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3.7.1: Average number of Collaborative activities for research, faculty exchange, student exchange/ Industry-internship etc per year

Title of the Collaborative activity: The knowledge, perception and

behavior among dental practitioners towards diagnosis of oral

pathological lesions by biopsy- A cross-sectional survey

Name of the collaborator: 1) Faculty of Dental Sciences IMS BHU

Varanasi, Uttar Pradesh, India; 2)Government Medical College (GMC),

Madhya Pradesh, Ratlam, India;

Name of the participants: 1) Sanjeev K. Gupta

Year of collaboration: 2021-22

Journal of Medical Pharmaceutical and Allied Sciences • Volume 10, Issue 5, Pages 3500 - 3503 • September 2021

Document type

Article

Source type

lournal

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# The knowledge, perception and behavior among dental practitioners towards diagnosis of oral pathological lesions by biopsy- A cross-sectional survey

Sabharwal, Harloveen Virk<sup>a</sup>; Gupta, Sanjeev K. <sup>b \infty</sup>; Sharma, Sarika<sup>c</sup>; Singh, Rakesh Kumar; Sabharwal, Sumit<sup>d</sup>; Chhabra, Kumar Gaurav<sup>e</sup> Save all to author list

- <sup>a</sup> Faculty of Dental Sciences IMS BHU Varanasi, Uttar Pradesh, India
- <sup>b</sup> Santosh Dental College and Hospital, Uttar Pradesh, Ghaziabad, India
- <sup>c</sup> Government Medical College (GMC), Madhya Pradesh, Ratlam, India
- d Uttaranchal Dental and Medical Research Institute, Uttarakhand, Deharadun, India

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#### Abstract

Author keywords

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#### **Abstract**

The foundation of diagnosing the oral pre malignant and the malignant lesions is biopsy; and the Behavior of taking biopsy should be a familiar Behavior for all dental professionals hence; the main aim of current cross-sectional survey was to explore factors associated with the knowledge, perception and Behavior of Dental practitioners towards diagnosis of Oral Pathological lesion by Biopsy. Current study is a Descriptive Cross-sectional study conducted among 163 dental practitioners including both general dental (GP) practitioners and the specialists excluding Oral pathologists working in private dental set up. To explore knowledge, the perception and Behavior and factors associated with it among dental practitioners, a close ended questionnaire was framed consists of 30 questions divided into 3 parts. Most of study participants (59 (36.19%)) were within 36-45 years age group. Male respondents

#### Cited by 1 document

Use of artificial intelligence in the diagnosis of oral cancer: A scoping review

Saxena, Y., Chhabra, K., Chaudhary, P. (2022) Journal of Datta Meghe Institute of Medical Sciences University

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Attitude toward oral biopsy among general dental practitioners: Awareness and practice

Bataineh, A.B., Hammad, H.M., Darweesh, I.A. (2015) Journal of Orofacial Sciences

Awareness of general dental practitioners about oral screening and biopsy procedures in Udaipur, India

Anandani, C., Metgud, R., Ramesh, G. (2015) Oral Health and Preventive Dentistry

Special care for oral tissue samples after biopsy: Proper storage and transport — a comparative study | Cuidado especial para las muestras de tejido bucal después de la biopsia: Almacenamiento y transporte adecuados — un estudio comparativo.

Azizzadeh, A., Zargaran, M., (2021) Journal of Oral Research

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Find more related documents in Scopus based on:

Authors > Keywords >

Title of the Collaborative activity: Anatomy and histology: Pregnancy

induced hypertensive placentae

Name of the collaborator: 1) Department of Biology, Birla Balika

Vidyapeeth, Pilani, Rajasthan, India

Name of the participants: 1) Pratishtha Potdar

Year of collaboration: 2020-21

# Anatomy and histology: Pregnancy induced hypertensive placentae

Potdar, Pratishtha<sup>a</sup>; Prajapat, Rajneesh<sup>b</sup> ; Mishra, Anita<sup>b</sup> Save all to author list

<sup>a</sup> Department of Anatomy, Santosh Medical College, Santosh University, Ghaziabad, Uttar Pradesh, India

<sup>b</sup> Department of Biology, Birla Balika Vidyapeeth, Pilani, Rajasthan, India

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Abstract

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Metrics

#### Abstract

The pregnancy-induced hypertension is diagnosed at an early stage; this can reduce the risk for both mother and fetus remarkably. The basic scheme of placental morphology has been in use for a century. The present study has been undertaken to compare the morphology and histology of normotensive placentae with the pregnancy-induced hypertensive placentae and correlate this finding with the birth weights of newborn babies. The histology of placentae in pregnancy-induced hypertensive (P.I.H) cases also show a significant increase in syncytial knot formation, cytotrophoblast cellular proliferation, fibrinoid necrosis, calcification, stromal fibrosis, hyalinization of villi, and medial coat proliferation in comparison to the control group. The hypertensive disorders of pregnancy adversely influence the morphology of the placenta. The pathological changes observed in placentae of patients with hypertensive disorders of pregnancy like infarction and end artery obliteration adversely influence the perinatal outcome. However, none of these pathological changes of the placenta are specific to hypertensive disorders of pregnancy. © 2021 Nova Science Publishers, Inc.

Author keywords

Histology; Hypertensive placentae; Morphology; PIH

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Morphometric study of human placenta in preeclampsia associated with intrauterine growth retardation

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Study of structural changes in placenta in pregnancy-induced hypertension

Salmani, D., Purushothaman, S., Somashekara, S.C. (2014) Journal of Natural Science, Biology and Medicine

Morphometric study of placenta associated with normal pregnancy and pregnancy induced hypertension

Bobade, H.J., Gajbe, U.L., Fulzele, R.R. (2012) Journal of Datta Meghe Institute of Medical Sciences University

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Find more related documents in Scopus based on:

Authors > Keywords >

**Title of the Collaborative activity:** Expression of podoplanin in tumor

cells and lymphatic vessels in both tumoral and peritumoral areas and

correlation with metastatic potential of oral squamous cell carcinoma

Name of the collaborator: 1)Department of Oral Pathology and

Microbiology, Sarjug Dental College, Darbhanga, India;

Name of the participants: 1) Manu Gupta, 2) Manish Gupta

Year of collaboration: 2020-21

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DOI 10.4103/Jomfp.Jomfp\_481\_20

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Expression of podoplanin in tumor cells and lymphatic vessels in both tumoral and peritumoral areas and correlation with metastatic potential of oral squamous cell carcinoma

Sharma, Geeta³; Kumar, Randhirb; Singh, Harkanwalc ऑ ;
Gupta, Manud; Gupta, Manishc

Save all to author list

<sup>a</sup> Department of Oral Pathology and Microbiology, Sarjug Dental College, Darbhanga, India

<sup>b</sup> Department of Orthodontics and Dentofacial Orthopaedics, Patna Dental College and Hospital, Patna, India

<sup>c</sup> Department of Oral Pathology and Microbiology, Dasmesh Institute of Research and Dental Sciences, Faridkot, Punjab, India

<sup>d</sup> Department of Oral Pathology and Microbiology, Santosh Deemed to Be University, Ghaziabad, Uttar Pradesh, India

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#### Abstract

Author keywords

Sustainable Development Goals 2022

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#### Abstract

Aim: This study aims to study the expression of podoplanin in tumor cells as well as the lymphatic vessels (LVs) in both tumoral and peritumoral areas and correlate the importance of the lymphatic microvascular density (LMVD) in oral squamous cell carcinoma (OSCC) and its metastatic potential. Materials and Methods: D2-40 expression and LV density (LVD) were assessed using antibody D240, in 45 diagnosed cases of all the three grades of OSCC. D2-40 expression was evaluated in both epithelial cells as well as the LVs. Results: D2-40 expression in OSCC showed two different patterns - diffuse and focal. LMVD was calculated and difference in peritumoral and intra tumoral LVs was also assessed. A marked increase was seen we progressed from well-differentiated tumor to poorly differentiated ones, but this difference was found to be statistically nonsignificant. D2-40 immunostaining also highlighted the presence of lymphatic invasion present within the tumors which was detected by the presence of tumor emboli within

Immunohistochemical evaluation of D2-40, galectin-3, maspin and MCM7 expression in palate squamous cell carcinomas

Pătru, A., Şurlin, V., Mărgăritescu, C. (2021) Romanian Journal of Morphology and Embryology

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Role of podoplanin in potentially malignant disorders and oral squamous cell carcinoma and its correlation with lymphangiogenesis

Parhar, S., Kaur, H., Vashist, A. (2015) Indian Journal of Cancer

Expression of podoplanin in oral premalignant and malignant lesions and its potential as a biomarker

Logeswari, J. , Malathi, N. , Thamizhchelvan, H. (2014) Indian Journal of Dental Research

Lymphatic vessels in tumor invasion front of squamous cell carcinoma of the oral tongue

Stîngă, A.S., Stîngă, A.C., Mărgăritescu, C. (2009) Annals of the Romanian Society for Cell Biology

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Find more related documents in Scopus based on:

Authors > Keywords >

Title of the Collaborative activity: Evaluation of cord blood,

Biochemical parameters in new bourns

Name of the collaborator: Department of Biochemistry, K D Medical

College and Hospital and Research Centre Mathura-222143

Name of the participants: Om Prakash Jha

Year of collaboration: 2020-21

#### Letter of Research Collaboration

This is hereby agreed with Santosh University (Ghaziabad) through respective authorized signatories of /K D Medical college Hospital and Research Centre Mathura Collaborates for Research as per following details:

Title of Research: "Evaluation of cord blood biochemical parameters in Newborns"

Name of Primary Researcher: OM PRAKASH JHA

Co-Researcher (if any): -

Research Location: Santosh University (Ghaziabad)/ K D Medical College Hospital and

Research Centre Mathura

Co-guide/Mentor Allocated: Dr. Ajay Das

Designation & Address of Co-guide/Mentor: Associate Professor Dep. of Biochemistry

K D Medical college Hospital and Research Centre Mathura

Duration of Project: from 2017 to 2021

Under this agreement, the two institutions agree to share their infrastructure and resources for the said research work.

Name and Signature of HOD/Principal/Dean-

Santosh University

No.1, Santosh Nagar, Pratap Vihar,

Ghaziabad, Uttar Pradesh 201009

W >

Dr. M. Vasantha

Professor and HOD

Dep. Of Biochemistry K D Medical

College and Hospital and Research

Centre Mathura

Title of the Collaborative activity: Student exchange

Name of the collaborator: Dr. Ram Manohar Lohia Hospital & Atal

Bihari Vajpayee Institute of Medical Sciences, New Delhi

Name of the participants: Sharmeen Hafeez

Year of collaboration: 2020-21

Nature of the activity: Intership



#### भारत सरकार / GOVERNMENT OF INDIA डॉ राम मनोहर लोहिया अस्पताल, अटल बिहारी वाजपयी आयुर्विज्ञान संस्थान, नई दिल्ली DR. RAM MANOHAR LOHIA HOSPITAL,



ATAL BIHARI VAJPAYEE INSTITUTE OF MEDICAL SCIENCES, NEW DELHI - 110001

No. 8-2(2330)/2021/RMLH/H.A.II/Academics/Intern/ 2243

3494 Dated. 11/04/2022



#### INTERNSHIP COMPLETION CERTIFICATE

This is to certify that **Dr. Sharmeen Hafeez**, a student of **Santosh Medical College**, **Ghaziabad**, provisionally Registered with **D.M.C.** vide Registration **No. 27747** did his/her internship from **28.05.2021** to **31.03.2022** in this hospital as per details below:-

S.No.	DEPARTMENT	DAYS	FROM	то
1.	Psychiatry	15	28.05.2021	11.06.2021
2.	Surgery	45	12.06.2021	26.07.2021
3.	Accident & Emergency	15	27.07.2021	10.08.2021
4.	Medicine	45	11.08.2021	24.09.2021
5.	ENT	15	25.09.2021	09.10.2021
6.	Ophthalmology	15	10.10.2021	24.10.2021
7.	Dermatology	15	25.10.2021	08.11.2021
8.	Anaesthesia	15	09.11.2021	23.11.2021
9.	Obst. & Gynae & F.W.P.	60	24.11.2021	22.01.2022
10.	Community Medicine	64	23.01.2022	27.03.2022
11.	Pediatric	04	28.03.2022	31.03.2022

wis/Her work & conduct during this period was satisfactory.

Signature of Candidate

Signature of Officer I/C (Academics)

Addl. Medical Superintendent

SITE विकित्स अधिकता Addi. Medical Superintendent एक्टेजेक्क्रिकाटर एवं डी. जमले. अलक्क, नर्ज दिलो - व A.B.V.I.M.S. & Dr. R.M.L. Heaptiol, New Delta - 01

Title of the Collaborative activity: Student exchange

Name of the collaborator: Sir Ganga Ram Hospital, Rajinder Nagar,

New Delhi

Name of the participants: Simran Mehta

Year of collaboration: 2020-21

Nature of the activity: Intership





Ref. SGRH/ Acad-1,213

15-Feb-2022

# INTERNSHIP COMPLETION CERTIFICATE

This is to certify that **Simran Mehta** of Santosh Medical College, Ghaziabad Uttar Pradesh, did Urban Rotatory Internship Training in our hospital from 01-Jun-2021 to 31-Jan-2022. During the above training period, Intern was assigned the following departments:



Department	From Date	To Date
Medicine 7	01-Jun-2021	15-Jul-2021 5
Psychiatry 9	16-Jul-2021	31-Jul-2021)
Pediatrics	01-Aug-2021	31-Aug-2021
Surgery ()	01-Sep-2021	15-Oct-2021 \ 7
Anesthesia )	16-Oct-2021	31-Oct-2021
Obst. & Gyne + Family Planing	01-Nov-2021	31-Dec-2021 V
Orthopaedics+PMR	01-Jan-2022	31-Jan-2022 <sup>1</sup>

During the above period, intern's work and conduct has been found good.

This hospital is recognised by the Medical Council of India for Internship Training.

0

Dean/ Sub-Dean GRIPMER Sir Ganga Ram Hospital New Delhi Prof. (Dr.) V.K. Maiik
Sub Dean, GRIPMER
(The Ganga Ram Institute for
Postgraduate Medical Education & Research)
Sir Ganga Ram Hospital
New Delhi-110 060.



Title of the Collaborative activity: Student exchange

Name of the collaborator: Sardar Vallabhbhai Patel Hospital, Satna,

Madhya Pradesh

Name of the participants: Ishaan Gupta

Year of collaboration: 2020-21

Nature of the activity: Intership

### कार्यालय सिविल सर्जन सह मुख्य अस्पताल अधीक्षक, सरदार बल्लम भाई पटेल जिला चिकि0सतना म.प्र.

कगांक / स्था विज्ञप्त / 2020

सतना दिनांक...

#### आदेश

डा0 इशान गुप्ता इंटर्नी के आवेदानुसार उन्हें जिला चिकित्सालय सतना में उपस्थिति दिनांक 16.04.2020 से एक वर्ष के इन्टर्निशप संचालनालय खास्थ्य सेवाएँ म0प्र गोपाल के आदेश क्रमांक/4/प्रशि0/2018/27 दिनांक 22.01.18 के पालन में निम्नलिखित रूप से दर्शाये अनुसार इन्टर्निशिप करने की अनुमति प्रदान की जाती है।

इन्टर्निशिप के दौरान विभिन्न विधाओं के विभागों के तहते की जाने वाली इन्टर्निशिप की अवधि , उनके आवरण एवं व्यवहार, इमरजेन्सी ड्युटी तथा फील्ड विजिट आदि के आधार पर मूल्यांकन किया जायेगा, जिसका विवरण निम्नानुसार है—

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	आर्थनानिजी 🐠	16.04.20 से 30.04.2020	15 दिवस
2	रहिया डायमनोसिस क्रिकेट	01.05.20 H 15.05.2020	15 दिवस
3	अस्थि सेम विभाग 🛇 🗸	16.05.20 🕀 14.06.2020	०१ पार
4	जनरल मेडिसिन विमाम 🛮 🗗	15.06.20 🕅 14.08.2020	02 118
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7	इ.एन.टी विभाग _ Ста	15.11.20 से 30.11.2020	15 दिवस
8	बाल्य एवं शिशु रोग विभाग 🛮 🖒	01.12.20 से 31.12.2020	1 माह
9	कंजुल्टी/इमरजेंसी ८६०%	01.01.21 से 31.01.2021	1 माह
10	डायलिसिस विभाग अप्यूक्त	01.02.21 से 15.02.2021	15 दिवस
11	कायुनिटी मेडिसिन (ए)	16.02.21 से 15.04.2021	02 1118

शिविल सर्जन सह मुख्य अस्पताल अधीक्षक जिला विकित्सालय सतना म.प्र. सतना दिनाक. 21.5-20%

कमाक / स्था विज्ञप्त / 2020 *| 608-02 9* प्रतिसिधि

ा प्रिसिपल, संतोष मेडिकल कॉलेज गाजीगाबाद(उ.प्र.)।

2. आर0एम0ओ / प्रशासक जिला चिकित्सालय सतना की ओर सूचनार्थ।

 सगस्त विभाग प्रभारी जिला चिकित्सालय सतना को निर्देशित किया जाता है कि संबंधित इंटर्नी को प्रशिक्षण उपरांत एन.ओ.सी. प्रदान करें।

4. 🚜 इशान गुप्ता इन्टर्नी की ओर सूचनार्थ एवं पालनार्थ।

सिविल सर्जन सह गुख्य अस्पताल अधीक्षक भिज्ञला चिकित्सालय रातना मप्र

Title of the Collaborative activity: Student exchange

Name of the collaborator: Sir Ganga Ram Hospital, Rajinder Nagar,

New Delhi

Name of the participants: Mohini Chauhan

Year of collaboration: 2020-21

Nature of the activity: Intership



Sir Ganga Ram Hospital



Ref. SGRH/ Acad-1,212

31-Mar-2022

# INTERNSHIP COMPLETION CERTIFICATE

This is to certify that Mohini Chauhan of Santosh Medical College, Ghaziabad Uttar Pradesh, did Urban Rotatory Internship Training in our hospital from 01-Jun-2021 to 31-Mar-2022. During the above training period, Intern was assigned the following departments:

Department	From Date	To Date
Medicine ()	01-Jun-2021	15-Jul-2021
Psychiatry	16-Jul-2021	31-Jul-2021
Pediatrics	01-Aug-2021	31-Aug-2021 3
Surgery	01-Sep-2021	15-Oct-2021
Anesthesia	16-Oct-2021	31-Oct-2021
Obst. & Gyne + Family Planing	01-Nov-2021	31-Dec-2021 S
Orthopaedics+PMR	01-Jan-2022	30-Jan-2022 \
ENT	31-Jan-2022	14-Feb-2022
Ophthalmology	15-Feb-2022	01-Mar-2022 8
Casualty	02-Mar-2022	16-Mar-2022
Dermatology	17-Mar-2022	31-Mar-2022

ing the above period, intern's work and conduct has been found good.

