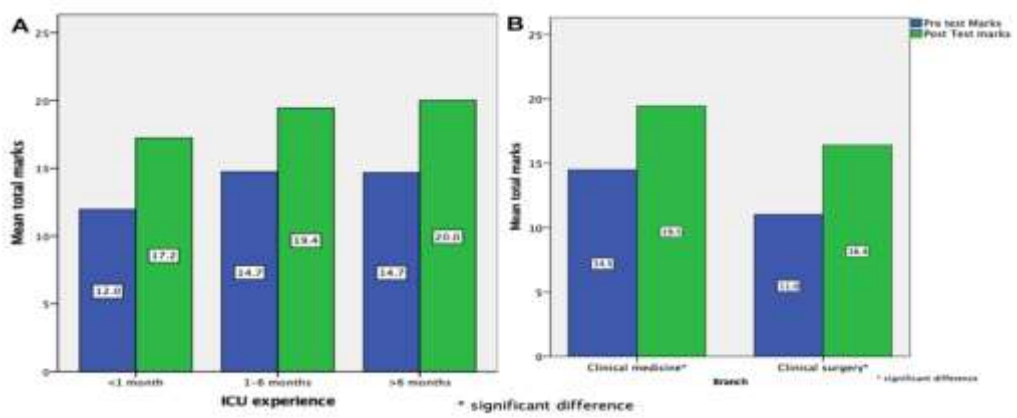
Domains trained and assessed: COVID-19, airway and mechanical ventilation (AMV), arterial blood gas (ABG) analysis, and general ICU care and resuscitation (GICR).

Statistical Methods: Pre- and post-test marks intragroup and intergroup comparison was done using two-way and one-way analysis of variance respectively and for pairwise comparison of means, the Bonferroni post hoc test was used.

Results: : n=252; clinical medicine specialty (85.3%) and 47.6% with ICU experience of 1-6 months.
Significant improvement in the mean total score of the participants after training from 14/25 to 19/25, with a mean difference (MD) of 5.02 ($p < 0.001$).

Table 1: Mean (SD) pre- and post-training score of all participants (n=252)

Domain	Max score	Post-training score	Pre-training score	Change (Post – pre)	p-value
Total score	**25**	19.0 (3.9)	14.0 (3.5)	5.02	**<0.001**
COVID-19	**4**	3.2 (0.8)	3.0 (0.8)	0.14	**0.04**
Airway & MV	**10**	6.9 (1.9)	4.5 (1.8)	2.38	**<0.001**
ABG & Monitoring	**4**	3.2 (1.0)	2.9 (1.1)	0.28	**<0.001**
General ICU care & Resuscitation	**7**	5.6 (1.4)	3.5 (1.5)	2.18	**<0.001**



(A) Increase in the knowledge score of the participants by ICU experience.
(B) Increase in the knowledge score of the participants by broad specialty.

Discussion & Conclusion: Training non-intensivist doctors for "one day" can be useful in improving their knowledge, regardless of their prior ICU experience and speciality.

References: Engberg M, et al. Training non-intensivist doctors to work with COVID-19 patients in intensive care units. Acta Anaesthesiol Scand 2021;65(5).
Monteverde E, et al. Nonintensivist training to increase the staff capacity of intensive care units during COVID-19 pandemic surge in Argentina. Disaster Med Public Health Prep 2021:1-7.

Clinical-Medical

Differentiating flare and infection in febrile lupus patients: Derivation and validation of a calculator for resource constrained settings

Pankti Mehta, Komal Singh, Swathi Anand, Akshay Parikh, Abinash Patnaik, Rudrarpan Chatterjee, Able Lawrence, Saumya Ranjan Tripathy, Chengappa Kavadichanda, Liza Rajasekhar, Negi VS, Bidyut Das and Aggarwal Amita

Introduction

- Increased risk of infection in SLE→ immune dysregulation and immunosuppressant use
- Difficult to differentiate flare from infection
- Routine markers of disease activity- dsDNA, C3,C4, SLEDAI
- Markers of Infection- Procalcitonin, Cultures

Poor Sensitivity High Cost

Objective

To use readily available & low-cost biomarkers to differentiate flare from infection in a febrile patient with SLE

Methods

Prospective Observational study

SLE + fever > 48 hours

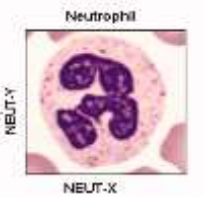
- History
- Examination
- Investigations