3 hospital is recognised by the Medical Council of India for Internship Training.

Dean/ Sub-Dean GRIPMER Sir Ganga Ram Hospital

New Delhi

Prof. (Dr.) V.K. Malik Sub Dean, GRIPMER
(The Ganga Rem Institute for
Postgraduate Medical Education & Research)
Sir Ganga Ram Hospital
New Delhi-110 060.

Sir Ganga Ram Hospital Marg, Rajinder Nagar, New Delhi 110060, INDIA Phones: +91-11-25750000, 42254000 Fax: +91-11-25861002 Email: gangaram@sgrh.com Website: www.sgrh.com

Title of the Collaborative activity: Student exchange

Name of the collaborator: Shri Shiv Prasad Gupt Govt Divisional

District Hospital, Kabirchaura, Varanasi

Name of the participants: Priyanka Gupta

Year of collaboration: 2020-21

Nature of the activity: Intership

0

OFFICE OF THE DIVISIONAL ADDITIONAL DIRECTOR/SUPERINDTENDENT-IN-CHIEF

#### SHRI SHIV PRASAD GUPT DIVISIONAL DISTRICT HOSPITAL VARANASI

### Internship Completion Certificate

Certificate No.: H-2/2022-23/79

Date: -/ 2 /14 /2022

This is to certify that PRIYANKA GUPTA D/o MR. ARUN KUMAR GUPTA has passed M.B.B.S final examination from SANTOSH MEDICAL COLLEGE, GHAZIABAD. She has completed her compulsory rotatory internship Training from Dt. 24-04-2021 to 31-03-2022 by S.S.P.G. Govt. Divisional District Hospital, Kabirchaura, Varanasi. Training schedule was as Follows-

S.NO.	Department	Place	Period
01.	Casualty	SSPG D. District Hospital Varanasi	24-04-2021 to 08-05-2021
02.	Elective Posting (Dermatology)	SSPG D. District Hospital Varanasi	09-05-2021 to 23-05-2021
03.	Ophthalmology	SSPG D. District Hospital Varanasi	24-05-2021 to 08-06-2021
04.	E.N.T	SSPG D. District Hospital Varanasi	09-06-2021 to 23-06-2021
05.	Medicine(With Psychiatry)	SSPG D. District Hospital Varanasi	24-06-2021 to 23-08-2021
06.	Community Medicine	P.H.C Kashi Vidhyapith, Varenasi	24-08-2021 to 23-10-2021
07.	Surgery (With Anesthesia)	SSPG D. District Hospital Varanasi	24-10-2021 to 23-12-2021
08.	Orthopedics Including PMR	SSPG D. District Hospital Varanasi	24-12-2021 to 23-01-2022
09.	Pediatrics	SSPG D. District Hospital Varanasi	24-01-2022 to 22-02-2022
10.	Obs. & Gynaecology (With F.W.P)	Govt. Women District Hospital Varanasi	23-02-2022 to 31-03-2022

She has attended training & duties very sincerely. Her work and conduct have been found good during the period at Dt. 24-04-2020 to 31-03-2022.

I wish her a bright Career.

Divisional Additional Director/
Superintendent in Chief
S.S.P.G. Divisional District Hospital,
S.S.P.G. Div. Distt. Hospital

Varanasi

S. No: 79

Title of the Collaborative activity: Student exchange

Name of the collaborator: Deen Dayal Upadhyay Hospital, New Delhi

Name of the participants: Aishwarya Mittal

Year of collaboration: 2020-21



# Government of N.C.T. of Delhi



OFFICE OF THE MEDICAL DIRECTOR DEEN DAYAL UPADHYAY HOSPITAL HARI NAGAR, NEW DELHI – 1100 64

No.F.2J(1385)/Intern/DDUH/2021 19628

Dated: 06-5-2022

#### INTERNSHIP COMPLETION CERTIFICATE

This is to certify that Dr. Aishwarya Mittal who passed MBBS from Santosh Medical College, Ghaziabad, Santosh University in 2021 has done his/her Partial Compulsory Rotatory Internship Training (Unpaid), in the following departments from 27.05.2021 to 09.02.2022, on the basis of his/her provisional registration with Delhi Medical Council vide Certificate/receipt No. 27056 dated 27th April 2021 as mentioned below:

S.No.	Name of Department	From	To
1.	Pediatrics	27.05.2021	26.06.2021
2.	Orthopedics	27.06.2021	27.07.2021
3.	Ophthalmology	28.07.2021	11.08.2021
4.	Anesthesia	12.08.2021	26.08.2021
5.	Obs&Gynae	27.08.2021	26.10.2021
6.	Elective (Forensic Medicine)	27.10.2021	10.11.2021
7.	General Surgery	11.11.2021	26.12.2021
8.	ENT	27.12.2021	10.01.2022
9.	Casualty	11.01.2022	25.01.2022
10.	Psychiatry	26.01:2022	09.02.2022

During this period, his/her work & conduct has been very good.

This Hospital is recognized by the Medical Council of India for (Unpaid) Internship Training.

MEDICAL SUPERINTENDENT / HOD (INTERN)

DOU Head of Dept. Surgery
DOU Head tol. Govt. of NCT of Delt
Mari Names Asses Belle 110921

Title of the Collaborative activity: Student exchange

Name of the collaborator: Distt. Civil Hospital, Ambala City, Haryana

Name of the participants: Arunima Gupta

Year of collaboration: 2020-21

Nature of the activity: Intership

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Title of the Collaborative activity: A Morphometric Study of Sacral

Hiatus on Dry Human Sacrum for Caudal Epidural Block

Name of the collaborator: 1. Dr Manu Gupta-Assistant Professor,

Department of Anatomy, Saraswathi Institute of Medical Sciences,

Hapur, Uttar Pradesh, India

Name of the participants: Nisha Kaul, Manu Gupta & Renu Mishra.

Year of collaboration: 2020-21

#### Original Research Paper





# "A MORPHOMETRIC STUDY OF SACRAL HIATUS ON DRY HUMAN SACRUM FOR CAUDAL EPIDURAL BLOCK"

Dr Nisha V Kaul

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Dr Manu Gupta.\*

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ABSTRACT
Sacral hiatus (SH) is an inverted arched shaped opening on the dorsal wall of sacrum, which is formed by incomplete midline fusion of the laminae of the fifth or sometimes the fourth sacral vertebrae. For the successful caudal epidural block (CEB) accurate placement of needle into the epidural space through the sacral hiatus is required in different clinical conditions. Among the observed cases the most commonly encountered shape of sacral hiatus is inverted 'U' in 36% cases. In 2 sacra there was complete agenesis of the dorsal wall of sacral canal. Knowledge of these variations are clinically very important for the successful application of CEB.

The level of apex of the sacral hiatus showed considerable variations ranging from S2 to S5 but its commonest position was against S4 (58%). Base of the sacral hiatus was present most commonly at the level of S5 vertebrae (67.34%), in the plane of  $\cos \cos \sin (30.61\%)$  and rarely it is present at the level of 4th Sacral vertebrae.

The mean height, width and depth of sacral hiatus at the apex were 25.19 mm, 15.62 mm and 6.21 mm respectively. The mean distance between the two points on lateral sacral crests at the level of first sacral foramina (base of triangle) was 62.52 mm. The average distances of those two points on right and left lateral sacral crests from the apex of the sacral hiatus were 63.8mm and 63.2 mm respectively. A complete equilateral triangle is demonstrated in 16 cases by union of right and left sacral crests with apex of hiatus 34.04 %. An isosceles triangle was observed in 26 cases 55.31% and a scalene triangle was present in 5 cases 10.63%.

The mean distance from the apex of sacral hiatus to the level of S2 foramina was 40.73 mm and the mean distance from the base of sacral hiatus to the level of S2 foramina (mean distance from the apex of sacral hiatus to the level of S2 foramina + height of sacral hiatus) was 65.92 mm.

#### **KEYWORDS:**

#### INTRODUCTION

Caudal epidural block is considered a very safe method for anaesthesia and analgesia below umbilicus in young ages as well as in urgent procedures like incarcerated hernia, perineal procedures, lower limb surgeries and in superficial operations such as skin grafting. CEB is utilized for administration of epidural anaesthesia in orthopaedics for diagnosis and treatment of various diseases, in obstetrics for painless delivery and for treating patients with low back pain, but sometimes it is difficult to determine the anatomical location of the sacral hiatus and the caudal epidural space. In the caudal epidural block (CEB) the injection of anaesthetic medicine is administered into the epidural space through the sacral hiatus for different clinical conditions.1 For the successful caudal epidural block (CEB) accurate placement of needle into the epidural space after penetrating the sacrococcygeal ligament is required. Anatomical variations of the sacrum and abnormalities of the sacral hiatus are challenges during caudal injections making it difficult to locate the sacral hiatus may lead to the failure of caudal epidural block.2

The Sacrum is a large triangular bone forms the posterior superior wall of the pelvic cavity. On the dorsal surface of the sacrum in the median plane, there is a raised median sacral crest with 4 or sometimes 3 tubercles which represent the fused sacral spines. Lateral to median sacral crest there are two intermediate sacral crests on its either sides formed by fusion of articular facets of sacral vertebrae.  $^4$ 

Sacral hiatus (SH) is an inverted arched shaped opening on the dorsal wall of sacrum, below the fourth or the third tubercle. It is usually an inverted 'V' or inverted 'U' shaped space located at the distal part of the sacrum which is formed by incomplete midline fusion of the laminae of the fifth or sometimes the fourth sacral vertebrae and even if the laminae

of the higher sacral vertebrae are not fused than hiatus will be seen at a higher level. Sometimes non fusion of all the five laminae of sacral vertebrae occurs which represents as a midline gap dorsally, such clinical condition known as spina bifida.  $^5$ 

Sacral hiatus is covered by a superficial posterior sacrococcygeal ligament and is an important landmark in CEB. The lower sacral nerve roots, coccygeal nerve roots, filum terminale and fibrofatty tissue are the contents of SH.<sup>3</sup>

**Prevalence--** Nadeem (2014) in his study observed different shapes of sacral hiatus which includes- Inverted U (56%), Inverted V (14%), Irregular (16%), Dumb-bell (10%), Bifid (2%) and Elongated (2%). Nagar (2004) observed various shapes of sacral hiatus out of which in 4 sacra (1.5%) – complete agenesis of the dorsal wall of sacral canal, inverted U (41.5%), inverted V (27%), irregular (14.1%), dumbbell (13.3%) and bifid  $(1.5\%)^7$ 

Landmarks for locating sacral hiatus- Sacral hiatus is identified on the surface by a point about 2 inches above the tip of coccyx under the skin covering the natal cleft (Waldman  $2004^{19}$ ).

Superficial posterior sacrococcygeal ligament- It can also marked by palpation of the sacral cornua keeping the patient in the lateral position or lying prone over a pelvic pillow. 8.9

Sacral cornua are the remnants of inferior articular process of fifth sacral vertebra projects downward on both sides of sacral hiatus. It is very important landmark to locate the sacral hiatus during caudal epidural anaesthesia. On the body surface the hiatus can be marked two inches above the tip of coccyx beneath the skin of natal cleft. 10,11

Title of the Collaborative activity: Quality Control in E-learning for

**Medical Education** 

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Name of the participants: Singh, Vishram; Reddy, Krishna Chaitanya;

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Year of collaboration: 2020-21

#### Editorial



#### **Quality Control in E-learning for Medical Education**

E-learning has been a part of the education system for a long time. Massive open online courses with dedicated curriculum and learning modules have been quite effective and gained a lot of traction in various streams of education by giving flexibility of time and finances to learners and students. COVID-19 has changed the scenario drastically and brought mainstream medical education into the foray of e-learning, although the technology was being used in the form of offline e-learning (popular among medical students by way of sharing PDFs, learning resources, and so on) and online e-learning (popular for continuing professional development programs). There is a sudden need to teach undergraduate medical students remotely using various online platforms such as Zoom, WebEx, Google Meet, and Microsoft Teams. The usage of novel technology to enhance medical education has come to the forefront.[1] The quality of teaching and content needs to be much higher in online teaching when compared to that of face-to-face teaching, considering students are not in a controlled environment. This realm of teaching requires faculty to be more creative in maintaining and engaging students' interest in the subject and the concept of learning. The success of e-learning depends on it being "brain friendly", on engaging the learners from an understanding of how the cognitive system works.<sup>[2]</sup> To maintain this quality, one has to consider the following factors:

- Need for medical colleges to provide technology that enables the faculty to maintain the standards of teaching
- Sensitization of faculty and students toward the usage of the software (various platforms, learning management system [LMS]) which the college has provided
- Content of the lectures has to be created keeping in mind that we are not teaching in a physical classroom
- Content should help promote interactions among faculty and students (student engagement)
- Constant evaluation and assessment need to be done to positively impact and improve the ongoing classes
- Students should be provided access to digital library remotely and other e-resource material by way of LMS.

The focus should be on the curriculum design and planning of the teaching sessions rather than on the technologies themselves.<sup>[3]</sup> Adapting the principles of Kern's model of curriculum design for medical education toward the e-learning that we are employing could help yield more productive outcomes.<sup>[4]</sup> The six steps Kern's model are as follows:

# Step 1: Problem Identification and General Needs Assessment

Identifying and categorizing competencies into higher-level and lower-level knowledge domains.

Lower-level knowledge domain competencies could be taught using flipped classroom model by providing relevant study material pre-session instead of didactic mode (This is just an example to initiate other modes of teaching methods among both students and faculty). This increases student engagement and also will inculcate the concept of self-directed learning in students. This model also motivates students to spend more time in acquiring knowledge outside of a formal class.<sup>[5]</sup>

#### **Step 2: Targeted Needs Assessment**

Identifying students' baseline knowledge will optimize the design, planning, and delivery of the lectures. This step will help us in including all levels of learners, and slow learners would not feel left out. This could be done by taking presession polls and surveys. This also shifts onus onto students, as they identify their own levels.

#### Step 3: Goals and Objectives

End of session goals should be crisp and clear so that students follow the flow of the lecture.

#### **Step 4: Educational Strategies**

Extrapolating from Step 1, students should be encouraged to speak up during the session, this could be by predeciding the speakers or randomly picking volunteers during the session. Positive reinforcement should be the mantra rather than negative reinforcement. Breakout room sessions followed by plenary could also be employed in short bursts for discussions to improve student engagement.

#### **Step 5: Implementation**

Instead of only an audio lecture, mitigating it with video of the faculty by switching on the web camera would give a sense of connection to the students. Pausing in between the lecture and giving students time to post doubts through audio or chat box will keep them engaged and breaks the monotony of the lecture.

#### Step 6: Assessment, Evaluation, and Feedback

Assessment of students can be done using polling and quiz features which are inbuilt in the conferencing platform itself. Evaluation and feedback forms may be designed using Google Forms and sent to students to evaluate the effectiveness of the session also get feedback from students which forms a base to improve the quality of the lectures. The forms should be designed to be anonymous to encourage constructive criticism.

The six steps listed above are nonlinear and interdependent, principles of each step are dependent on one another to

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Title of the Collaborative activity: An intervention-based study to

assess the acceptability and effectiveness of a breast health awareness

program among rural women of Southern Haryana, India

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Abhishek Singh, Vikas Gupta, Deepika Agrawal, Virender Kumar Chhoker

Year of collaboration: 2020-21

#### **Original Article**



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# An intervention-based study to assess the acceptability and effectiveness of a breast health awareness program among rural women of Southern Haryana, India

Avinash Surana, Rakesh Tank<sup>1</sup>, D. R. Rajesh<sup>2</sup>, Abhishek Singh<sup>3</sup>, Vikas Gupta<sup>4</sup>, Deepika Agrawal<sup>5</sup>, Virender Kumar Chhoker<sup>6</sup>

#### **Abstract:**

**INTRODUCTION:** Breast cancer is among the most prevalent cancers in India and improving breast cancer awareness among women has shown to overcome the barriers related to diagnosis and treatment. Although breast self-examination (BSE) being quite easy and fast procedure, it a matter of debate that in limited-resource settings, it could be implemented or not, and hence, the present study was conducted to assess the acceptability and effectiveness of a breast health awareness program among rural women.

**METHODS:** The present prospective interventional study was conducted for a duration of 12 months among 270 rural women in the age group of 30–59 years. A pretested questionnaire was used to collect data. The activity of the study was divided into three parts, i.e., pretest, intervention and posttest. McNemar's Chi-square was used to examine the association between each dependent variable at pretest and posttest and an association was statistically significant if the P < 0.05.

**RESULTS:** Only 17.2% were aware of BSE and among them, not even single has ever practiced BSE. The pretest and posttest median awareness scores were 3 and 5, respectively, whereas the mean awareness score pretest and posttest were  $2.76 \pm 1.525$  and  $5.07 \pm 1.598$ , respectively. Awareness regarding risk factors for breast cancer before training (11.1%) was increased significantly after training (35.2%) but to a little extent only (P < 0.001).

**CONCLUSION:** The present study highlights the levels of baseline awareness of breast cancer in rural women, which is unacceptably low, but educational intervention by field health workers having significantly improved their level of awareness, including the BSE practices. The study also found various barriers for not performing BSE among participants.