Routine Imaging Cultures

Special: NLR, ESR, CRP, C3, C4, Anti- dsDNA Procalcitonin NEUT x, y, z

Flare / Infection / Both

→ Nucleic acid and protein content



→ Toxic granulation

Results

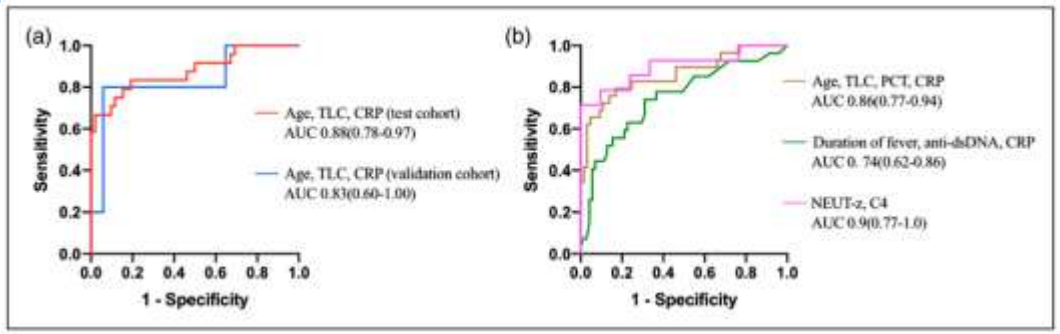
168 febrile episodes

F, 77 | I*, 46 | B, 43

* 40% microbiologically proven, 33 bacterial infections included

Sex, disease duration, drugs, duration of fever, ESR & ESR/CRP not significantly different

Univariate	Flare, n= 77	Infection, n= 33	p
Age, years	24 (19-30)	27 (19-35)	0.006*
SLEDAI 2K	11 (7-16)	4 (0-12)	0.004*
TLC (/cmm)	5200(3270-7515)	8065(4565-12125)	0.004*
N to L ratio	3.7(2.1-5.5)	4.9(2.7-7.36)	0.009*
Neutrophil-x	126 (123-130.8)	133.7 (127.5-136.4)	0.001*
Neutrophil-y	45.4 (43-49.25)	50.15 (47-52.18)	0.03*
Neutrophil-z	133.9 (129.8-139.4)	142 (137-147.3)	0.001*
Anti-dsDNA	196 (180-300)	16(10-22)	0.004*
C3, mg/dl	53.1 (33-85)	89.7 (55.7-147)	0.001*
C4, mg/dl	11 (6.2-18)	24.8(12.6-37)	0.006*
CRP, mg/dl	1 (0.4-3)	5.7 (2.1-12)	0.001*
Procalcitonin	0.19 (0.08-0.5)	0.8 (0.2-3.6)	0.03*



	A	B	C	D	E	F	G	H	I	J	K	L
1	Constant	β age	TLC	β CRP	Age (years)	TLC (/cmm)	CRP (mg/dL)	p/1-p	p	P>0.25=Infection		
2	-7.384	0.1172	0.000336	0.3224				0.00062111	0.00062073	no infection		
3												

Random 80%→ Derivation cohort for calculator, 20%→ validation cohort

Discussion

- Differentiating flare from infection in SLE is important for management
- Isolated biomarkers are insufficient, testing for multiple markers is expensive & time consuming
- Composite index of routine parameters predict infection with fair accuracy

Strengths: Multicentric, Exploring simple, inexpensive markers, first study looking at neut- x,y,z in SLE

Drawbacks: Exclusion of non bacterial infections, Cross-Sectional

Future Plan: Longitudinal study, Include patients with an unclear diagnosis

Conclusions

A composite score of low cost, routinely available parameters like duration of fever, anti-dsDNA and CRP gives good discrimination between infection and flare in a febrile patient with SLE

Details of the paper

Journal: Lupus(Q2), Year of publication & DOI: 2022, 10.1177/09612033221082907

drpankti.m@gmail.com
@PanktiMehta24

Clinical-Medical

Effectiveness of Delayed Second Dose of AZD1222 Vaccine in Patients with Autoimmune Rheumatic Disease

Pankti Mehta[1], Aby Paul[2] , Sakir Ahmed[3], Somy Cherian[2], Ameya Panthak[2], Janet Benny[2], Padmanabha Shenoy[2]

1 Department of Clinical Immunology and Rheumatology, King George's Medical University, Lucknow 2 Centre for Arthritis and Rheumatism Excellence, Kochi 3 Clinical Immunology and Rheumatology, Kalinga Institute of Medical Sciences, Bhubaneswar

Introduction

- The extension of the interval between the 2 doses of AZD1222 from 4–6 weeks→10–14 weeks is more efficacious in healthy subjects
- Is it worth delaying vaccination and withholding immunosuppression for long in patients with AIRDs with lack of data??

Objective

To study to assess real world effectiveness of the extended interval on the humoral immunogenicity as compared to the usual dosing schedule of AZD1222

Methods

COVID-19 vaccination cohort from CARE(CVCC)

Dosing interval

Group 1: 4-6 weeks

As per guidelines by the GOI

Group 2: 10-14 weeks

- Anti Spike (S) antibodies
- Breakthrough infection

Results

Total cohort, 495*

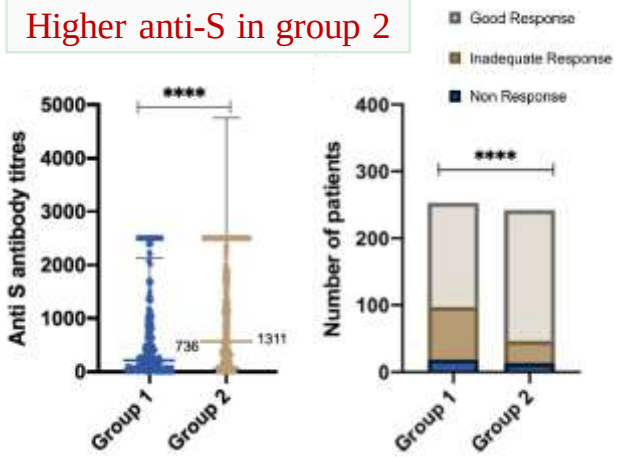
Group 1, 253

Group 2, 242

Age:56.5±11.5, F: 84%

*Both the groups were similar except for higher comorbidities, RA and steroid use in group 1

Higher anti-S in group 2



Predictors of anti-S Ab titres

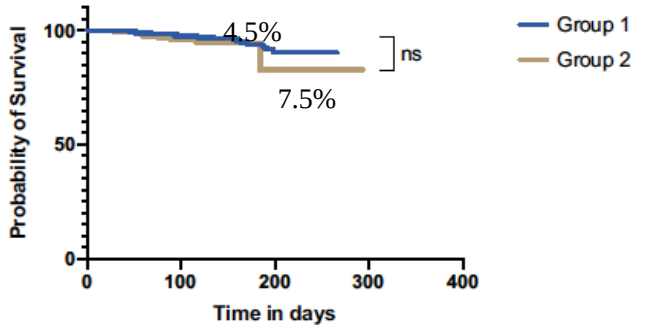
Univariate (t test)

- DM
- MTX
- SSZ
- MMF
- Vaccine interval

Multivariate (GLM)

- DM
- Vaccine interval

Breakthrough infections were numerically higher in Group 1 on survival analysis



Discussion

- Healthy Subjects

✓ Longer interval between 2 doses →↑Ab,↑T cell responses,↓ ICU admission

✓ Population level: Vaccine scarcity→ partial protection & reduced mortality

- Antibody levels = correlate of protection against infection and thus desirable to have good humoral response
- AIRDS: Optimization of vaccine schedule important in immunosuppressed patients to↓breakthrough infections, mortality & generation of viral mutants

Conclusions

Increasing the gap between doses of the AZD1222 vaccine from 4 weeks to 10–14 weeks was found to be more beneficial in terms of antibody response in patients with AIRDs

Details of the paper

Journal: Clinical Rheumatology (Q2), Year of publication & DOI: 2022, 10.1007/s10067-022-06247-3

drpankti.m@gmail.com

@PanktiMehta24

Comparison of the clinical performance of the i-gel, LMA Supreme, and Ambu AuraGain in adult patients during general anesthesia: a prospective and randomized study

Tejashri Chinthavali Lakshmi, **Tanmay Tiwari**, Jyotsna Agrawal, Rajni Kapoor, Vikrannth Vasanthakumar
Department of Anaesthesiology and Critical Care, K.G.M.U, Lucknow

Korean Journal of Anesthesiology journal 0.991 Q1

Korean J Anesthesiol 2022;75(4):316-322
https://doi.org/10.4097/kja.21212

Background: Supraglottic airway devices (SADs) are routinely used for securing the airway. In this study, the clinical performance of three SADs in adult patients under general anesthesia was compared.