#### **Keywords:**

Awareness, barrier, breast self-examination, effectiveness, rural, women

#### Introduction

The breast cancer and its treatment, which is documented in historic literature and in the present world breast cancer, comprised 25% of all cancers (1.67 million new cases) as per GLOBOCAN 2012.<sup>[1-3]</sup> In

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India, breast cancer is most prevalent among cancers, and annually, there is an estimated occurrence of around 80,000 cases and compared to cervical cancer, its mortality rates are still higher. It is expected that the number of new cases of cancer would increase from 10 million/year in 2000 to 15 million/year in 2020. In various studies,

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Title of the Collaborative activity: Magnitude and causes of routine

immunization disruptions during COVID-19 pandemic developing

countries

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Lokesh; Dwiwedi, Manish K; Agarwal, Deepika; Gupta, Gajendra K;

Dhiman, Ranjit

Year of collaboration: 2020-21

#### **Review Article**

# Magnitude and causes of routine immunization disruptions during COVID-19 pandemic in developing countries

Mohit Sharma<sup>1</sup>, Snehil K. Singh<sup>2</sup>, Lokesh Sharma<sup>3</sup>, Manish K. Dwiwedi<sup>3</sup>, Deepika Agarwal<sup>4</sup>, Gajendra K. Gupta<sup>4</sup>, Ranjit Dhiman<sup>5</sup>

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#### **ABSTRACT**

The ongoing pandemic of COVID-19 is a threat to various routine healthcare services. India's routine immunization (RI) campaign is one of largest ever known. In this review, we discuss the magnitude of disruption of RI activities due to COVID-19 pandemic, various causes of it and recommend ways to reduce the disruptions. Prominent literature databases were searched till April 30, 2021 for articles reporting disruptions of RI due to COVID-19. One study from India and numerous from outside India reported significant declines in the vaccine coverage rates during the lockdown period, which ranged from March 2020 till August 2020 in different regions of the world. Some reported disruptions for all vaccines, while a few reported sparing of birth doses. Shortage of healthcare workers due for them being diverted to patient care services and their reduced movement due to lockdowns and non-availability of public transport were prominent causes. Parents avoided RI sessions as they feared them or their children getting infected. They also faced travel restrictions, just like the healthcare workers. Children of school entry age and those from poorer socio-demographic profile appeared to miss the doses more frequently. Ministry of Health and Family Welfare, India has issued guidelines for conducting fixed and outreach RI sessions while following COVID-appropriate behavior. Promptly identifying missed out children and scheduling catch-up sessions is required to sustain the gains made over the decades by the immunization program of India.

Keywords: COVID-19 pandemic, developing countries, routine immunization, vaccine policy, vaccine-preventable diseases

#### Introduction

India's path towards achieving Sustainable Development Goals (SDG) would include reduction in the incidence of various vaccine preventable diseases (VPDs).<sup>[1]</sup> Universal Immunization Program of India, one of the largest public

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health programs in the world, provides free vaccination against 12 VPDs, 11 nationally [Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B and Meningitis and Pneumonia caused by Hemophilus Influenza type B, Rota Virus Diarrhea, Pneumonia (PCV under expansion)] and one sub-nationally [Japanese Encephalitis- for endemic areas). As one of the most effective public health interventions, every US\$1 spent on immunization returned US\$ 26 from savings on healthcare costs and expenses from illness.<sup>[2]</sup>

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**Title of the Collaborative activity:** Prevalence of MRSA and

antimicrobial susceptibility Staphylococcus aureus in clinical samples in

national capital region, India

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Kumar Gupta, Vashishth Mishra and Gaurav Gupta

Year of collaboration: 2020-21



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NLM ID: 101631759)

# Prevalence of MRSA and Antimicrobial Susceptibility *Staphylococcus aureus* in Clinical Samples in National Capital Region, India

Pradeep Kumar <sup>a\*</sup>, Geeta Gupta <sup>a</sup>, Gajendra Kumar Gupta <sup>b</sup>, Vashishth Mishra <sup>c</sup> and Gaurav Gupta <sup>d</sup>

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#### Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Original Research Article

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#### **ABSTRACT**

**Background:** Infections caused by Staphylococci are frequently linked to indwelling medical equipment. These are extremely difficult to treat with antibiotics. In India, the prevalence of Methicillin-Resistant *Staphylococcus aureus* (MRSA) varies from 30 to 70%, resulting in high mortality, increased economic burden, and high treatment failure in tertiary care hospitals. Rapid and reliable identification of MRSA is critical for infection management and avoiding the needless use of antibiotics.

Materials and Methods: This prospective study was carried out in the Department of Microbiology, Santosh Medical College, Ghaziabad, from the 1st of August 2020 to the 31st of January 2021. MRSA isolates were screened and confirmed using standard methods recommended by the Clinical and Laboratory Standards Institute (CLSI). Methicillin resistance, in *Staphylococcus aureus* strains, was evaluated using oxacillin/cefoxitin. The Kirby-Bauer disc diffusion technique was used to assess the antibiotic susceptibility pattern of all MRSA strains.

**Results:** In this investigation, MRSA was identified in 29.4% of the 384 *Staphylococcus aureus* strains. When compared to females, men outnumbered females. Cefoxitin detects a greater

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Title of the Collaborative activity: Dietary habits and their impact on

the physical status of school-going adolescents in Delhi. A cross-

sectional study

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Kumar Gupta, Deepika Agrawal, Ravi Kant Arya, Jyoti Batra

Year of collaboration: 2020-21

# Dietary Habits and their Impact on the Physical Status of School Going Adolescents in Delhi: A Cross-sectional Study

MAUMITA KANJILAL¹, <mark>UMA KUMAR²</mark>, GAJENDRA KUMAR GUPTA³, DEEPIKA AGRAWAL⁴, RAVI KANT ARYA⁵, JYOTI BATRA<sup>6</sup>



#### **ABSTRACT**

**Introduction:** The dietary habits and food preferences in the adolescent age group can influence their physical growth. The importance of healthy eating habits cannot be ignored. Faulty eating habits among adolescents contribute towards undernutrition, overnutrition and micronutrient deficiency.

**Aim:** To evaluate the dietary habits and nutritional status of school-going, urban adolescents.

Materials and Methods: A questionnaire based cross-sectional observational study was conducted among 1600 adolescents from 10 government schools in Delhi between April 2018 and March 2019. The socio-demographic profile, anthropometric measurements and dietary habits using simplified dietary gap assessment tool was recorded. The nutritional status of the participants was categorised as per World Health Organisation-Body Mass Index (WHO-BMI) Z-score for adolescents. The data collected was analysed using the statistical analysis software Graph Pad version 5. Chi-square test was applied to assess the association between dietary habits and BMI status.

**Results:** A total of 855 males (mean age 13±2 years) and 745 females (mean age 13.4±2 years) with age range between 10 and

19 years participated in the study. A total of 955 (59%) adolescents consumed milk or milk products, 655 (41%) consumed fruits, and 838 (52%) consumed green leafy vegetables in their daily dietary habits along with their staple diets. 1089 (68%) of adolescents were undernourished, out of which 328 (30%) skipped their regular meals. The Chi-square analysis revealed that consuming junk food (p=0.005) and buying eatables from street shops (p=0.0025) were significantly associated in adoloscents from the age group of 15-19 years. It was observed that male participants consumed milk and milk products more often than female participants (p<0.0001). Faulty dietary habits of skipping meals or eating junk food or buying eatables from street shop was associated with more number of participants under the obese/ overweight category (p<0.0001).

**Conclusion:** The poor choice of dietary habits significantly affects the physical development among school-going adolescents. Study participants who belonged to the late adolescent age group had more tendencies to develop faulty dietary habits. The study will help to plan for nutritional supplementation and create awareness to develop healthy food choices among adolescents.

Keywords: Body mass index, Food preferences, Junk food, Undernutrition

#### **INTRODUCTION**

The WHO defines the individuals in the age group between 10 to 19 years as adolescents. Adolescents undergo several physical, emotional, cognitive and social changes which bring anticipation and anxiety [1]. These changes also contribute towards faulty dietary habits emphasising the role of parents in promoting healthy eating behaviour among adolescents [2].

The dietary habits of adolescents are important factors to understand their present and future health. High consumption of nutrient-poor dietary items and inadequate consumption of protein and vitamin-rich diet can contribute to various health problems like malnourishment, metabolic disorders and obesity [3,4]. In one of the prospective cohort studies, poor breakfast habits were the predictors of obesity in adulthood [5]. Consumption of energy dense snacks was most common among Indian adolescents [6].

Due to the rapid urbanisation, there is a change in dietary pattern which contributes to chronic diseases and obesity in the urban areas [7]. The habit of skipping meals and preference for eating junk food is present among the dietary behaviour of adolescents [8]. There also exist gender differences in food preferences and dietary habits among early and late adolescents age groups [9]. In one of the prospective cohort studies with a follow-up period of 27 years, it was predicted that irregular eating habits at the age of 16 years had a higher prevalence of metabolic syndrome at 43 years [5]. It was found, in another longitudinal study that if early intervention of

adolescent health behaviour is tracked then healthy eating habits can be inculcated in the food preferences of adolescents [10]. The intervention to promote healthy eating habits through a nutrition education program was found effective in motivating adolescents to make healthy food choices [11].

In one of the studies conducted in northern India, the burden of undernutrition and overnutrition was found among the rural and urban population of adolescent girls [12]. The consumption of fast food and food items rich in sugar/fat/salt content is found to be high among the adolescents [8].

Among urban adolescents in India, some dietary patterns and preferences are likely to be similar but little information is available about the school going adolescents studying in the government schools of Delhi. The current study was designed to evaluate the nutritional status of adolescents and assess their dietary patterns. This study will help to design intervention strategies to improve nutritional status and dietary habits among adolescents.

#### **MATERIALS AND METHODS**

A questionnaire based cross-sectional, observational study was conducted in 10 government co-educational schools of the South Delhi area between April 2018 to March 2019. The study was approved by the Institutional Ethics Committee (IEC/555/9/dated 22/11/2017) and the Directorate of Education, Government of Delhi (No. HQ Br./2018/Project/22 dated 09/04/2018).

Title of the Collaborative activity: A comprehensive study on

insecticide poisoning patients brought to a tertiary government hospital

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Year of collaboration: 2020-21

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# A comprehensive study on insecticide poisoning patients brough a tertiary government hospital in north eastern region of India

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Online Published on 04 March, 2022.

# Abstract

The commonest cause of poisoning in India and other developing countries are insecticide and pesticide, which are agriculture economics, poverty and easy availability. This study collected gastric lavage from all suspected and confirmed insecticide pois cases brought to the hospital. They are being analysed by the thin-layer chromatography method for the detection of the type insecticide. This is a cross-sectional study, and statistical analysis is done by correlation and regression analysis method. Tota cases of insecticide poisoning were brought to the emergency services of a Government Hospital at Agartala, Tripura, during t January 2013 to June 2014, out of which 79.1% were within the age group of 21 years to 40 years, 78.6% of the victims are m of the victims were farmers, 98% of the times the mode of poisoning were suicidal, 74% of the cases the insecticide involved v organophosphorus group of poison (OP), while 19% of the cases were Organochlorine group of poisons (OC), and only 7% of were Carbamate group of poison (CAR). Due to undue pressure for performance and good lifestyle and failure to comply, the productive age group tends to take such irreversible steps of committing suicide using easily available material. The need of the a very restricted supply of insecticides with proper documentation and proper counselling sessions for survivors of such incide

# **Keywords**

Insecticide poisoning, Organophosphorus poisoning, Suicide

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Title of the Collaborative activity: Totally Implantable Venous Access

Device (Chemoport) in Oncology: Study of 168 Polyurethane Chemoport

Catheter System

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Name of the participants: Gyanendra Swaroop Mittal

Year of collaboration: 2020-21

# Totally Implantable Venous Access Device (Chemoport) in Oncology: Study of 168 Polyurethane Chemoport Catheter System

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South Asian J Cancer 2021;10:261-264.

# Abstract



Gyanendra Swaroop Mittal

# Keywords

- TIVAD
- polyurethane
- chemoport

**Background** Chemoport (totally implantable venous access device) and its catheter system are used to administer long-term chemotherapy in cancer patients. The objective of this study was to analyze the complications associated with chemoport insertion in various cancer patients.

Material and Methods A total number of 168 chemoports along with polyurethane catheters were inserted in various cancer patients over a period of 3 years. 9.6 F polyurethane catheters were put by a team of surgical oncologists in operation theater under general or local anesthesia. Analysis of the complications was done until the chemoport was removed due to any reason.

**Results** Out of 168 patients, 30 (17.85%) developed complications. Complications included arterial puncture, malposition of the catheter tip, pneumothorax, hematoma, seroma, deep vein thrombosis, fracture of the catheter, a reversal of port, infections, and thrombosis of the catheter. Only a few required premature port and catheter removal.

**Conclusion** There was a low rate of complications associated with chemoport using a polyurethane type of catheter system. However, infection-related complications were comparatively more common in our series. Chemoport requires expert handling, patient education, strict follow-up, and dedicated teamwork to minimize complications.

# Introduction

Totally implantable venous access device (TIVAD) or the chemoport was introduced in the year 1982 among patients of cancer for the administration of intravenous (IV) chemotherapy. It was then possible to deliver highly vesicant chemotherapy drugs with minimum morbidity. Other uses of chemoport are the administration of parenteral nutrition, blood products transfusion, antibiotics and IV fluid administration, and repeated venous sampling, thus avoiding

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How to cite this article: Mittal G. S., Sundriyal D., Naik N. B., et al. Totally Implantable Venous Access Device (Chemoport) in Oncology: Study of 168 Polyurethane Chemoport Catheter System. South Asian | Cancer 2021;10(4):261–264. frequent cannulation.<sup>2,3</sup> Chemoport has a long dwell time and thus prone to complications. Minor complications like hematoma, ecchymosis at the puncture site, and inability to withdraw blood occur frequently but these are of lesser clinical significance as they cause minimal morbidity to the patient. Major complications like venous thrombosis, pneumothorax, infection, fracture of the catheter, or malfunction are of major clinical significance, as they may require premature removal of the chemoport.

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Title of the Collaborative activity: Nasal Carriage of Staphylococcus

Aureus in different age groups among healthy school children and its

antimicrobial susceptibility pattern

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Name of the participants: Jagriti Bansal, Dakshina Bisht, Varun Goel

Year of collaboration: 2020-21

Microbiology Section

# Nasal Carriage of Staphylococcus aureus in Different Age Groups among Healthy School Children and its Antimicrobial Susceptibility Pattern

JAGRITI BANSAL<sup>1</sup>, DAKSHINA BISHT<sup>2</sup>, VARUN GOEL<sup>3</sup>



# **ABSTRACT**

**Introduction:** Staphylococcus aureus (S.aureus) is associated with increased risk for acquiring invasive disease. There exists an increasing prevalence of resistant community acquired S.aureus infections due to the nasal colonisation of S.aureus and Methicillin-Resistant S.aureus (MRSA) worldwide.

**Aim:** To evaluate the prevalence rate of *S.aureus* and MRSA nasal colonisation among healthy school children and to determine its antibiotic susceptibility rate of the *S.aureus* isolates.

Materials and Methods: The community based cross-sectional study was conducted among 344 school going children of 5-16 years of age. Samples were obtained from the anterior nares from each child and cultured on Blood Agar (BA) and Mannitol Salt Agar (MSA). Antibiotic susceptibility pattern of *S.aureus* was done by Kirby-Bauer disc diffusion method. MRSA detection was done through Cefoxitin 30 μg discs along with MIC for

Oxacillin and Vancomycin simultaneously according to Clinical Laboratory Standard Institute (CLSI).

**Results:** Of the 344 children, 26 (7.55%) were found to be with nasal carriage for *S.aureus* of which MRSA was found to be in 12 (3.48%) isolates. *S.aureus* isolates exhibited resistance to multiple classes of antibiotics including Penicillin (100%), Cotrimoxazole (50%), Ciprofloxacin (15.4%), Vancomycin (7.7%), Clindamycin (7.7%), Gentamycin (7.7%). No resistance to Linezolid was observed.

**Conclusion:** A relatively high rate of nasal carriage of *S.aureus* in children of age group 5-10 years was observed when compared to children of age group 11-15 years. With the risk involved transmission of infection and resistance to many classes of antibiotics among *S.aureus* strains exists and hence, emphasis needs to be laid to design control measures, continued surveillance and its eradication.

Keywords: Cefoxitin, Community associated-methicillin resistant S.aureus, Nasal colonisation

# INTRODUCTION

S.aureus is a major cause for community as well as nosocomial infections in different countries including India [1,2]. Nasal colonisation by S.aureus is common in children and genetic evidence has supported a causal relationship between nasal carriers of S.aureus and Methicillin Resistant S.aureus (MRSA) and invasive staphylococcal disease. S.aureus can survive in anterior nares for months asymptomatically in different regions of healthy individual [3]. In addition, spreading of S.aureus and MRSA to both community and hospital environments may also be because of children who serve as reservoir [4].

Although the infections were easy to treat earlier even after the development of resistance to penicillin, the problem arises with the emergence of MRSA. There has been an increasing prevalence of MRSA infections in India due to pressure of infections of *S.aureus* increasing [5]. MRSA is considered as a major cause of nosocomial infections and associated with high morbidity and mortality. Earlier MRSA infections were only associated with hospitalised patients known as Hospital-Associated MRSA (HA-MRSA). However, nowa-days it is also spreading among healthy individuals without any contact with healthcare workers, especially in children known as Community-Associated MRSA (CA-MRSA) without conventional risk factors for MRSA [6].

There is need for active surveillance of the organism because of huge disease burden due to increase in CA-MRSA infection. The carrier who is the reservoir of MRSA is asymptomatic, this is of public health importance. To prevent its transmission of MRSA in community and its early detection of the colonisation among children can be done by screening and decolonising the children so that primary care physicians may play a pivotal role [7]. Thus, serious infections caused

by MRSA strains can be prevented by early detection of carriers. To understand the transmission among the healthy individuals as well as the diseased surveillance, it is necessary to evaluate the prevalence of nasal carriage of MRSA in community. Therefore, the present study was done to determine the epidemiology of MRSA in nasal carriage among 344 healthy school children.

# **MATERIALS AND METHODS**

This study was a prospective, cross-sectional and observational study conducted in Department of Microbiology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India from March 2018 to June 2019. Ethical clearance was obtained from the Institutional Review Board of Santosh Medical University. The objectives as well as the nature of the study were explained to the school community for the purpose of their consent.

**Sample size calculation:** Considering prevalence of nasal carriage of MRSA among healthy school children as 27.92% [5] and allowable error of 20%, at level of significance of 95%, the sample size was calculated using the standard formula:

N=4PQ/L<sup>2</sup>,

where N is the sample size to be taken, P is the 27.92%,

Q=1-prevalence, L=Relative allowable error, Type 1 error=5%, Power=80%.