Methods: ASA physical status I–III subjects were randomly assigned to the i-gel(I), LMA supreme (L), or Ambu Auragain (A) group (30 per group). The primary objective of this study was to compare insertion times.
Additionally, ease of insertion, number of attempts, oropharyngeal leak pressure (olp), airway maneuver requirement, difficulty with gastric tube placement, and complications were assessed.

Table 2. Comparisons of Various Parameters between the Study Groups

	Group I (n = 30)	Group L (n = 30)	Group A (n = 30)	P value
Size of device (size 3/4)	24/6	25/5	23/7	0.812
Number of attempts (1/2)	29/1	25/5	26/4	0.232
Insertion time (s)	16.9 ± 4.9	19.6 ± 5.2	22.1 ± 5.7	0.001
OLP (cmH_2O)	9.4 ± 6.1	24.1 ± 6.3	29.8 ± 3.0	< 0.001
Ease of insertion (1/2/3/4)*	25/3/2/0	24/3/3/0	23/6/1/0	0.630
Failed insertion/device failure during surgery	0/0	0/0	0/0	1.000
Airway maneuver requirement	2	1	3	0.585
Gastric tube insertion difficulty	1	0	0	0.364

Values are presented as number or mean ± SD. Group I: i-gel, Group L: LMA Supreme, Group A: Ambu AuraGain. OLP: oropharyngeal leak pressure. *Ease of insertion was graded as 1 = no resistance, 2 = minimal resistance, 3 = moderate resistance, and 4 = unable to place the device.

Results: The groups were comparable in terms of demographic parameters and side effects.

Conclusions: All three devices are convenient and effective for airway management. However, the shorter insertion time required for the i-gel make it more suitable for resuscitation and emergencies, while aspiration risk may be reduced with the Ambu AuraGain.

Clinical-Medical category

Treatment-resistant obsessive-compulsive disorder and multimodal augmentation: a case study

NON COMPETITIVE UG CASE REPORTS

Authors- Shreya Verma, Shubhajeet Roy, Vaibhav Singh, Amit Singh, Sujita Kumar Kar *
King George's Medical University, Lucknow, Uttar Pradesh, India (Verma S, Roy S)
Department of Psychiatry, King George's Medical University, Lucknow, Uttar Pradesh, India (Singh V, Singh A, Kar SK)

Brain Network and Modulation 2022;1(3):146-147. doi: 10.4103/2773-2398.356526

Introduction

Obsessive-compulsive disorder (OCD) is a common psychiatric disorder, and a large number of patients become resistant to conventional treatments during their illness. No responses to dose optimization often warrant augmentation with psychotherapy, pharmacological agents or neuromodulation

History

A 34-year-old female presented with chief complaints of recurrent repetitive thoughts of contamination and repetitive hand washing and cleaning acts for the past 6 years. Initially, she would wash her hands 5–6 times a day, but the symptoms had worsened over the past few years. At the time of reporting, it had reached up to 8-9 times a day, with a frequency of 6–8 times each time. The patient also started to take more time to finish bathing, which initially would take up to 10 to 15 minutes but later it had increased up to 2 hours.

Mental Status Examination

On General Examination, Her weight was 60 kg, height was 148 cm, body mass index was 27.4 kg/m2, blood pressure was 122/84 mmHg, and pulse rate was 88 beats/min. All the general and systemic examinations were unremarkable. Baseline investigations, including complete blood count, liver function test, and renal function test, were done, all of which were within normal limits. On mental status examination, the patient's predominant anxious affect and thinking revealed obsessional thoughts with unsuccessfully resisted acts regarding contamination

Diagnosis

A diagnosis of OCD with mixed obsessional thoughts and acts with pelvic inflammatory disease under the 10th edition of the International Classification of Diseases (ICD10) criteria was made