The desirable sample was obtained 344, based on the current population school going children of the age group of 5-15 years and only one school was included in the study.

**Inclusion criteria:** School children of age group of 5-15 years, who were asymptomatic were included in the study.

Title of the Collaborative activity: The Rising threat of drug

resistance Pseudomonase aeruginosa, A nightmare for intensive care

unite patients

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Microbiology, Hind Institute of Medical Sciences, Sitapur, Uttar Pradesh,

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Khatoon, Ritu Jain, Ankita Gupta.

Year of collaboration: 2020-21

# The Rising Threat of Drug Resistant Pseudomonas aeruginosa- A Nightmare for Intensive Care Unit Patients

Microbiology Section

SHIVENDRA DUTT SHUKLA<sup>1</sup>, GEETA GUPTA<sup>2</sup>, RAZIA KHATOON<sup>3</sup>, RITU JAIN<sup>4</sup>, ANKITA GUPTA<sup>5</sup>



# **ABSTRACT**

**Introduction:** Multidrug Resistant (MDR), Extensively Drug Resistant (XDR) and Pan Drug Resistant (PDR) variants manifest a high level of intrinsic resistance to antimicrobial drugs by the help of efflux pump, biofilm formation and aminoglycoside modifying enzymes. The potentiality of *Pseudomonas* spp. to produce variety of drug resistance mechanism has led to evolution of drug resistant phenotypes this poses a challenge for clinicians in the treatment of severe infection among Intensive Care Unit (ICU) patients.

**Aim:** To determine the phenotypic profiling of  $\beta$ -lactamases and burden of MDR, XDR and PDR *Pseudomonas aeruginosa* (*P. aeruginosa*) in ICU patients.

Materials and Methods: The present cross-sectional prospective study was carried in the Department of Microbiology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India, after permission from Institutional Ethics Committee (IEC). A total of 115 isolates of *P. aeruginosa* were isolated from 502 human clinical samples from January 2019 to February 2021 and all the clinical samples were non duplicate. Antimicrobial Susceptibility

Testing (AST) was performed for all isolates by standard Kirby-Bauer disc diffusion method on Mueller Hinton Agar (MHA). Phenotypic profiling of Extended Spectrum  $\beta$ -Lactamase (ESBL), Metallo  $\beta$ -Lactamase (MBL) and Ampicillinase C (AmpC) was performed by disc potentiation test; Imipenemase (IMP) - Ethylenediamine Tetraacetic Acid (EDTA) combined disc test and Cefoxitin Cloxacillin Double Disc Synergy Test (CC-DDST), respectively. The obtained results were statistically analysed in numbers and percentages using MS Excel 2013 version.

**Results:** Out of 502 total human clinical samples, 115 isolates were *P. aeruginosa* giving the prevalence rate of 23%. Among 115 *Pseudomonas* isolates, 60 (52%) were MDR phenotypes, 8 (7%) were XDR phenotypes and there was no PDR phenotypes isolated in present study as all isolates were sensitive to Ticarcillin/Clavulanic acid, Colistin and Polymyxin B. Out of 115 isolates, 59 (51%) were ESBL producers, 26 (23%) were MBL producers, and 6 (5%) were AmpC producers.

**Conclusion:** Strict antibiotic policies and regular surveillance programme of antimicrobial resistance must be tailored to fend off the emergence of drug resistant *Pseudomonas aeruginosa*.

 $\textbf{Keywords:} \ \, \textbf{Extended spectrum } \beta \textbf{-lactamases, Extensively drug, Metallo } \beta \textbf{-lactamases, Multidrug resistant}$ 

# INTRODUCTION

About 50 years ago, P. aeruginosa was rarely considered as an actual pathogen, but in the 1970s it was documented to be the microorganism which was directly correlated with neutropenic host. In the present scenario, it is amongst the most common pathogen responsible for hospital acquired infection. Respiratory instrument, antiseptics, soaps, sinks, mops and hydrotherapy pools are the variety of sources for this pathogen [1]. P. aeruginosa is mainly responsible for nosocomial infection and around 10-20% of nosocomial infection in patients were admitted in the ICUs [2]. This pathogen is categorised into different phenotypic variants which are mainly based on the drug resistance pattern. MDR type is defined as Pseudomonas spp. that are resistant to more than one antimicrobial agent in three or more antimicrobial categories. XDR is defined as all those phenotype which shows resistance to more than one antimicrobial agent in all the antimicrobial categories but remains susceptible to only one or two categories. PDR type is defined as those isolates which show resistance to all antimicrobial agents in all antimicrobial class. XDR is a subgroup of MDR and PDR is subgroup of XDR, these categories of drug resistance phenotypes were according to ECDC (European Centre for Disease Prevention and Control) and CDC (Centers for Disease Control and Prevention) [3].

*P. aeruginosa* is one of the most frequent gram negative non fermentative pathogen in ICU patients causing Urinary Tract Infection (UTI), surgical site infection, and bacteremia but Lower Respiratory Tract Infections (LRTI) is most common and predominating one. MDR, XDR and PDR variants manifest a high level of intrinsic

resistance to antimicrobial drugs by the help of efflux pump, biofilm formation, aminoglycoside modifying enzymes and sometimes by mutation in chromosomal gene (ESBL and AmpC hyper expression) [4]. *Pseudomonas* spp. is also able to obtain the resistance by means of horizontal gene transfer mechanism which is responsible for class B carbapenamase (MBL) [5]. Genes responsible for drug resistance are located on integrons which is frequently located in plasmids or transposons and these genes can shift very often and contributes to the dissemination of resistance mechanism around the world [6,7].

Biofilm is described as "a structural community of bacterial cells bounded in self-founded polymetric matrix adherent to biotic or abiotic surface". Any surface either biotic or abiotic is appropriate for bacterial colonisation and biofilm formation. Phenotypes that are biofilm producers are more drug resistant than biofilm non producers. The ability of microorganism to produce biofilm could be a constructive strategy to intensify its survival and existence under suppressed condition like antibiotic therapy or host invasion [8,9]. The potentiality of *Pseudomonas* spp.to produce variety of drug resistance mechanism has led to evolution of drug resistant phenotypes. This poses as a challenge for our clinician for the treatment of such kind of severe infection. This type of situation draws attention for the detection of phenotypes those are producing different kind of mechanism for the drug resistance to avoid treatment failure and hospital acquired infection [10].

The aim of the present study was to determine the drug resistance pattern in association with phenotypic profiling of  $\beta$ -lactamases and burden of MDR, XDR, and PDR *P. aeruginosa* among ICU patients at a tertiary care hospital of Ghaziabad, Uttar Pradesh, India.

Title of the Collaborative activity: Biofilm Formation and its

Association with Susceptibility Pattern in Methicillin - resistant

Staphylococcus aureus isolates.

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Year of collaboration: 2020-21

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# **RESEARCH ARTICLE**

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# Biofilm Formation and its Association with Antibiotic Susceptibility Pattern in Methicillin-resistant *Staphylococcus aureus* Isolates

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# **Abstract**

Methicillin-resistant *Staphylococcus aureus* is a clinically significant pathogen that causes infections ranging from skin and soft tissue infections to life-threatening sepsis. Biofilm formation by MRSA is one of the crucial virulence factor. Determination of beta-lactamase and biofilm production among *Staphylococcus aureus* was obtained from various clinical specimens. Standard bacteriological procedures were used for isolation and identification and antibiotic sensitivity was determined using the Kirby Bauer disc diffusion method according to CLSI guidelines. The cloverleaf method, acidometric, iodometric and chromogenic methods were used to detect beta-lactamase while the microtiter plate method and Congo red agar method were used to detect biofilm production. Of the 288 MRSA strains isolated from various clinical specimens,198 (67.07%) were biofilm producers. Cloverleaf and chromogenic (nitrocefin) disc shows 100% results for beta-lactamase detection. Vancomycin was 100% sensitive followed by teicoplanin (92.36%) and linezolid (89.93%). Cloverleaf and nitrocefin disc methods were the most sensitive for detection of beta-lactamase in *S. aureus* and there was no significant relation between biofilm production and antibiotic sensitivity pattern of *S. aureus*.

Keywords: Beta-lactamase, Biofilm, MRSA, Antibiotic susceptibility testing

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Title of the Collaborative activity: Assessment of the outcome of

fracture intertrochanteric femur treated by trochanteric fixation nail in

the elderly population

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Fenil Shah

Year of collaboration: 2020-21

International Journal of Research in Orthopaedics *Tyagi V et al. Int J Res Orthop. 2021 Jan;7(1):125-128* http://www.ijoro.org

# **Original Research Article**

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20205573

# Assessment of the outcome of fracture intertrochanteric femur treated by trochanteric fixation nail in the elderly population

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# **ABSTRACT**

**Background:** Intertrochanteric fractures femur in elderly population are more commonly forbidden high morbidity. The surgical stabilization together with early rehabilitation is the main challenge. The elderly population have poor bone mass quality and also the chances of complications like nonunion or implant failure are more with conventional procedures. Stable fixation and early rehabilitation is the main aim in intertrochanteric fractures. The aim is to assess the functional outcome of intertrochanteric fractures femur managed by trochanteric fixation nail (TFN) in the elderly population.

**Methods:** The study includes 40 patients, 30 male and 10 female, with fracture intertrochanteric femur treated with TFN from September 2018 to May 2019 at Yashoda Superspeciality Hospital, Nehrunagar, Ghaziabad. The patients were evaluated at 4, 8, 12 weeks postoperatively and assessed by the Modified Harris hip score. Classification used is AO classification.

**Results:** The mean age of patients was 64 years. The mean duration of surgery was  $48\pm10$  min. The Harris hip score was  $96.90\pm4.60$ , which is better than scores from other implants used for intertrochanteric fractures femur.

**Conclusions:** In this study, we conclude that TFN is a good choice in managing the intertrochanteric fractures, having higher bone union rate and less union time. The period of immobilization is decreased, early weight bearing and less complications.

Keywords: Intertrochanteric fracture, TFN, Trochanteric fixation nailing

# **INTRODUCTION**

Intertrochanteric fractures are commonly encountered by the orthopaedic surgeons especially in the elderly population with osteoporotic bones. <sup>1,2</sup> The mechanism of trauma is mainly due to fall, road traffic accident. <sup>3</sup> Due to high complications with the conservative management such as joint stiffness, shortening, prolong immobilization, varus deformity, surgical management is preferred. <sup>4</sup> Many varieties of implants can be used in this fractures, such as plates and screws, proximal femoral nail (PFN), and trochanteric fixation nailing (TFN). Rotational stability of the proximal femoral segment was improved after the

development of TFN.<sup>5</sup> Also the intraoperative complications were reduced and early mobilization was achieved. In TFN, the principle is the sliding screw in the head and neck of femur which is attached to the intramedullary nail. This helps in proper anatomical reduction, blood supply is preserved, stable fixation is achieved and immobilization time is reduced.

# Aims and objective

The aim is to assess the functional outcome of intertrochanteric fractures femur managed by TFN in the elderly population.

Title of the Collaborative activity: Study of Cardiovascular Autonomic

Neuropathy in Symptomatic and Asymptomatic Type II Diabetic Patients

Name of the collaborator: 1. Yogesh Tripathi - Professor & Head,

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Rinku Garg, Bindu Garg

Year of collaboration: 2020-21

# **ORIGINAL ARTICLE**

# Study of Cardiovascular Autonomic Neuropathy in Symptomatic and Asymptomatic Type II Diabetic Patients

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#### **ABSTRACT**

Introduction: Cardiovascular autonomic neuropathy (CAN) is the most common and serious complication of diabetes, strongly associated with cardiovascular morbidity and mortality. The patients of early stages of diabetic autonomic neuropathy could be clinically asymptomatic or present with a few symptoms. But, these symptoms become severe and irreversible with the progression of the disease. Hence, this study aimed to identify CAN in symptomatic and asymptomatic diabetic patients.

Methodology: This study was conducted on 39 asymptomatic and 35 symptomatic T2DM subjects on their visit to the diabetic clinic OPD. CAN diagnosis and severity were assessed using Ewing's battery and frequencydomain parameters of heart rate variability (HRV).

Results: Symptomatic T2DM subjects had higher values of body mass index, waist circumference, and glycemic parameters compared to asymptomatic subjects. Progression of CAN was strongly associated with duration of diabetes and poor glycemic control. CAN was present in 97.1% of symptomatic subjects and 47.2% of asymptomatic subjects with different stages of severity. All frequency-domain parameters of HRV were significantly low in symptomatic subjects except of normalized low frequency and low frequency to high frequency ratio.

Conclusion: The severity of CAN was significantly higher in symptomatic subjects. Asymptomatic T2DM subjects also had significant CAN. CAN diagnosis should be done frequently in clinical setup even when the diabetic patients are asymptomatic. So that, appropriate management can be done and delay the progression of CAN as well reverse the condition.

Keywords: type 2 diabetes mellitus, cardiovascular autonomic neuropathy, heart rate variability.

# INTRODUCTION

Diabetes mellitus (DM) is a metabolic disorder affecting most organ systems in the body and its incidence is rapidly rising all over the world. In many patients, typical symptoms associated with DM manifest clinically only after sufficient cumulative adverse effects of the disease have taken place in the body. As a consequence, diabetic complications may be present by the time it is clinically diagnosed and are of sufficient severity (1).

Neuropathy is the most common microvascular disease, accounting for a major share of morbidity and hospitalization among diabetic patients. Diabetic Autonomic Neuropathy (DAN) is a chronic, diffuse form of diabetic neuropathy, associated with significant morbidity and mortality (2). DAN affects many organ systems of the body and in particular, cardiovascular autonomic neuropathy (CAN) is considered an advanced disease and a major cause of cardiovascular events like arrhythmias, myocardial ischemia, and stroke (3).

CAN is a chronic complication of type 2 diabetes mellitus (T2DM) with prevalence ranging from 25% to 75%. CAN is divided into subclinical and clinical stages. The subclinical stage of CAN manifests in the form of reduction in heart rate variability (HRV) whereas, clinical CAN, due to predominance in sympathetic activity manifests as resting tachycardia and exercise intolerance. With the further clinical progression of the severity of CAN due to complete sympathetic loss, orthostatic hypotension and syncope become evident. The severity of CAN and its monitoring

can be assessed using standard cardiac autonomic reflex tests (CARTs) (4).

It becomes evident that early recognition of CAN and its associated factors at the subclinical stage and intervention of appropriate management delays the complications and associated high risk of mortality by reversing it. HRV analysis is one of the most sensitive and specific diagnostic tests and classical Ewing's battery CARTs are still the gold standard for the CAN evaluation (5). In this study, we used both standard Ewing's battery and HRV analysis to detect CAN. To the best of our knowledge, no comprehensive studies showing the comparison of HRV and severity of CAN between symptomatic and asymptomatic T2DM patients could be identified on an extensive literature search. Hence, the present study was undertaken to evaluate the HRV and its associated risk factors in type 2 diabetic subjects.

# **MATERIALS & METHODS**

The study was conducted in the diabetic clinic of the General Medicine department in a tertiary care hospital, Uttar Pradesh, India. Approval of the Institutional ethics committee was taken prior to the conduction of the study. A well-informed written consent was obtained from all the subjects in accordance with the Helsinki Declaration of 1975 (revised in 2013). Seventy-four type II diabetes patients were enrolled in the study and subjects were divided into 2 groups based on the history of presence or absence of symptoms of autonomic neuropathy.

Title of the Collaborative activity: A comparative study of pulmonary

function tests in healthy male smokers & non-smokers

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Year of collaboration: 2020-21

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# Original research article

# "A comparative study of pulmonary function tests in healthy male smokers & non-smokers."

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# **Abstract**

**Background:** Tobacco smoking is widely prevalent in developing countries and it has extensive effects on respiratory function and is a risk factor for a number of respiratory diseases. Early detection of lung function decline in smokers will be beneficial for promoting smoking cessation and reducing lung tissue damage.

**Method:** This cross-sectional study was conducted in the rural and urban areas of Ghaziabad. We assessed the lung function in 150 healthy male smokers and 150 healthy non-smokers through spirometry.

**Results:** The prevalence of smoking was higher in middle age group (38-49 years age group) as compared to older and younger ones. The spirometry parameters were significantly greater in non-smokers than smokers (p<0.001). Both smokers and non-smokers showed negative correlation between spirometry parameters and age (p<0.001). It was also observed that all spirometry parameters increased with increase in height in both the groups.

Conclusion: Smoking leads to accelerated decline in lung function.

**Key words:** spirometry, smokers, non-smokers

# Introduction

Cigarette smoking, relative to other factors plays a dominant role in accelerated decline of pulmonary function. Because clinical symptoms of respiratory impairment become apparent only after many years of smoking, the potential for prevention of accelerated decline through smoking cessation efforts is considerable. <sup>1,2</sup> Various forms of tobacco smoking are practiced in India including cigarettes, beedies, chilums (Claypipe), Chutta (Reverse smoking), hukka (hubble-bubble) the first two beings the predominent types in urban areas. <sup>3</sup>

Tobacco smoking is widely prevalent in both developed and developing countries. It is one of the important preventable causes of premature deaths. More than 8 million people each year die because of tobacco use and the commonest cause among them is smoking. Over 80% of the world's 1.3 billion tobacco users live in low- and middle-income countries. <sup>4</sup>The death toll is steadily increasing and total tobacco-attributable deaths are projected to rise from 5.4 million in 2005 to 8.3 million in 2030.<sup>5</sup>

In most of the countries the prevalence of smoking is more among men than women and it is associated with the socioeconomic conditions.<sup>6</sup> The factor involved in the initiation and maintenance of the habit of smoking are social and psychological with physical dependence supervening.<sup>7</sup>

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Title of the Collaborative activity: N Terminal Pro BNP and Serum

Soluble ST2 in Thyroid Disorders

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# N TERMINAL PRO BNP AND SERUM SOLUBLE ST2 IN THYROID DISORDERS

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# **Abstract**

**Background:** There are only a few studies investigating the influence of thyroid hormones on BNP and ST2 levels, these studies have conflicting results. We have estimated serum Soluble ST2 and B -type natriuretic peptides in thyroid disorders, and explored the relationship of thyroid stimulating hormone in newly diagnosed hypo and hyper thyroid individuals.