Treatment and Management

The patient was started on fluvoxamine 100 mg/d, aripiprazole 5 mg/d and clonazepam 0.25 mg/d. After 2 months, clomipramine 50 mg/d was added, which had to be stopped as the patient was reporting constipation; There was not much improvement so after 2 months, the patient was admitted, then she was continued with fluvoxamine 300 mg/d, aripiprazole 5 mg/d, and clonazepam 0.25 mg/d. At hospitalization, her severity of symptoms was evaluated (her score on YBOCS was 25/40). Behavior therapy in the form of exposure and response prevention was done and 16 sessions of transcranial direct current stimulations (tDCS) were given. During her 10 days of stay, her symptoms improved markedly, and she was discharged with advice to follow up. At the time of discharge, her score on YBOCS was reduced to 11/40 (56% reduction of symptoms)

Discussion

Conventionally, a single augmentation strategy is recommended to optimize therapeutic outcomes. However, many patients are more in need of multiple augmentation strategies. In this current case, a 56% reduction in YBOCS score happened over 8 days of hospitalization. The patient did not report any side effects due to any of these treatment modalities used in combination. Considering the safety, efficacy, and rapid reduction of symptoms, the multimodal augmentation strategy may be considered a reliable management strategy in the management of OCD. To substantiate the evidence, there is a need for larger studies on various combinations of augmentation strategies and different settings

Hemophagocytic Lymphohistiocytosis after ChAdOx1 nCoV-19 Coronavirus Vaccination in a Patient with No Known Comorbidities

Nitin Rai[a], Soumitra Misra[a], Shashank Prajapati[a], **Shubhajeet Roy[a],** Geeta Yadav[c]

a: Critical Care Medicine, King George's Medical University, Lucknow; b: Faculty of Medical Sciences, King George's Medical University, Lucknow ;

c: Pathology, King George's Medical University, Lucknow

Indian Journal of Medical Specialities *2022. doi: 10.4103/injms.injms_80_22*

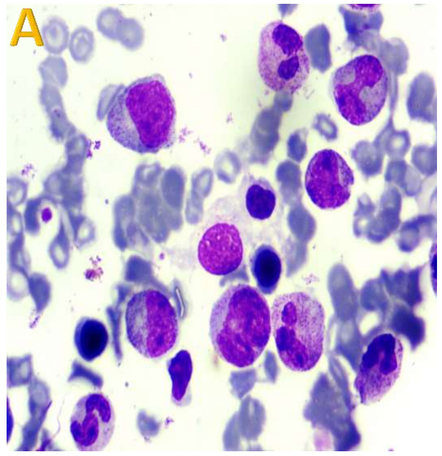
Research showcase 2022. ***Category: Non-Competitive UG Case Reports***

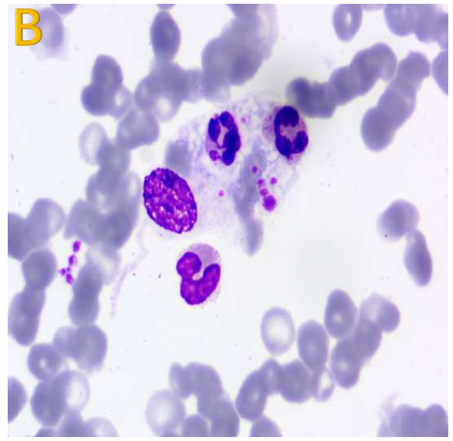
Introduction: HLH is an inflammatory condition where there is marked cytopenia and large-scale activation of macrophages and CD8+ T cells. HLH may be of two types—primary caused by genetic abnormalities and secondary due to acquired causes [1].

History: A 35 years old male, with no comorbidities, developed fever, backache, right testicular pain, diminished sensorium, decreased urine output, and needed invasive ventilation after receiving the first dose of Covishield (ChAdOx1 nCoV- 19)

Clinical Examination*:* On CVS Examination, sinus bradycardia and generalized edema were noted. Penile edema was also present.

Investigations*:* CT of head and chest were normal; tropical fever panel, Viral Markers, and autoimmune panels were negative; cultures from blood and endotracheal aspirate were sterile; liver and renal functions showed mild derangement (the patient was anuric and had ALF with MODS); and CSF studies were normal. USG abdomen revealed mild hepatosplenomegaly, mild testicular swelling, and right-sided inguinal lymphadenopathy.



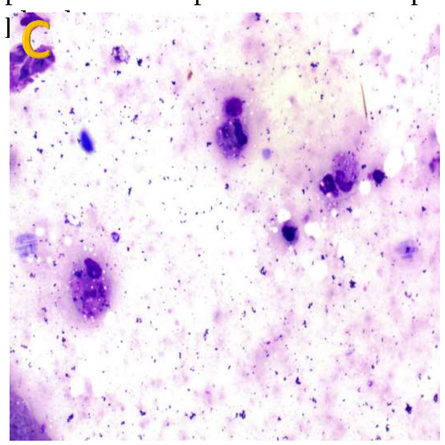


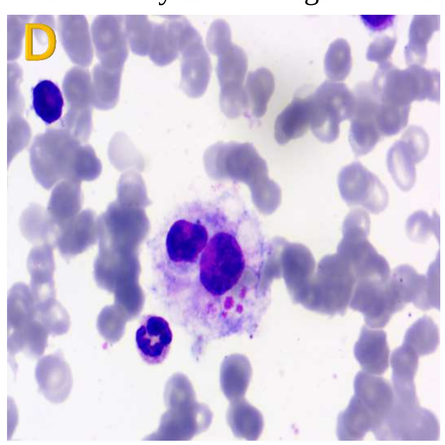
A: Bone marrow aspirate smear showing hemophagocytosis with engulfment of lymphocyte and normoblast. (Leishman Stain, 1000x).

B: Bone marrow aspirate smear showing hemophagocytosis with engulfment of neutrophil and platelets. (Leishman Stain, 1000x)

C: Bone marrow aspirate smear showing hemophagocytosis with engulfment oflymphocyte, platelet and red blood cells. (Leishman Stain, 1000x)

D: Fine Needle Aspiration (FNA) smear from inguinal lymph node showing paucicellular aspirate smear with presence of histiocytes with engulfment of l





1. Rosado FGN, Kim AS. Hemophagocytic Lymphohistiocytosis An Update on Diagnosis and Pathogenesis. Am J Clin Pathol. 2013;139:713-727. doi: 10.1309/AJCP4ZDKJ4ICOUAT

Disease Progression: He developed bicytopenia with hemoglobin being 9.0 g/dL, Hematocrit of 51%, platelet count 50 × 10 9 /L, and INR of 1.6. His total bilirubin was 4mg/dL, ferritin 2130 µg/L, triglyceride 353 mg/dL, fibrinogen 1.41 g/L, and serum ammonia 117 IU/L. ECG showed diffuse ST elevation and bilateral bronchovascular markings were prominent on CXR. Bone marrow and lymph node biopsy showed hemophagocytosis with engulfment of neutrophils, lymphocytes, and normoblasts.

Differential Diagnosis: HLH, SIRS, LCH.
Final Diagnosis: HLH

Management and Intervention: Intravenous steroids were initiated because of underlying HLH. Due to our Patient's clinical stability, resolution of symptoms, and improvement of HLH parameters, he did not require any HLH-specific therapy.

Conclusion: There was no clear precipitant of HLH. It is unclear if he had any pre-existing genetic predisposition to HLH. The plausible explanation could be intense immune activation by the vaccine producing aberrant activation of inflammatory cytokines.

LEFT DIAPHRAGMATIC EVENTRATION IN A CASE OF BLUNT TRAUMA TO THE CHEST: TRAUMATIC OR CONGENITAL ?

KING GEORGE'S MEDICAL UNIVERSITY, LUCKNOW

SURGICAL UPDATE : International Journal of Surgery and Orthopedics
Research Showcase 2022. Category : Non competitive UG Case Report

AGGARWAL S. (Faculty of Medical Sciences)
ROY S. (Faculty of Medical Sciences)
KATIYAR D. (Faculty of Medical Sciences)
DR. DHEER Y. (Associate Professor, Dept. of Trauma Surgery, KGMU)

01 INTRODUCTION

➔ **Diaphragm is a dome-shaped muscle that plays a strong role in the inspiratory phase of respiration and also acts as a barrier between the thoracic and abdominal cavities.**

➔ **The diaphragm is innervated by the phrenic nerve, which originate from the C3, C4, and C5 spinal nerve roots.**

➔ **Diaphragmatic eventration (DE) is an atypical condition in which the muscles are perpetually upraised but retain their continuity and anatomical attachment to the original coastal margins.**