Methodology: This is cross sectional study was carried out in newly diagnosed hypo-thyroid and hyper-thyroid females with age matched controls. Each group consisted of 45 individuals. They were controls, Newly diagnosed hypo-thyroid and hyper-thyroid subjects. fT3, fT4 and TSH were analyzed using commercially available chemiluminescence assay kits, NT pro BNP, serum ST2 were assessed by commercially available ELISA kits.

**Results:** Significant difference was seen in NT pro BNP (p < 0.000) and ST2 (p < 0.001) between controls, hypo-thyroid subjects and hyper-thyroid subjects. Further within group observations showed significantly higher NT pro BNP (p < 0.05) and low ST2 (p < 0.05) in hyperthyroid subjects when compared to hypothyroid subjects. The higher thyroid stimulating hormone levels were positively correlated with, NT pro BNP (r = 0.537; p < 0.000) and ST2 (r = 0.42; p < 0.000).

Conclusion: This increased N T Pro BNP levels in both newly diagnosed hypo and hyperthyroidism indicates that there will be a left ventricular dysfunction or they may be at risk of development of acute coronary syndromes, and the ST2 is an indicator of indicator of increased risk of future cardiovascular mortality.

**Keywords**: Hypothyroidism, Hyperthyroidism, N terminal Pro BNP, Soluble ST2.

Introduction: Recent reports have documented a gene ST2 (suppression of tumorigenicity) and its connected protein which especially promoted in precisely induced in mechanically overloaded cardiac myocytes. This proposed that that the protein can be overexpressed in remaining myocardium that has gone through higher levels of stress (1). ST2 is engaged in function and dysfunction of cardiovascular system. Activity of ST2 on heart muscle is perplexing and not completely comprehended and it is firmly identified with IL-33 method of activity. IL-33 could be restricted at the same time onto nuclear euchromatin and membrane-bound cytoplasmic vesicles. Kakkaret al. (1) reported that the mechanical stretch of living cells could enhance the release of IL-33 from the cytoplasmatic vesicles. Such an exocytosis was not identified to a potential stretch-initiated necrosis: the cells viability was demonstrated after the periods of biaxial stretch. accordingly, the cell stretch can lead to release of IL-33.

The structure of atrial natriuretic peptide (ANP) was first found in 1984. In following years, an atom, the natriuretic and diuretic impacts of which looked like those of ANP, was confined from a pig brain. In spite of the fact that this peptide is alluded to as the brain natriuretic peptide (BNP), it is really created in the ventricular myocardium. BNP isn't a prestored particle, however on the off chance that appropriate improvements exist it very well may be delivered quickly through mRNA amalgamation. The stimulus for discharge of BNP by the ventricles of the heart is fundamentally over stretching of cardia myocyte as opposed to the transmural pressure load.

BNP will be sybtesized both in an inactive N-terminal part with 76 amino acids (NT-pro BNP) and an active-hormone with 32 amino acids (BNP). The impacts of ANP and BNP are fundamentally the same. In renal system, the expanded glomerular filtration causes the restraints reabsorbtion of sodium and along these lines natriuresis and diuresis (2). Estimation of BNP levels have as of late been presented as a noninvasive, minimal risk test that estimates circling levels of BNP, which are raised in people with both suggestive and asymptomatic cardiac failure. This test is being utilized to identify preclinical coronary illness or to affirm the cardiovascular etiology in patients with symptoms. It not just empowers the early recognizable proof of patients with early cardiac failure yet in addition gives prognostic data dependent on the size of the expansion (3).

Hyperthyroidism leads to increased metabolism linked with higher sympathetic activity. Hormones of thyroid gland as facilitates catecholamine functions. However, hyperthyroidism is portrayed by both increased as well as decreased modulation parasympathetic activity on cardiovascular system (4),

The impacts of hyper-thyroidism on cardiovascular system are changes in haemodyamics like reduced resistance of systemic circulation, higher cardiac output, pulse, blood volume, circulatory strain and hindered cardiovascular contractility. These progressions bring about ventricular stretch & pressure over-load, which leads to increased BNP levels in this condition. 0 Late consideration has been attracted to the connection of BNP and hyper-thyroidism. Reports propose that plasma BNP and NT-proBNP

Title of the Collaborative activity: Effect of Neurodynamic

Mobilisation plus Core Stability on Pain and Motor Nerve Conduction

Velocity in Athletes with Lumbar Radiculopathy

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Year of collaboration: 2020-21





# Effect of Neurodynamic Mobilisation Plus Core Stability on Pain and Motor Nerve Conduction Velocity in Athletes with Lumbar Radiculopathy

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Original research papers

# EFFECT OF NEURODYNAMIC MOBILISATION PLUS CORE STABILITY ON PAIN AND MOTOR NERVE CONDUCTION VELOCITY IN ATHLETES WITH LUMBAR RADICULOPATHY

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Abstract Introduction. Lumbar radiculopathy (LR) is a common debilitating disorder of neuromuscular origin that affects athletes. Material and Methods. This study was a parallel group design and a total of 24 clinically diagnosed athletes with LR were recruited for the study and randomly assigned to one of the two groups, i.e. neurodynamic mobilisation plus core stability group (NDS) plus CS) and core stability group (NDS) plus CS) and core stability for a total of 14 sessions on alternate days. The outcome measures of motor nerve conduction velocity (in NCV) of the tibal nerve and pain intensity were recorded before the start of the intervention, at midpoint (7th session) and at the end of the intervention (14th session). Results: Easeline scores of pain and m NCV (NDS plus CS (5.67.5 - 0.6.3, 38.10 = 7.21 and CS: 6.58 = 0.79, 38.9.2 = 6.37) were non-significant. The outcome measures improved significantly during treatment in NDS plus CS group (baseline to 7th session). 7th to 14th session and overall mean change for pain and m NCV was found to be 4.74 = 0.37 and -6.43 ± 3.08, respectively. Non-significant improvement was reported for CS group. Two-way repeated measures (2 x 3) ANOVA was used to analyse the change in the outcome measures and revealed that NDS plus CS group showed statistically significant man effects for group on pain level (7.2, 5.34) = 0.89, p. < 0.001 and NCV (FC, 5.21) = 0.40, p. < 0.03. Significant time and group x time interaction effects were also found. Conclusions. The findings of the study revealed that neurodynamic mobilisation plus core stability were found effective in improving pain level and motor nerve conduction velocity of the tibal nerve in athletes with lumbar radiculopathy.

Key words: lumbar pain, neural mobilisation, exercises, pain, nerve conduction velocity

Lumbar radiculopathy (LR) is defined as spinal nerve-related symptoms such as back and leg pain, with variable presence of paraesthesias, reflex changes, and secondary interference of normal activities [I]. Lumbar radiculopathy (LR) is a common debilitating condition of humbar origin which influences both the general population and athletes alike [2, 3, 4]. LR is a form of low back pain which has a major socioeconomic impact. According to a study conducted by Global Burden of Disease (GBD), LR is a second major cause of years lived with disability [5]. Its prevalence has been estimated to be 3-5% of the population, affecting both men and women [6]. The cumulative lifetime prevalence of low back pain in elite level athletes is around [3% [7]. Most cases have an atraumatic onset but risk factors include frequent movements (especially with twisting motions at extreme ranges) [8]. Since athletic activities involve combinations of motion at extreme ranges of motion, athletic popuat extreme ranges) [8]. Since athietic activities involve companiations of motion at extreme ranges of motion, athletic population is more at risk of developing this problem. Diagnosis of LR is mainly based on clinical presentation and physical examination of the athlete. Several studies have been done to analyse this predisposition of athletes to herniated disc problem [9, 10]. LR caused by disc hermiation has a favorable natural history in the vast majority of patients. As per research, acround 70-80% of patients improve significantly in terms of pain and disability

within a span of 4-6 weeks with relative rest. However, according to one study, around 30% of patients still reported persistent pain and moderate disability at one year [I]]. Considering that it is not completely self-limiting in significant percentage of patients, the importance of intervention in athletes becomes even more pertinent [I]. Pain and decrease in the motor nerve conduction velocity (m NCV) are commonly seen findings in those afflicted with I.R. M NCV is a reliable and valid means of measuring the impact of radiculopathy on nerve conduction ability [12]. The clinical presentation of lumbar radiculopathy depends on the nerve root impinged. In this study, we included athletes with mechanical lower lumbar radiculopathy (I.4-I.5 and I.5-S]). Increased joint play due to poor intervertebral joint stabilisation and neural hypomobility have been reported to be two main impairments commonly seen in patients with I.R [13, 14]. Therefore, both neurodynamic mobilisation (NDM) and core stability (CS) exercises are rational approaches to manage this problem. Some previous studies conclude that both approaches have shown initial promising results for pain reduction and optimising m NCV values [15, 16]. However, the combined effect of both on athletic population is yet to be ascertained. NDM is a form of manual therapy which aims to assess and restore normal mobility, i.e. slide of the neural structures within the anatomical containers, which are supposed to be responsible for the musculoskeletal disorders [17, 18]. The compression of the sci-

Title of the Collaborative activity: Study of Cardiac Autonomic

Neuropathy and Left Ventricular Hypertrophy in type-II diabetic patients

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Year of collaboration: 2020-21

# **ORIGINAL ARTICLE**

# Cardiac Autonomic Neuropathy and Left Ventricular Hypertrophy in type-II diabetic patients

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# **ABSTRACT**

Introduction: Cardiac autonomic neuropathy (CAN) is a frequent and intractable complication of diabetes. Reduction in heart rate variability (HRV) is the first sign of CAN in its subclinical stage. Autonomic imbalance and hyperglycaemia in diabetes are associated with cardiovascular structural and functional modifications which lead to left ventricular hypertrophy (LVH). The study was undertaken to assess the changes in HRV and left ventricular mass in type 2 diabetes mellitus (T2DM) patients.

Material and methods: The case-control study was conducted on 78 T2DM subjects and 78 age & sex-matched healthy controls. CAN was assessed by frequency and time-domain parameters of HRV and LVH was measured using various ECG criteria including Cornell voltage, Cornell product, Sokolow-Lyon voltage, and Romhilt-Estes point score.

Results: All the frequency and time-domain parameters of HRV except resting heart rate, normalized LF, and LF/HF ratio were significantly reduced in T2DM patients compared to healthy controls. The prevalence of ECG-LVH was 25.7% using any single criteria and 12.2% with all the criteria. The highest prevalence (24.3%) was noted with Cornell product and Sokolow-Lyon voltage criteria followed by Romhilt-Estes point score (17.6%), and Cornell voltage criteria (16.2%).

Conclusion: Reduction in overall HRV with less high-frequency power and high LF/HF ratio are suggestive of parasympathetic dysfunction and sympathetic predominance. A significant LVH was noted with ECG-based electric criteria in T2DM patients. The study suggests that T2DM patients should be subjected to diagnostic HRV and ECG to identify the early occurrence of CAN and LVH.

Keywords: Cardiovascular autonomic neuropathy; Heart rate variability; Left ventricular hypertrophy; Type 2 diabetes mellitus.

# INTRODUCTION

Cardiac autonomic neuropathy (CAN) is a frequent and insidious complication of diabetes with a poor prognosis on long-standing. The clinical manifestations associated with CAN in diabetes result in cardiovascular morbidity and mortality. CAN is an established predictor of silent myocardial ischemia and subsequent cardiovascular events in type 2 diabetes mellitus (T2DM) Cardiovascular disease (CVD) is the leading cause of death in patients with DM with two to four times higher occurrence in comparison with the general population (2).

The cardiac ability to regulate beat-to-beat variation in heart rate in response to various metabolic needs is an indicator of good health and is under the control of cardiac autonomic nerves. Further, the autonomic nerves are also regulating the myocardial contractility, cardiac output, electrophysiology of heart, and vascular dynamics. CAN damages the autonomic nerves that innervate the heart and blood vessels leading to a multitude of problems. (3).

Disturbance in the control of high variability due to CAN reflects as a reduction in HRV as the first finding (3). Sympathetic predominance and parasympathetic dysfunction occur due to damage to the vagus nerve in the early stages of CAN. An increase in sympathetic tone continues until CAN progresses to the advanced stage and sympathetic denervation. Parasympathetic dysfunction reflects as the reduction in high-frequency

power and sympathetic predominance increases LF/HF ratio in early stages of CAN (2).

After the onset of diabetes, myocardial tissue undergoes many structural and functional modifications that lead to diabetic cardiomyopathy. Autonomic imbalance is one of the factors that accelerates atherosclerosis in T2DM. Accumulation of lipids and subsequent metabolic disbalance contribute to the ventricular dysfunction in diabetes (4). CAN also contributes to cardiomyopathy in diabetes by altering myocardial blood flow, sympathetic denervation, and change in myocardial neurotransmitters (5). Left ventricular hypertrophy (LVH) is strongly associated with T2DM independent of various covariates and also a strong predictor of cardiovascular disease (6).

diagnosis can be electrocardiography, echocardiography, and cardiac MRI Electrocardiography being a very simple, easily available, and affordable investigation has been extensively used for the LVH diagnosis. Cornell voltage criteria, Sokolow-Lyon voltage criteria, and Romhilt-Estes point score system are the most common ECG-based criteria used to assess LVH (7). Increased voltage criteria are diagnostic of LVH and can be observed in the early course of diabetes. Early detection of ANS dysfunction and cardiac changes with timely intervention can revert the natural course of progression of CAN and delay the adverse cardiac events (8). Hence, the present study was undertaken to assess the HRV and ECG-LVH in type-2 diabetic patients.

Title of the Collaborative activity: Study of the lung function tests in

Healthy non-smoking women using different cooking fuels

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Year of collaboration: 2020-21



# Study of the Lung Function Tests in Healthy Non-Smoking Women Using Different Cooking Fuels

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# **Abstract**

**Background:** In developing country like India still a large group of women use biomass as the cooking fuel in a poorly ventilated cooking area and it is considered as a major risk factor for respiratory diseases. Throughthis study we sought to find the effect of biomass and LPG fuel use on the lung function by stud spirometry.

**Method:** This cross-sectional study was conducted in the rural and urban areas of Ghaziabad. We assessed the lung function in 100 non-smoker females (50 biomass and 50 LPG fuel users) and studies the presence of any correlation between lung function and the duration of exposure.

**Results:** Compared to LPG users biomass fuel users had significantly lower values of FVC (p = 0.007), FEV1 (p = 0.0024), FEV1/FVC (p < 0.0001) and PEFR (p = 0.007). Statistically significant negative correlation was also found between exposure index and spirometry values in both the groups.

**Conclusion:** Biomass fuel has a more adverse effect on the lung function and the lung function decline is associated with the exposure duration.

Key words: Biomass, LPG, Exposure index, spirometry

# Introduction

Biomass fuels such as crop residues or wood are used in more than half the world's households and a significant proportion of this activity takes place in conditions where much of the airborne effluent is released in the living area. The majority of the solid fuels are burnt in inefficient traditional cooking stoves located in places without adequate ventilation. Biomass, including wood, agricultural residues, charcoal and dung, is widely used for cooking in developing countries.<sup>1</sup>

Pollutants from biomass combustion are a complicated mixture of aerosol (droplets and solid particles) and gases such as CO, PM, hydrocarbons, NO<sub>2</sub>, SO<sub>2</sub> and others. Indoor air-pollution by use of biomass fuels is found to have a serious impact on lungs function with a strong association found between length of exposure and respiratory problems. It leads to increase in the incidence of chronic bronchitis,

chronic obstructive pulmonary diseases and respiratory infections like pneumonia, tuberculosis. <sup>3,4</sup>

Wood smoke associated toxins causes epithelial cell lining desquamation, pulmonary edema, peribronchial& perivascular infiltration of Polymorphonuclear cells. These pulmonary lesions worsen dramatically with increasing exposure duration.<sup>5</sup>

More than half of the world's population (52%) use biomass fuel for cooking. Beside morbidity, burning biomass fuels such as wood, crop waste and dung, or coal is responsible for annual deaths of an around 1.6 million people. Exposure to indoor air pollution may be responsible for about 4% of the global health burden. In India 400 –550 thousand premature deaths occur annually due to use of biomass fuels.

The present study intended to study the effect biomass fueland LPG (Liquefied petroleum gas) on

Title of the Collaborative activity: Study of antibiotic utilization

pattern in tertiary care teaching hospital

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Year of collaboration: 2020-21

# National Journal of Physiology, Pharmacy and Pharmacology

# RESEARCH ARTICLE

# Study of antibiotic utilization pattern in tertiary care teaching hospital

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# **ABSTRACT**

Background: Infectious diseases are a prominent cause of mortality in the developing country. Antibiotics have performed a key function in lowering the morbidity and mortality rate due to infectious ailments while an irrational use of antibiotics will increase bacterial drug resistance and adverse drug events, as well. Aim and Objective: This study was performed to evaluate the uses of antibiotics with route of administration and the number of antibiotics used in per prescription. Materials and Methods: A prospective cross-sectional study conducted in indoor patients with collaboration of Santosh Medical College, Ghaziabad Uttar Pradesh, and All India Institute of Medical Sciences, Bhopal, Madhya Pradesh. Statistical analysis: SPSS (ver.22. IBM Corp.) was used. The data were checked frequency distribution and represented as cross-tabs. Pearson's Chi-square statistic was used to find association between antibiotic use and various variables. Two-tailed alpha of < 0.05 was considered as statistically significant. **Results:** A total of 172 prescriptions, from medicine, paediatrics department was taken for study out of 172 patients 101 were males and 71 were females. We found that in medicine majority of patients prescriptions both departments, in medicine 134 (39.3%), the most common antibiotics beta-lactam (piperacillin/tazobactam) 48 (14.1%) and the 2<sup>nd</sup> common was cephalosporins (ceftriaxone) 44 (12.9%). In pediatrics, prescription 38 (11.1%) prescription in that most common antibiotics was cephalosporins (cefixime) 18 (5.3%), the 2<sup>nd</sup> common beta-lactam (amoxicillin/clavulanic acid) 16 (4.7%) was used. Out of 172 prescriptions, 130 (75.6%) received (intravenous) iv route and 42 (24.4%) received oral route. Conclusions: By way of making antimicrobial stewardship elements of our everyday practice, we can enhance patient protection and care, reduce the unnecessary use of valuable resources, and decrease resistance.