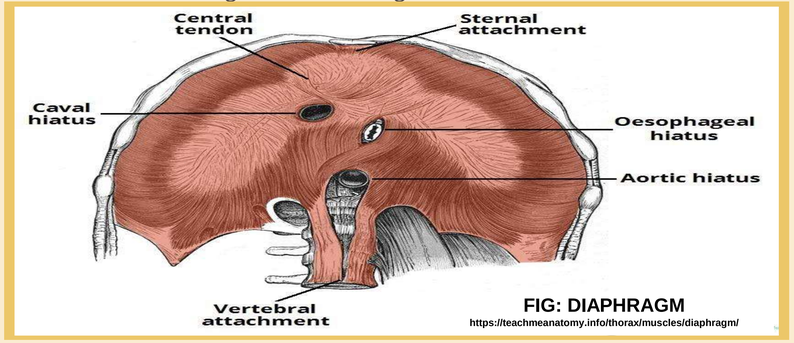


FIG: DIAPHRAGM
https://teachmeanatomy.info/thorax/muscles/diaphragm/

02 HISTORY

➔ **30 years old male.**

➔ **Presented with the alleged history of road traffic accident (RTA).**

➔ **Side to side collision of a truck and motorcycle was the mechanism of trauma.**

➔ **Chief complaints included difficulty in breathing and pain in the chest.**

03 EXAMINATION

➔ **Patient was well oriented to time, place and person.**

➔ **Glasgow Coma Scale (GCS) was 15 ($E_4V_5M_6$).**

➔ **No signs of pallor, icterus, cyanosis, or edema were noted.**

➔ **Chest examination revealed decreased air entry on the left side and the presence of bowel sounds in the left lower chest area.**

04 INVESTIGATION

➔ **CT scan was suggestive of colonic shadow on the lower left side of the chest area. Ultrasonography of the thorax revealed eventration of the left dome of the diaphragm and minimal pleural effusion.**

05 DIFFERENTIALS

The clinical presentation directed us towards the following differential diagnosis :-

➔ **Diaphragmatic paralysis**
➔ **Diaphragmatic eventration**
➔ **Diaphragmatic rupture**
➔ **Diaphragmatic hernia**
➔ **Phrenic nerve palsy**

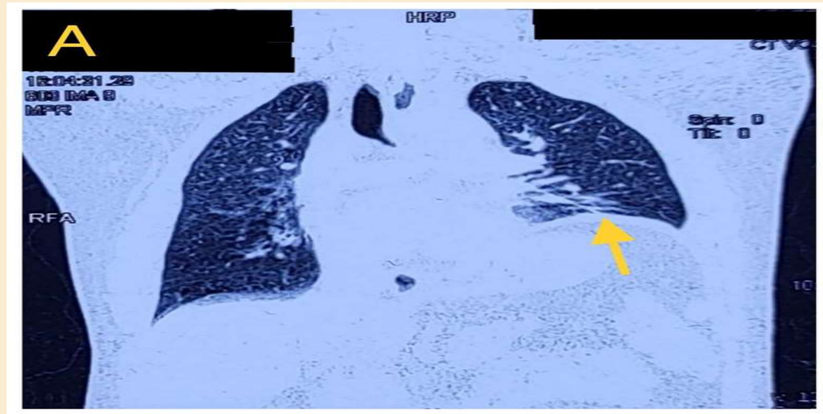
06 DIAGNOSIS

After all the clinical evaluation, the final diagnosis was concluded to be Symptomatic Unilateral Diaphragmatic Eventration of the left dome of diaphragm.

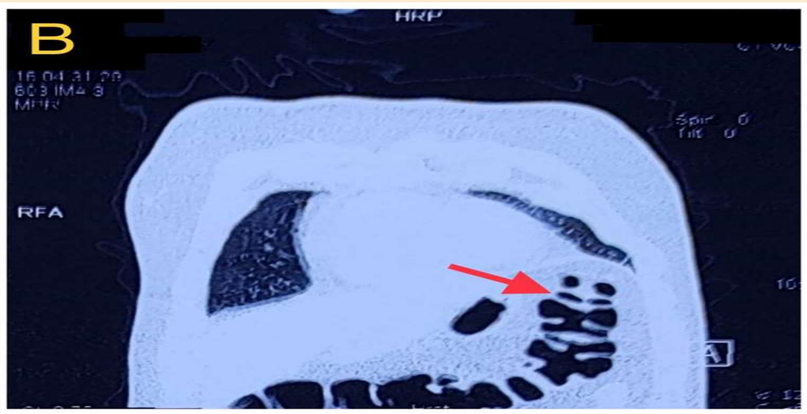
07 MANAGEMENT

MEDICAL INTERVENTION : Oxygen was provided at the rate of 1-2 L/min.
SURGICAL INTERVENTION : Respiratory distress was unresponsive to oxygen therapy. Plication of diaphragm was performed.