KEY WORDS: Antibiotic Stewardship, Diagnosis, Resistance

# INTRODUCTION

Infectious diseases are a major cause of mortality in the developing country.<sup>[1]</sup> Infections with drug-resistant microorganism have exaggerated not solely morbidity and mortality however conjointly period of hospitalization and

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price of treatment. Once infections become proof against first-line antibiotics, costlier second-line therapies should be used, leading to an extended period of ill health and treatment in hospitals which frequently will increase health-care prices furthermore because the of economic burden on families and societies. [2] Incorrect prescribing of antibiotics exposes individual patients to potential complications of antibiotic medical care, with none therapeutic profit. One such complication is infection with *Eubacterium difficile*, associates anaerobic, spore-forming *Bacillus* that causes pseudomembranous redness, manifesting as dirrhoea that usually recurs, and may achieve infection and death; government agency has calculable that there is

National Journal of Physiology, Pharmacy and Pharmacology Online 2021. © 2021 Kavita Dhar Bagati, et al. This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (http://creative commons.org/licenses/by/4.0/), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

Title of the Collaborative activity: To evaluate the effect and

longevity of Botulinum toxin type A (Botox®) in the management of

gummy smile - A longitudinal study upto 4 years follow-up

Name of the collaborator: 1. Sagrika Shukla Department of Dentistry,

All India Institute of Medical Sciences (AIIMS), Rishikesh, 249203, India.

Name of the participants: Athreya Rajagopal 1, Manoj Goyal 2, Sagrika

Shukla 3, Neeti Mittal

Year of collaboration: 2020-21

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J Oral Biol Craniofac Res. 2021 Apr-Jun;11(2):219-224. doi: 10.1016/j.jobcr.2021.02.006. Epub 2021 Feb 10.

# To evaluate the effect and longevity of Botulinum toxin type A (Botox®) in the management of gummy smile - A longitudinal study upto 4 years follow-up

Athreya Rajagopal <sup>1</sup>, Manoj Goyal <sup>2</sup>, Sagrika Shukla <sup>3</sup>, Neeti Mittal <sup>4</sup>

Affiliations

# **Affiliations**

- Oral and maxillofacial surgeon, Sant Parmanand Hospital, Delhi, India.
- 2 Oral and maxillofacial surgery, Santosh University, Gaziabad, India.
- 3 Department of Dentistry, All India Institute of Medical Sciences (AIIMS), Rishikesh, 249203, India.
- 4 Santosh University, Gaziabad, India.

PMID: 33665071 PMCID: PMC7898180 DOI: 10.1016/j.jobcr.2021.02.006

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# **Abstract**

**Aim:** the current study was aimed (1) To study the effect of Botulinum toxin (BT) A on gummy smile (2) To determine the efficacy, predictability & longevity of the effect of Botox® in the management of gummy smile and lastly (3)To identify the treatment groups for Botox® as a single modality for the non-surgical treatment of gummy smile.

**Material and method:** only patients who were willing to get the treatment done with Botox® injection were enrolled in the study, irrespective for the need for the surgery. Thus, total of 32 patients were divided into two groups, group 1, having a gummy smile with less than 5 mm who were treated with 3 units of Botox® and group II, having gummy smile of more than 5 mm who were treated with 5 units of Botox® and each group underwent 2 cycles of injection 7 months apart given at the Yonsei's point and were followed for a period of 14 months.

**Results:** the procedure was tolerated well by the patients; none developed any allergic reaction or antibodies related to BT. In the less that 5 mm and more than 5 mm of gingival show group the results remain excellent till 3 months after which gummy smile gradually reaches to the baseline levels. Significant changes start to reappear by the 5th month.

**Conclusion:** Authors recommend use of BT for the treatment of gummy smile as the technique is safe, economical and easy to use. Though not long lasting, it may motivate patients to go for surgical procedure, mainly who have gummy smile of more than 5 mm because of maxillary vertical excess.

Keywords: Aesthetics; Botox® injection; Botulinum toxin; Gummy smile.

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# **Figures**

Title of the Collaborative activity: Minimally invasive intraarticular

platelet rich plasma injection for refractory temporomandibular joint

dysfunction syndrome in comparison to arthrocentesis

Name of the collaborator: 1. Dhirendra Srivastava ESIC Dental College

& Hospital, New Delhi, India.

Name of the participants: Lokesh Chandra, Manoj Goyal, Dhirendra

Srivastava

Year of collaboration: 2020-21

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J Family Med Prim Care. 2021 Jan;10(1):254-258. doi: 10.4103/jfmpc.jfmpc\_1633\_20. Epub 2021 Jan 30.

# Minimally invasive intraarticular platelet rich plasma injection for refractory temporomandibular joint dysfunction syndrome in comparison to arthrocentesis

Lokesh Chandra <sup>1 2</sup>, Manoj Goyal <sup>1</sup>, Dhirendra Srivastava <sup>3</sup>

Affiliations

# **Affiliations**

- 1 Maxillofacial Surgery, Santosh Deemed to be University, Ghaziabad, Uttar Pradesh, India.
- 2 Department of Oral & Maxillofacial Surgery, ESIC Dental College & Hospital, New Delhi, India.
- 3 ESIC Dental College & Hospital, New Delhi, India.

PMID: 34017736 PMCID: PMC8132812 DOI: 10.4103/jfmpc.jfmpc\_1633\_20

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# Abstract

**Context:** Internal derangements of temporomandibular joint (TMJ) with associated symptoms which do not respond to conservative therapies are refractory cases of temporomandibular joint dysfunction syndrome (TMD). Minimally invasive techniques like arthrocentesis and platelet rich plasma (PRP) injections are usually employed to improve TMJ symptoms and function in these cases.

**Aims:** To compare PRP with arthrocentesis for evaluating the effectiveness of PRP in relieving symptoms of refractory TMJ pain dysfunction syndrome.

**Setting and design:** A clinical study was carried out on 52 patients of refractory Temporomandibular joint dysfunction syndrome. The patients were divided in two groups that is Group A - test group and Group B -control Group.

**Methods and material:** Group A consisted of 26 patients who underwent intraarticular PRP injection in TMJ and Arthrocentesis of TMJ was done in 26 patients of Group B. TMJ pain, Maximium Interincisal opening and TMJ clicking were assessed among the group as well as between the groups over a period of 6 months.

**Statistical analysis used:** Repeated Measure ANOVA was used to compare the parameters within the groups and T test was used for group comparison at 0.05 level of significance.

**Result:** There was statistically significant difference in pain intensity improvement  $1 \pm 0.75$  versus 3.17  $\pm$  2.13, maximum interincisal opening 39.86  $\pm$  2.86 versus 37.59  $\pm$  4.03 and clicking 6 versus 16 between the PRP group and arthrocentesis group at P < 0.05.

**Conclusions:** Intraarticular PRP injection for the management of refractory TMD is more effective than arthrocentesis in reducing symptoms and functional improvement.

**Keywords:** Arthrocentesis; platelet rich plasma; temporomandibular joint; temporomandibular joint dysfunction syndrome.

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# **Figures**

Title of the Collaborative activity: Daratumumab plus carfilzomib: An

optimistic approach in relapsed/refractory multiple myeloma

Name of the collaborator: 1)Department of Conservative Dentistry

and Endodontics, PDM Dental College and Research Institute, Sarai

Aurangabad, Bahadurgarh, Haryana, India;

Name of the participants: A.P. Dubey

Year of collaboration: 2020-21



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# Daratumumab plus carfilzomib: An optimistic approach in relapsed/refractory multiple myeloma

Dubey A.P.<sup>a</sup> ; Khatri, Sameer<sup>b</sup>; Maggo, Sachin<sup>c</sup>; Singh, Nilabh<sup>d</sup>; Sharma, Durgesh<sup>e</sup>

- Save all to author list
- <sup>a</sup> Department of Medicine, Santosh Medical College, Ghaziabad, Uttar Pradesh, India
- <sup>b</sup> Department of Medical Oncology, Shanti Mukand Hospital, New Delhi, India
- <sup>c</sup> Department of Medicine, Army Hospital, Joshimath, Uttarakhand, India
- <sup>d</sup> Department of Medicine, Army Hospital, Tejpur, Assam, India

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# Abstract

Background: Although with the introduction of novel agents, clinical outcomes have significantly improved in patients of multiple myeloma (MM); however, nearly all relapse, requiring subsequent treatment. Patients who have been heavily treated for relapsed/refractory MM (RRMM) have limited options and poor survival outcomes. Carfilzomib plus daratumumab combination have been evaluated in a phase 1b study in patients of RRMM progressing after 1-3 lines of therapies including bortezomib and an immune-modulatory drug. However, data are lacking agenta for a land of this

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Mexico

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**Title of the Collaborative activity:** Assessment of psycho-emotional distress due to age, body mass index, and marital status in polycystic

Name of the collaborator: 1) Department of Otorhinolaryngology and

Head & Neck Surgery, AIIMS, New Delhi, India; 2)Department of ENT-

Osmania Medical College and Govt. ENT Hospital, Koti, Hyderabad, India

Name of the participants: 1) Fauziaa, Tabassum, 2) Kavita Dhar, 3)

Vipender Singh Chopra

ovary syndrome in North

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# Assessment of psycho-emotional distress due to age, body mass index, and marital status in polycystic ovary syndrome in North Indian population



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# Abstract

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# Abstract

Objectives: Polycystic ovary syndrome (PCOS) is a multifaceted endocrine disorder in reproductive age having a greater impact on health-related quality of life (HRQOL). The aim of this study was to find out PCOS demographics and its related HRQOL effects for improving psychological understanding in disease management. Materials and Methods: A prospective questionnaire-based study was conducted for a period of twelve months at All India Institute of Medical Sciences, Patna, India. The data of 100 PCOS cases were collected about socio-demographic status, clinical history, and dietary intake. Then, a validated PCOS questionnaire (PCOSQ) was used to observe Pragaria of PCOS symptoms on patients'

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Infertility-related stress and quality of life among infertile women with polycystic ovary syndrome: Does body mass index matter?

Li, G. , Zhao, D. , Wang, Q. (2022) Journal of Psychosomatic Research

Assessment of Health-Related Quality of Life Using PCOSQ Tool, Its Determinants and Coping Mechanisms Used by Women with Polycystic Ovarian Syndrome Attending Multidisciplinary Clinic in Mumbai, India

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Effects of polycystic ovary syndrome on health-related quality of life

Upadhya, K., Trent, M. (2007) Expert Review of Pharmacoeconomics and Outcomes Research

Development of Chinese version of polycystic ovary syndrome health-related quality of life questionnaire (Chi-PCOSQ)

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Title of the Collaborative activity: Incidence of mupirocin resistance

in staphylococcus aureus isolated from rural population: A new emerging

challenge

Name of the collaborator: 1) Department of Microbiology, Department

of Microbiology, Maharishi Markandeshwar Medical College and Hospital,

Kumarhatti, Solan, Himachal Pradesh 173 229, India

Name of the participants: Dinesh, Kumar

Year of collaboration: 2020-21

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# Incidence of mupirocin resistance in staphylococcus aureus isolated from rural population: A new emerging challenge

Kumar, Dinesh<sup>a</sup>; Bisht, Dakshina<sup>a</sup> ☑ ; Faujdar, Sameer Singh<sup>b</sup> ☐ Save all to author list

<sup>a</sup> Department of Microbiology, Santosh Medical College and Hospital, Ghaziabad, 201009, Uttar Pradesh, India

<sup>b</sup> Department of Microbiology, Department of Microbiology, Maharishi Markandeshwar Medical College and Hospital, Kumarhatti, Solan, 173 229, Himachal Pradesh, India

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# Abstract

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# **Abstract**

Introduction: Staphylococcus aureus is the most common bacteria linked to disease and death, causing serious community-acquired and nosocomial infections. Therefore mupirocin has been frequently used for treatment Staphylococcus aureus infec-tions. Aim: This research was conducted to evaluate the prevalence of mupirocin (Mup) resistance in our tertiary care hospital. Methods: All strains of S. aureus were isolated from various clinical samples from patients either attending the outdoor services or getting treatment in the hospital. Detection of Mup-resistant Staphylococcus aureus was done by disc diffusion and E-test methods. Results: Overall 265 S. aureus was obtained from numerous clinical samples. Among these, 111 isolates (42%) were MRSA. The overall occurrence of mupirocin resistance was 13% among all S. aureus isolates. Mupirocin resistance was found 19% in MRSA and 09% in MSSA. Conclusion: Mupirocin resistance can be reduced by proper use of mupirocin and conducting regular tests to manage S. aureus colonization among health care workers. © IJCRR.

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Characteristic, antibiotic resistance and molecular typing of Staphylococcus aureus isolated from intensive care unit and burn patients based on coagulase gene analysis

Hajikhani, B. , Mohammadi, A. , Nasiri, M.J. (2022) Gene Reports

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Chauhan, S., Surender, Rappai, T.J. (2021) Journal of Pure and Applied Microbiology

Biofilm formation and its association with antibiotic susceptibility pattern in methicillin-resistant Staphylococcus aureus isolates

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Title of the Collaborative activity: Antibacterial potential of neem

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enzymes: A clue to future antibacterial agent?

Name of the collaborator: 1) Department of Microbiology, Maharishi

Markandeshwar Medical College and Hospital, Solan, Himachal Pradesh,

India

Name of the participants: 1)Sameer, Faujdar, 2)Dakshina Bisht

Year of collaboration: 2020-21

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# Antibacterial potential of neem (Azadirachta indica) against uropathogens producing betalactamase enzymes: A clue to future antibacterial agent?

Faujdar, Sameer<sup>a</sup>; Bisht, Dakshina<sup>a</sup> ; Sharma, Amisha<sup>b</sup> Save all to author list

<sup>b</sup> Department of Microbiology, Maharishi Markandeshwar Medical College and Hospital, Solan, Himachal Pradesh, India

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#### **Abstract**

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#### Abstract

Background: Emergence of drug resistance in Gram-negative bacilli due to production of extended-spectrum beta-lactamases (ESBL), metallo-beta-lactamases (MBL), and AmpC beta-lactamase is very common nowadays; therefore, we are left with less choice for antibiotics that is why we are in the need for the new alternatives. Hence, the current study was done to demonstrate antibacterial properties of neem (Azadirachta indica) leaves against ESBL, MBL, and AmpC beta-lactamase-producing Gram-negative uropathogens. Methods: Gram-negative uropathogens (221) were isolated and further tested for beta-lactamase (ESBL, MBL, and AmpC) production. Neem (A. indica) was tested for its antibacterial activity against all uropathogens. Results: Ethanolic extract of neem leaves showed good antibacterial activity against all isolates. Maximum zone of inhibitions and lowest minimum inhibitory concentration and minimum bactericidal concentration values were revealed by

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Comparison of antimicrobial efficacy of natural extracts as a disinfectant for removable orthodontic appliances: An ex vivo study

Jagannathan, J. , Nagar, P. , Kaniappan, A.S. (2020) International Journal of Clinical Pediatric Dentistry

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<sup>&</sup>lt;sup>a</sup> Department of Microbiology, Santosh Medical College and Hospital, Ghaziabad , Uttar Pradesh, 201 009, India

Title of the Collaborative activity: Determination of transverse

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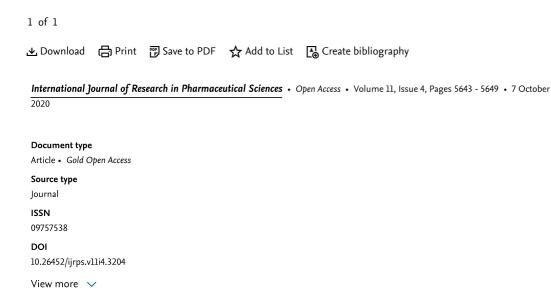
Name of the collaborator: 1) Department of Radiology, Govt. medical

College, Saharanpur, U.P 247001, India

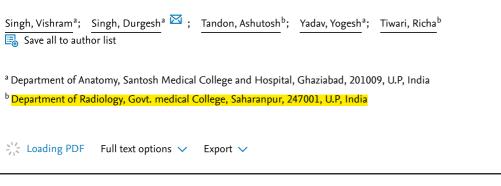
Name of the participants: 1) Vishram, Singh, 2) Durgesh Singh,

3)Yogesh Yadav

Year of collaboration: 2020-21



#### Determination of transverse diameter and longitudinal axis in patients with cholecystitis and cholelithiasis by computed tomography to rule out gallbladder carcinoma



#### **Abstract**

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#### Abstract

The aim of the article is to the determination of transverse diameter and longitudinal axis in patients with cholecystitis and cholelithiasis with the help of CT scan in the north Indian population for the estimation of epidemiol-ogy. Patients with cholecystitis and cholelithiasis of ages between 17-80 years irrespective of gender were included in the study (cases). All patient's cases (100) and controls (100) were advised the night before that did not eat or drink. Control groups (Normal Gallbladder) were collected when patients are comprised of other abdominal disease diagnosed by computed tomography. The mean age of controls and cases was 47.24±11.57 and 45.20±16.22 years, respectively studied by computed tomography. More than half of cases (62%) and 50% of controls were females. The transverse diameter was significantly (p=0.0001) higher among cases (36.42±15.52 mm) than controls (24.12±9.11 mm) studied by computed tomography. Longitudinal axis was significantly (p=0.0001) higher among cases (33.23±14.73 mm) than controls (21.75±8.69) studied by computed tomography. Transverse diameter>25 correctly predicted cholecystitis and cholelithiasis by CT in 38.5% cases with sensitivity and specificity of 77% (95%CI=68.8-85.2) and 74% (95%CI=55.7-74.3%) respectively. Longitudinal axis >25 correctly predicted cholecysti-tis and cholelithiasis by CT in 34.5% cases with specificity and sensitivity of 69% (95%CI=59.9-78.1) and 71% (95%CI=62.1-79.9%) respectively. We concluded in this study, increased transverse diameter and longitudinal axis were observed. Good

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Name of the collaborator: 1)Department of Biochemistry, Heritage

Institute of Medical Sciences, Varanasi, Uttar Pradesh, India

Name of the participants: 1) Afreen Chaudhary, 2) Preeti Sharma,

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## Salivary resistin: A noninvasive mirror of attributes of type 2 diabetes mellitus

Choudhry, Afreen<sup>a</sup>; Sharma, Preeti<sup>a</sup>; Mohapatra, Tapan<sup>a</sup> ; Prasad, Mahendra<sup>b</sup>; Kumar, Pradeep<sup>a</sup>