08 CLINICAL IMAGES



A : CT (Computed Tomography) scan of thorax showing eventration of the left dome of diaphragm.



B : CT (Computed Tomography) scan abdomen showing colonic shadow in the lower left chest area.

09 CONCLUSION

➔ **Symptomatic unilateral diaphragmatic eventration due to blunt trauma to the chest in a patient with an alleged history of road traffic accident is a very rare case. The singularity of this case is in terms of it, being etiologically exceptional.**

➔ **This case presents a diagnostic dilemma as the patient either had an asymptomatic congenital diaphragmatic eventration, which was accidentally exposed after the blunt trauma or the trauma was the causative factor of the diaphragmatic eventration.**

➔ **The solution to this dilemma is even more complicated due to the absence of any previous radiological imaging of the patient.**

➔ **By this case we highlight the importance of a high-grade apprehension, thorough past history taking, a good clinical examination, and multiple imaging modalities to arrive at a final diagnosis.**

Bowel Gangrene Associated with Jejunal Diverticulosis: A Rare Case Report

Ajay K Pal[1], **Shubhajeet Roy[2],** Ankita Bajpai[1], Harvinder S Pahwa[1], Awanish Kumar[1], Jaideep Soni[1]

1: Department of General Surgery, King George's Medical University, Lucknow; 2: Faculty of Medical Sciences, King George's Medical University, Lucknow

Journal of Surgery Archives. *2022;37(1):28-29.*

RESEARCH SHOWCASE 2022. *Category: Non-competitive UG Case Reports*

Introduction: Diverticulae are hollow outpouchings and are common structural abnormalities that can occur right from the esophagus to the recto-sigmoid junction. Diverticulae in the small intestine may be either congenital or acquired. They vary in size and are usually more than one in number.To our knowledge, ours is the first-ever case of bowel gangrene due to jejunal diverticulosis to be reported.

History and Examination: A thirty-years young male presented with pain in the whole of the abdomen with intermittent vomiting and inability to pass flatus and faeces for the last four days. On examination, the patient had a blood pressure of 106/66 mm of Hg, pulse rate of 118/min, and respiratory rate of 20/min. The abdomen was distended with diffuse tenderness and bowel sounds were sluggish.

Investigations: Laboratory evaluations showed Leucocytosis with TLC of 18,000/mm3. His liver function test showed his slightly raised ALT levels of 60IU/L with rest being normal. Kidney Function tests were in the normal range. He had raised serum amylase, CRP levels (240 mg/dL), and Lactate levels of 5 mg/ dL; Prothrombin time of 20.2 seconds, and INR was 1.59.

Figure 1: a. Intraoperative view of the gangrenous bowel loops along with the jejunal diverticulae (arrows). **b.** Arrow showing well-defined diverticula located on mesenteric border of jejunum.

Management: He was finally diagnosed as a case of acute intestinal obstruction with small bowel gangrene with multiple jejunal diverticulosis on the mesenteric side (starting from 1 foot distal to DJ flexure). He underwent exploratory laparotomy with peritoneal lavage and the gangrenous diseased bowel was resected, under GA. The jejuno-ascending stoma was made 3 feet distal to DJ flexure, and the patient was put on a single pelvic drain. Postoperatively, patient stoma output monitoring was done and the patient was nutritionally built up with enteral and parenteral nutrition for early restoration of bowel continuity. The drain was removed on the 4th postoperative day. After 28 days, the patient then underwent a restoration of bowel continuity by means of a jejuno-colic reanastomosis, under GA. The patient was then discharged with general fair conditions and stable vitals and was allowed a full oral diet.

Conclusion: Jejunal diverticulosis, although a rare cause of acute or chronic abdominal pain symptoms, may lead to obstruction, perforation, inflammation, and hemorrhage complications. Obstruction leading to bowel gangrene is even rarer in the cases encountered until jejunal diverticulosis.