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- <sup>a</sup> Department of Biochemistry, Santosh Medical College, Santosh Deemed to Be University, Ghaziabad, Uttar Pradesh, India
- <sup>b</sup> Department of Biochemistry, Heritage Institute of Medical Sciences, Varanasi, Uttar Pradesh, India

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#### **Abstract**

Background: The long-Term complications associated with diabetes can be delayed by early screening and diagnosis. This requires venipuncture at regular intervals of time which causes anxiety and discomfort to the patient discouraging the patient further. Studies are being conducted to develop saliva as a tool for the screening and monitoring of systemic diseases. It is reported that resistin along with other adipokines functions as a pro-inflammatory cytokine, promotes insulin resistance (IR), and can be detected in the saliva of healthy adults. Aim: The aim of this study is to compare and correlate the serum and salivary levels of resistin in normal and diabetic patients. Furthermore, to establish salivary resistin as a tool to assess IR and inflammatory and glycemic status in type 2 diabetes mellitus (DM) patients, its correlation with homeostatic model assessment-IR (HOMA-IR), C-reactive protein (CRP), and glycated hemoglobin (HbA1c) along with fasting blood sugar is also studied. Materials and Methods: Blood glucose, HbA1c, and resistin were estimated by glucose or idage peroxidase method, high-performance liquid chromatography, and enzyme-linked immunosorbent assay, respectively. CRP

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hepatitis C virus

Name of the collaborator: 1) TNMC and BYL Nair Charitable Hospital,

Mumbai, India;

Name of the participants: 1) Anupam Singh

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23921099

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## A new model to predict response to direct-acting antiviral therapy in decompensated cirrhotics due to hepatitis C virus

Debnath, Prasanta<sup>a</sup> ; Chandnani, Sanjay<sup>a</sup>; Rathi, Pravin<sup>a</sup>; Mair, Sujit<sup>a</sup>; Junare, Parmeshwar<sup>a</sup>; Udgirkar, Suhas<sup>a</sup>; Singh, Anupam<sup>b</sup>; Contractor, Qais<sup>a</sup>

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#### <sup>a</sup> TNMC and BYL Nair Charitable Hospital, Mumbai, India

<sup>b</sup> Santosh Medical College, Ghaziabad, India

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#### Abstract

Aim of the study: Decompensated hepatitis C virus (HCV) cirrhosis is a difficult to treat cohort, and there is no gold standard predictor of response to direct-acting antiviral (DAA) therapy. We conducted this study to look for factors responsible for improvement in post-therapy status, i.e. attainment of Child-Turcotte-Pugh (CTP) class A from B or C, and devise a new model to predict post-therapy response. Material and methods: Prospective analysis of data from decompensated HCV cirrhotics was done and association of each parameter with patient outcomes at 36 weeks after treatment was assessed. Results: 34 patients (54.8%) attained CTP class A after treatment, Factors that were independently associated with disease outcome included albumin (odds ratio [OR] = 4.84, 95%

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Significance of serum IP-10/CXCL10 measurement in predicting post-direct acting antiviral treatment liver function in patients with HCVdecompensated liver cirrhosis

Katoh, R., Maekawa, S., Osawa, I.

(2023) Hepatology Research

Direct antiviral therapy for hepatitis C cirrhotic patients in liver transplantation settings: a systematic review

Li, J., Wu, V., Pan, C.Q. (2022) Hepatology International

Direct-Acting Antivirals for HCV Treatment in Decompensated Liver Cirrhosis Patients: A Systematic Review and Meta-Analysis

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Nonalcoholic Fatty Liver Disease Patients can Detect Undiagnosed

Nonalcoholic Fatty Liver Disease Among Them: Is There a Genetic Link?

Name of the collaborator: 1)Department of Gastroenterology,

Topiwala National Medical College and BYL Ch Hospital, Dr. A.L Nair

Road, Mumbai, Maharashtra 400 008, India;

Name of the participants: 1) Anupam Singh

Year of collaboration: 2020-21

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#### Screening of Family Members of Nonalcoholic Fatty Liver Disease Patients can Detect Undiagnosed Nonalcoholic Fatty Liver Disease Among Them: Is There a Genetic Link?

Jain, Shubham<sup>a</sup> ; Thanage, Ravi<sup>a</sup>; Panchal, Falguni<sup>b</sup>; Rathi, Pravin M.<sup>a</sup>; Munshi, Renuka<sup>b</sup>; Udgirkar, Suhas S.<sup>a</sup>; Contractor, Qais Q.<sup>a</sup>; Chandnani, Sanjay J.<sup>a</sup>; Sujit, Nair P.<sup>a</sup>; Debnath, Partha<sup>a</sup>; Singh, Anupam<sup>c</sup> Save all to author list

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<sup>b</sup> Molecular Genetic Laboratory, Department of Clinical Pharmacology, Topiwala National Medical College and BYL Nair Ch.Hospital, Dr.AL Nair Road, Mumbai, 400 008, Maharashtra, India

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#### Abstract

Background & aims: Nonalcoholic fatty liver disease (NAFLD) has multifactorial origin. Genetic and environmental factors lead to the biology of this complex disorder. In this study, we screened parents of cases with NAFLD and compared them with parents of cases without NAFLD to see its familial Page 80 of 124 aggregation and the role of patatin-like phospholipase domain containing 3 (PNPLA3). Method: It was

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Wu, Y.-L., Kumar, R., Wang, M.-

(2021) World Journal of Gastroenterology

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Name of the collaborator: 1) ABVIMS & Ram Manohar Lohia Hospital,

New Delhi, India;

2) NICPR-ICMR, Noida, Uttar Pradesh, India

Name of the participants: 1) Sonisha Gupta

Year of collaboration: 2020-21

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#### Effect of air pollution on lung function of road side hawkers

Kumar, Pawan<sup>a</sup> ; Gupta, Sonisha<sup>b</sup>; Asthana, Smita<sup>c</sup> Save all to author list

- <sup>a</sup> ABVIMS & Ram Manohar Lohia Hospital, New Delhi, India
- <sup>b</sup> Respiratory Medicine, Santosh University, Ghaziabad, Uttar Pradesh, India
- <sup>c</sup> NICPR-ICMR, Noida, Uttar Pradesh, India

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#### Abstract

Background: There is increasing concern of ambient air pollution as a global threat to humans. The most prominent effect of air pollution is on lung function. The air pollution causes decline in lung function amongst high exposure populations. There are some most vulnerable groups who are chronically exposed to ambient air pollution like traffic policemen, roadside hawkers, Banjara community in India, E-Rickshaw drivers etc. Methods: A cross sectional study was conducted in East Delhi, India. Spirometry was done for roadside hawkers having high exposure to ambient Air pollution and working daily for 6-8 hours for the last more than 3 years. The low exposure group was taken from personnel working inside offices. The spirometry parameters of both the groups were compared. Student 'T' test was applied for statistical analysis with the help of SPSS software. Results: Comparison of FVC, FEV1 and FEV1/FVC ratio among two groups revealed lower values for the high exposure group which was statistically significant. Among high exposure group the mixed pattern of ventilation defect was observed. Among low exposure group normal pattern of lung function was observed. Conclusion: Roadside hawkers are a vulnerable group to ambient air pollution resulting in their lower values of Page 82 of 124

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Name of the collaborator: 1) Department of Dermatology,

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Name of the participants: 1) Vijay Kumar Singh Garg

Year of collaboration: 2020-21

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#### A randomized, placebo and active controlled, split scalp study to evaluate the efficacy of platelet-rich plasma in patchy alopecia areata of the scalp

Hegde, Pallavi<sup>a</sup>; Relhan, Vineet<sup>a</sup> ; Sahoo, Bijaylaxmi<sup>a</sup>; Garg, Vijay Kumar<sup>b</sup> Save all to author list

<sup>a</sup> Department of Dermatology, Venereology, and Leprology, Maulana Azad Medical College, New Delhi, India

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#### **Abstract**

Platelet-rich plasma (PRP) is a new modality of treatment in the field of dermatology. There are paucity of studies evaluating the effects of PRP in nonscarring alopecia especially alopecia areata (AA). To compare the efficacy and safety of PRP in patchy AA of the scalp in a placebo and active controlled trial. This was a randomized, placebo and active controlled, split scalp study. Fifty patients of patchy AA of the scalp were recruited and allocated to two treatment groups. Left side of the scalp received placebo (intralesional normal saline), right side of the scalp received intralesional PRP in one group and intralesional triamcinolone acetonide in second group. Three treatment sessions were given at 4-week interval and final follow-up was done at 8 weeks later. SALT scoring, dermoscopy were the parameters used to assess the efficacy. The SALT score showed statistically significant improvement from baseline in both the treatment groups (P value <.001). The maximum absolute regrowth was shown by the steroid group followed by PRP followed by placebo group (P-value 016). Improvement in dermoscopic Page 84 of 124

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Pixley, J.N., Cook, M.K., Singh, R.

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Name of the collaborator: 1) Department of Medicine, All India

Institute of Medical Sciences (AIIMS), Room No. 3094, New Delhi, India;

Name of the participants: 1) Rinku Garg

Year of collaboration: 2020-21



## Anthropometric Correlation with Pathophysiology of Obstructive Sleep Apnea (OSA): A Review

Thukral, Himanshu<sup>a, b</sup>; Gupta, Gaurav<sup>a</sup> ⋈ ; Sinha, Sanjeev<sup>a</sup>; Garg, Rinku<sup>b</sup> Save all to author list

#### <sup>a</sup> Department of Medicine, All India Institute of Medical Sciences (AIIMS), Room No. 3094, New Delhi, India

<sup>b</sup> Department of Physiology, Santosh Medical College and Hospitals (SMC&H), Santosh Deemed To Be University, Uttar Pradesh, Ghaziabad, India

#### **Abstract**

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#### **Abstract**

Obstructive sleep apnoea syndrome (OSAS) is a type of breathing disorder with upper airway obstruction, leading to oxy-haemoglobin desaturations and sleep disturbance. However awareness regarding various anthropometric parameters used to analyse OSA syndrome pre-clinically is inadequate. In developing nations, like India, resources are not adequate for analysis of sleep disturbances. That is why the prevalence and validity of various anthropometric parameters including neck circumference, Body mass index and waist circumference to be established and verified regularly. We have also seen the data from oral aspect and its anomalies. Various articles from Pubmed, scopus, google scholar were searched for data. These body measurements may provide pre-clinical aspect of OSA, whether it is present or not. Discussion was done on these anthropometric parameters and which parameter is gold standard for the pre-clinical investigations. © 2020, Springer Nature Singapore Pte Ltd.

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Name of the collaborator: 1) Department of Community Medicine,

Shkm Government Medical College, Gurgaon, Haryana, India;

Name of the participants: 1) Deepika Agrawal

Year of collaboration: 2020-21

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ISSN

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10.4103/jehp.jehp\_475\_20

#### A cross-sectional study to investigate the impact of focused group discussion on menstrual hygiene among rural school girls of Southern Haryana, India

Singh, Abhishek<sup>a</sup>; Gupta, Vikas<sup>b</sup> ⋈; Agrawal, Deepika<sup>c</sup>; Goyal, Pooja<sup>d</sup>; Singh, Mitasha<sup>d</sup>; Lukhmana, Shveta<sup>e</sup>

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- <sup>a</sup> Department of Community Medicine, Shkm Government Medical College, Gurgaon, Haryana, India
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- <sup>c</sup> Department of Community Medicine, Santosh Medical College, Ghaziabad, Uttar Pradesh, India
- <sup>d</sup> Department of Community Medicine, Esic Medical College, Faridabad, Haryana, India

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#### **Abstract**

INTRODUCTION: Menstruation is a natural phenomenon among women who experience shedding of blood for 1-7 days every month which usually starts between age 11 and 14 years and continues until menopause at about 51 years of age. It is important to maintain menstrual hygiene, as poor practices increase vulnerability to reproductive and urinary tract infections. The present study was conducted with an aim to investigate the impact of focused group discussion (FGD) compared to didactic lectures (DLs) on the menstrual hygiene knowledge and practices. METHODS: The present cross-sectional study was conducted among 649 school girls during January to August 2019 using a convenience sampling technique. After collecting baseline information using a pretested, predesigned, standardized questionnaire, the participants in the control and intervention groups were exposed for the DLs and

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Title of the Collaborative activity: Cytokine Storm Syndrome in

COVID-19: Diagnosis and Management Strategies

Name of the collaborator: 1. Department of Medicine, Army Hospital,

Joshimath, Uttarakhand, India, 2. Department of Medicine, Command

Hospital, Lucknow, Uttar Pradesh, India

Name of the participants: Amba Prasad Dubey

Year of collaboration: 2020-21

Review Article

International Journal of Health Sciences and Research
Vol.10; Issue: 5; May 2020
Website: www.ijhsr.org

ISSN: 2249-9571

## Cytokine Storm Syndrome in COVID-19: Diagnosis and Management Strategies

Sachin Maggo<sup>1</sup>, Pawan Dhull<sup>2</sup>, Amba Prasad Dubey<sup>3</sup>, Dick Brashier<sup>4</sup>, Awanish Karan<sup>5</sup>, Nilabh Kumar Singh<sup>6</sup>, Kapil Joshi<sup>7</sup>

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<sup>6</sup>MD (Medicine), Department of Medicine, Army Hospital, Tejpur, Assam, India 
<sup>7</sup>MBBS, Department of Medicine, Army Hospital, Joshimath, Uttarakhand, India

Corresponding Author: Sachin Maggo

#### **ABSTRACT**

Coronavirus disease 2019 (COVID-19), is a viral illness caused by novel coronavirus called as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was declared as a pandemic by the World Health Organisation (WHO) on March 11, 2020. Initial studies have shown molecular resemblances in the receptor binding domains of SARS-CoV and SARS-CoV-2 which bind angiotensin converting enzyme 2 (ACE 2) receptors, thereby entering the host cells to cause infection. COVID 19 can present as a broad spectrum of illness, from mild common cold to life threatening acute respiratory distress syndrome (ARDS), multiorgan dysfunction and shock. The key step transforming mild disease to severe is immune dysfunction and cytokine dysregulation resulting in what is called as "cytokine storm syndrome". It is prudent to diagnose cytokine storm early in the course of disease to mitigate the subsequent consequences. The use of H score as in secondary haemophagocytic lymphohistiocytosis (sHLH) can be helpful as the inflammatory cytokine profile in sHLH is very similar to that of COVID-19. The article also discusses the past experience and current evidence of use of immunological cytokine specific antibodies, new anti-rheumatic drugs and role of convalescent plasma that may prove instrumental in the fight against COVID 19 as they can precisely target the key steps of the immune response. An approach in this regard is also proposed to screen patients of severe COVID-19 disease for exuberant inflammation by measuring cytokines in an attempt to identify patients who will benefit from this selective immunosuppression.

*Keywords:* COVID-19; SARS-CoV-2; Cytokine storm syndrome; H score; Hydroxychloroquine; Tocilizumab; Convalescent plasma

#### **INTRODUCTION**

Coronavirus disease 2019 (COVID-19), a new but widely prevalent clinical entity is caused by novel coronavirus called as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease has affected a substantial proportion of people worldwide in a short span of time and was declared as a pandemic by the World Health Organisation (WHO) on

March 11, 2020.<sup>[1]</sup> As on Apr 12<sup>th</sup> 2020, around 1,696,588 people were affected by this disease in 203 countries with a death toll of 105,952.<sup>[2]</sup> The new agent belongs to a large family of coronaviruses known since decades to human mankind. Being first discovered in domestic poultry in 1930, there are now 7 viruses known to cause Coronaviruses are disease in humans. enveloped RNA viruses that cause

Title of the Collaborative activity: Daratumumab Plus Carfilzomib: An

Optimistic Approach in Relapsed/ Refractory Multiple Myeloma

Name of the collaborator: 1. Department of Medical Oncology, Shanti

Mukand Hospital, New Delhi, India, 2. Department of Medicine, Army

Hospital, Joshimath, Uttarakhand, India, 3. Department of Medicine,

Saket Hospital, Agra, Uttar Pradesh, India

Name of the participants: AP Dubey

Year of collaboration: 2020-21

#### **Original Article**

#### Daratumumab Plus Carfilzomib: An Optimistic Approach in Relapsed/ Refractory Multiple Myeloma

#### **Abstract**

Background: Although with the introduction of novel agents, clinical outcomes have significantly improved in patients of multiple myeloma (MM); however, nearly all relapse, requiring subsequent treatment. Patients who have been heavily treated for relapsed/refractory MM (RRMM) have limited options and poor survival outcomes. Carfilzomib plus daratumumab combination have been evaluated in a phase 1b study in patients of RRMM progressing after 1–3 lines of therapies including bortezomib and an immune-modulatory drug. However, data are lacking evaluating the efficacy of this combination in RRMM patients who have progressed or have suboptimal response on either of these drugs (carfilzomib or daratumumab). Methods: Prospective analysis of data of 19 RRMM patients who progressed after multiple lines of therapy (including bortezomib and lenalidomide/ pomalidomide) and had suboptimal response/stable/progressive disease after receiving carfilzomib or daratumumab based combination as last therapy. All patients received combination of carfilzomib plus daratumumab along with dexamethasone (DKd) after prior consent. Daratumumab (16 mg/kg IV) was administered weekly (days 1, 8, 15, and 22) during cycles 1 and 2, every 2 weeks (days 1 and 15) during cycles 3-6, and every 4 weeks thereafter. Carfilzomib was administered weekly on days 1, 8, and 15 of each 28-day cycle. Patients received an initial carfilzomib dose of 20 mg/m<sup>2</sup> on day 1,2; 27 mg/m<sup>2</sup> on day 8, 9, 15, 16 of cycle 1, which increased to 70 mg/m<sup>2</sup> on day 1, 8, 15 from cycle 2 onwards if deemed tolerable. Dexamethasone was given as fixed-dose of 40 mg weekly. Results: Eighteen of 19 patients (including 3 high risk cytogenetics) to DKd (CR-4, very good partial response-10, partial response-02). After median follow-up of 16 months, progression-free survival (PFS) was 95%. Median PFS was not reached. Three patients who were transplant eligible received high-dose chemotherapy followed by autologous stem-cell transplantation and achieved minimal residual disease negativity. The most frequent all grade side effects were hematological, which included neutropenia 30%, anemia 70%, and thrombocytopenia 42%. Most frequent non hematological side effects were nausea 40%, vomiting, cough, respiratory tract infections, asthenia, and loss of appetite. Conclusion: Carfilzomib plus daratumumab based combination in RRMM patients has shown promising results in phase Ib study, where patients with prior exposure to either of these drugs were excluded. Our data show similar or better response of this combination in patients who had progressive disease/stable disease/minimal response to either of carfilzomib or daratumumab. This combination can be a better option in heavily treated RRMM (with prior exposure to either of carfilzomib or daratumumab) producing deeper and durable responses. A larger study may be required to prove this benefit.

**Keywords:** Carfilzomib, daratumumab, multiple myeloma, relapsed/refractory

#### Introduction

846

Multiple myeloma (MM) is an incurable disease, accounting for 1% of all cancers and 15% of all hematological malignancies. It is characterized by recrudescing patterns of remissions and relapses warranting subsequent therapy. Though with the introduction of novel therapies, the outcome has dramatically improved in patients of MM, but the widespread use

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of lenalidomide early in course of disease either as a component of initial therapy or as maintenance emphasizes the need to explore more effective combinations among patients with relapsed/refractory MM (RRMM).<sup>[2]</sup>

Daratumumab and carfilzomib have got approval in many countries both as monotherapy as well as incorporating them individually with standard of care regimens, based on their rapid and durable responses in patients with RRMM. Both these drugs individually as monotherapy or

How to cite this article: Dubey AP, Khatri S, Maggo S, Singh NK, Sharma D. Daratumumab plus carfilzomib: An optimistic approach in relapsed/refractory multiple myeloma. Indian J Med Paediatr Oncol 2020;41:846-9.

#### AP Dubey<sup>1</sup>, Sameer Khatri<sup>2</sup>, Sachin Maggo<sup>3</sup>, Nilabh K Singh<sup>4</sup>, Durgesh Sharma<sup>5</sup>

Department of Medicine, Santosh Medical College, Ghaziabad, Uttar Pradesh, India, Department of Medical Oncology, Shanti Mukand Hospital, New Delhi, India, Department of Medicine, Army Hospital, Joshimath, Uttarakhand, India, Department of Medicine, Army Hospital, Tejpur, Assam, India, Department of Medicine, Saket Hospital, Agra, Uttar Pradesh, India

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Address for correspondence: Dr. AP Dubey, Department of Medicine, Santhosh Medical College, Ghaziabad, Uttar Pradesh,

E-mail: ambydubey@gmail.com



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Title of the Collaborative activity: Study of Carotid Intima Media

Thickness (CIMT) In Type 2 Diabetes Mellitus and Its Correlation with

Glycaemic Control and Inflammatory Marker HsCRP

Name of the collaborator: Dept. of Medicine, IGESI Hospital, Jhilmil,

New Delhi, India

Name of the participants: Ashok Kumar, Anupam Kumar Singh

Year of collaboration: 2020-21

International Journal of Medical Research Professionals P-ISSN: 2454-6356; E-ISSN: 2454-6364 DOI: 10.21276/ijmrp



### Study of Carotid Intima Media Thickness (CIMT) In Type 2 Diabetes Mellitus and Its Correlation with Glycaemic Control and Inflammatory Marker HsCRP

Ashok Kumar<sup>1</sup>, Abhishek Rathore<sup>2\*</sup>, Anupam Kumar Singh<sup>3</sup>

<sup>1</sup>Professor & Head, Dept. of Medicine, Santosh Medical College & Hospital, Ghaziabad, Uttar Pradesh, India. <sup>2</sup>Senior Resident, Dept. of Medicine, IGESI Hospital, Jhilmil, New Delhi, India.

<sup>3</sup>Assistant Professor, Dept. of Medicine, Santosh Medical College & Hospital, Ghaziabad, Uttar Pradesh, India.

#### **ABSTRACT**

**Background:** Carotid Intima Media Thickness (CIMT) and CRP (C Reactive Protein) are have been used for measuring Atherosclerotic Risk in Diabetics. However there is paucity of data regarding their importance in Statin Naïve Diabetics.

**Aim:** To study Correlation of CIMT with glycaemic control and hsCRP in Statin Naïve Diabetics.

Materials and Methods: 80 Cases (Patient suffering from type 2 Diabetes Mellitus) and 20 controls (non- diabetic health patients) presenting in outpatient department of a tertiary Hospital were included in this observational cross sectional observational study. Complete Blood Count, urine Routine and Microscopy, urine for microalbuminuria, fasting plasma glucose (FPG), postprandial plasma glucose (PPPG), glycated haemoglobin (HbA1C), lipid profile, renal function test, hs-CRP and CIMT were evaluated in each individual. Independent samples T-test was used to compare CIMT and hs-CRP both cases and controls. Test of proportion and chi-square test was used for association between categorical variables. Spearman's method was used to assess correlation between hsCRP and CIMT.

**Results:** 80 cases (Statin naïve and Non-smoker Diabetic patients and 20 healthy controls were included in this study. Average CIMT in cases was significantly higher in Diabetic cases than Control ( $0.66 \pm 0.14$  vs  $0.56 \pm 0.05$ , difference = 0.10 mm, 95% C.I. (0.1 - 0.17), p < 0.0001). HsCRP was

significantly correlated with average CIMT in Diabetic cases. (r=0.512, 95% C.I. 0.33-0.658, p<0.0001). Fasting Blood Sugar was correlated with average CIMT in Diabetic cases. (r=0.234, 95% C.I. 0.015-0.432, p=0.0366). Post Prandial Blood Sugar was also correlated with average CIMT (r=0.300, 95% C.I. 0.086-0.488, p=0.00677).

**Conclusion:** Cardiovascular risk factors like glycaemic control and inflammatory markers like hsCRP are significantly associated with CIMT even in non-smoking and statin naïve Diabetics.

**Keywords:** Carotid Intima Media Thickness (CIMT), Diabetes Mellitus, Glycaemic Control, HsCRP.

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#### INTRODUCTION

Diabetes is a metabolic disease whose incidence and prevalence has significantly increased in recent decades, mainly because of an increase in type 2 diabetes, which represents almost 90% of all cases of diabetes. There will be 300 million diabetic patients by 2025 as estimated by WHO (5.4% of the world population). It is an independent risk factor for atherosclerosis and resulting cardiovascular complications. <sup>2</sup>

Carotid intima-media thickness (IMT) is related to cardiovascular risk factors and diseases, and its measurement by ultrasound makes it possible to detect thickening in the initial phases of atherosclerosis.<sup>3,4</sup> For every 0.1-mm increase in carotid IMT, the relative risk of ischemic heart disease increases by 15% and that of cerebrovascular disease by 18%.<sup>5</sup>

In type 2 diabetes mellitus (DM2) patients, the CIMT is 0.13 mm greater than in the controls. This implies an increase in age of 10 years, a circumstance that is related to a 40% higher cardiovascular risk.<sup>6</sup> Major determinants of increased IMT among diabetic patients include obesity, dyslipidaemia and hyperinsulinemia, which constitute the cardinal features of insulin resistance syndrome.<sup>7</sup>

In healthy middle-aged adults, CIMT values between 0.6 and 0.7 mm have been considered normal, while CIMT of 1 mm or more has been associated with significant increased absolute risk of CHD  $^{\rm 8}$ 

In healthy Indian adults, the average and maximum CIMT values reported were 0.67 and 0.70 mm, respectively. High sensitivity

Title of the Collaborative activity: Pulmonary Function Test in

Patients with Type 2 Diabetes Mellitus & Its Correlation with

Anthropometry and Glycemic Control

Name of the collaborator: Lady Hardinge Medical College

Name of the participants: Ashok Kumar, Urvashi Khan, Ashish Kumar

Shukla, Siva Prakash

Year of collaboration: 2020-21

**Section: Medicine** 

#### **Original Article**

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#### Pulmonary Function Test in Patients with Type 2 Diabetes Mellitus & Its **Correlation with Anthropometry and Glycemic Control**

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#### **Abstract**

Background: Diabetes mellitus is a chronic disease with microvascular complications and affecting almost all organs in the body. Effect of diabetes on lung functions has been studied previously with variable results. This study was performed to see the lung functions in patients with type 2 DM and to assess the pattern of abnormality in lung functions. Aim & Objective: Our study aimed to evaluate pulmonary functions in patients with type 2 diabetes mellitus (T2DM) and to determine their correlations with anthropometric profile, glycaemic control, and diabetic microangiopathic complications. Subjects and Methods: 70 T2DM patients and 70 healthy control subjects were taken for the study. After taking an informed consent, all underwent screening with detailed history, anthropometry, blood sugar (fasting and post Prandial), glycosylated haemoglobin (HbA1C), renal profile, lipid profile and Pulmonary functions (spirometry). Statistical Analysis: Student's t-test was used to compare PFTs of diabetic and control groups. Frequencies were generated for categorical variables and compared using the chi square test. Results: There was significant reduction in all PFT parameters (PEFR (L/s), FEV1 %, FVC ) in diabetics as compared to controls. The FEV1/FVC% was higher in the diabetes group and there was a mixed restrictive and obstructive pattern of pulmonary dysfunction seen in diabetics.BMI was inversely related to PEFR, FEV1, and FVC. Age was inversely related to FEV1, and FVC. It was found that HbA1c was not significant for any ventilator (spirometric) index. Restrictive pattern rather than obstructive impairment of lung function is likely to be chronic complication of T2DM, the severity of which relates to longer duration of symptoms of diabetes, higher BMI, and advancing age. Conclusion: Spirometry is an easily available, non invasive screening tool to assess the lung functions and should be performed in patients with type 2 diabetes having microangiopathic complications.

Keywords: Diabetes Mellitus (DM), HbA1C, Pulmonary, Spirometry.

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Introduction

Diabetes mellitus is the most common metabolic disorder globally. It is accompanied by biochemical, morphological and functional abnormalities which may precipitate certain complications that affect neural, cardiovascular, renal systems, organs and tissues like skin, liver, collagen and elastic fibres.[1] The metabolic disorder is a risk factor precipitating microvascular pathologies leading to autonomic neuropathy, nephropathy, retinopathy. Recently, the pulmonary function in diabetes has also become a subject of interest.[2-4]

Pulmonary dysfunction has been reported in patients with diabetes .The respiratory diseases associated with diabetes may result in changes in pulmonary volumes, diffusion and elastic properties of lungs as well as the performance of respiratory muscles.<sup>[5]</sup> Ventilator function testing noninvasively quantifies physiological reserve in a large microvascular bed, and unlike myocardial and skeletal

muscle function, pulmonary indices can be measured despite limitations in physical fitness and can, therefore, provide a useful measure of progression of diabetic microangiopathy. The lungs have been proposed as a target organ for diabetic microangiopathy in type 1 and type 2 diabetes. Our study was designed to compare the pulmonary function in diabetics with non diabetics.

#### Subjects and Methods

After informed consent of 140 patients of either sex attending/admitted to outpatient Department (OPD)/ ward at Department of Medicine, Santosh Medical College, Ghaziabad were enrolled for the study.

70 subjects with DMT2 (group A) who satisfied the inclusion criteria were recruited, and 70 healthy volunteers were recruited as controls (group B). Both groups were matched with regards to age, gender, height, BMI, and race (Indians).

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Title of the Collaborative activity: Study of Gallbladder contractile

function by Ultrasonography in patients of type 2 Diabetes Mellitus and

it's correlation with HbA1c and Diabetic Neuropathy

Name of the collaborator: Department of Cardiology, VMMC &

Safdarjung Hospital, New Delhi.

Name of the participants: Ashok Kumar, Ashish Kumar Shukla

Year of collaboration: 2020-21

# Section: Medicine

## Study of Gallbladder contractile function by Ultrasonography in patients of type 2 Diabetes Mellitus and it's correlation with HbA1c and Diabetic Neuropathy

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#### **ABSTRACT**

Background: Type 2 diabetes mellitus is commonest endocrine disorder with a continuous rising prevalence and its complications. Diabetic neuropathy is the most common neurological complication of diabetes and prevalence has been reported from <5% to nearly 60% and even 100% if subclinical neuropathy is detected by electrophysiological studies. [1] Diabetic autonomic neuropathy gives rise to varied manifestations in the gastrointestinal tract i.e. gastropathies, nocturnal diarrhoea, oesophageal dysmotility, constipation and gallbladder dysfunction, being consequence of vagal neuropathy leading to reduced G.I. motility .Gall bladder is one of the commonly affected organs in chronic diabetics, most probably due to autonomic neuropathy which adversely affects gall bladder contractile function. Methods: This institution based case-control, cross sectional, observational study had been performed among 100 Cases (Patient suffering from Diabetes Mellitus type 2) and 50 controls (non-diabetic) will form the sample randomly selected from of Department of Medicine, Santosh Medical College & Hospital, Ghaziabad, UP. All patients and volunteers had undergone abdominal ultrasonography for any existing hepato-biliary pathology and to measure fasting and post fatty meal gall bladder volume and HbA1c and FBS levels. Results: It was seen that the FGBV (Fasting Gall bladder volume) was significantly higher in diabetic patients with neuropathy than in Non-diabetic.. The mean percentage gallbladder contraction was 20.62+12.86 % in diabetics and in controls it was 25.89+12.53%. The incidence of autonomic neuropathy was studied using Ewing and Clarke criteria, 55 cases of the study group were found to have autonomic neuropathy. In the control group there was no case of autonomic neuropathy. The statistical analysis showed impaired gallbladder emptying in diabetics with autonomic neuropathy. Gall bladder dysfunction shows moderate positive correlation with HbA1c levels. Conclusion: This study concludes that there are high incidence of gall bladder contractile dysfunction in diabetic patients as compared to healthy controls. Further gall bladder dysfunction shows moderate positive correlation with HbA1c levels. Also we conclude that contractile dysfunction is more severe in Diabetics with cardiac autonomic neuropathy. Therefore it is suggested that diabetic patients with autonomic dysfunction should be carefully evaluated for gall bladder dysfunction by non-invasive method like ultrasonography so as to prevent future complication related to gall bladder like cholecystomegaly, cholelithiasis, cholecystitis etc.

Keywords: Fasting gall bladder volume, Ultrasonography, Autonomic neuropathy, Ewing and Clarke criteria.

#### **INTRODUCTION**

Diabetic neuropathy is the most common neurological complication of diabetes and prevalence has been reported from <5% to nearly 60% and even 100% if subclinical neuropathy is detected by electrophysiological studies. Diabetic autonomic neuropathy gives rise to varied manifestations in the gastrointestinal tract i.e. gastropathies, nocturnal diarrhoea, oesophageal

#### Name & Address of Corresponding Author

Dr. Ashish Kumar Shukla, Associate Professor, Department of Radiology, Santosh Medical College Hospital, Ghaziahad dysmotility, constipation and gallbladder dysfunction, being consequence of vagal neuropathy leading to reduced G.I. Motility. Gallbladder involvement in diabetic autonomic neuropathy is in the form of high incidence of gall bladder stones and a significant increase in gall bladder volume, decreased ejection fraction, with poor concentration and lack of symptoms of gallbladder disease.<sup>[2-3]</sup>

Gall bladder emptying is controlled by both, sympathetic and parasympathetic nervous system where parasympathetic system controls contractility and sympathetic system controls relaxation. Reduced motility of gall bladder is attributed to dysfunction of autonomic nervous system dysfunction and defective response to gastrointestinal hormones e.g. cholecystokinin, motilin and secretin.

Title of the Collaborative activity: One Fast Hugs Bid COVID: COVID

Care Bundle Modified Mnemonic to Facilitate COVID 19 Critical Care

Medicine

Name of the collaborator: Department of Anaesthesiology & Critical

Care. Shri Ram Singh Hospital, Noid, UP

Name of the participants: Anil Kumar, Manish Sabharwal, Ashok Kumar

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#### One Fast Hugs Bid COVID: COVID Care Bundle Modified Mnemonic to Facilitate COVID 19 Critical Care Medicine

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#### Introduction

General care of patients admitted in critical care units entails regular checking and implementation of some basic care principles for all patients. Having a mnemonic to regularise and ease the check has been shown to consistently improve care practices and outcomes in patients. The most commonly used mnemonic to this effect was described and published by JL Vincent as the FAST HUG acronym. (1) there have been several additions and modifications to this one, to suit different subgroup of patients. WR Vincent and Hatton modified it to FAST HUGS BID<sup>(2)</sup>. For issues related to drugs, it has been modified to FAST HUG MAIDENS by Mabasa VH et al<sup>(3)</sup>. In surgical icu patients it was used to reduce the incidence of VAP by Papadimos et al<sup>(4)</sup>. FAST HUG BID contents has been modified to facilitate

nutritional support to icu patients by Monares Zepeda and Galindo Martin<sup>(5)</sup>. Recently the same mnemonic is used to address the post operative issues in patients of surgical icu by Abhijit et al in 2017<sup>(6)</sup>.

The COVID pandemic has been an unprecedented challenge to healthcare systems worldwide, particularly bringing into sharp focus critical care medicine and issues of assisted respiration, oxygen support, mechanical ventilation, infection control practices and occupational safety. Never has standards of ICU care provided being under such wide and public scrutiny.

The challenges posed by this novel coronavirus has been magnified by the complex nature of the disease process, limited pharmacological options and need for continuous fluidity in assessment and treatment protocols.

**S. No: 120** Title of the Collaborative activity: Co-relation between cervicothoracic angle and neck pain in adults Name of the collaborator: Dr. Lal Path Labs, Ghaziabad, Uttar Pradesh, India School of Medical Sciences & Research, Sharda University, Greater Noida, Uttar Pradesh, India Name of the participants: Amit Dwivedi, Vikram Dagar

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#### **Original Research Article**

#### Co-relation between cervicothoracic angle and neck pain in adults

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Neck pain
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#### ABSTRACT

**Introduction:** Neck pain is the fourth most common cause of disability after lower back pain, depression, and joint pain. Cervical sagittal balance is as crucial as pelvic sagittal alignment and is related to the concept of T1 alignment.

**Materials and Methods:** An observational cross sectional study was conducted on 235 Patients diagnosed as neck pain and treated at our institute between August 2017 to July 2019 with age between 20-80 years with neck pain complaints and on medication were included in this study. Pain and functional improvements were assessed using visual analogue scale (VAS) and neck disability index (NDI). Standing lateral view and standing swimmers lateral view of cervical spine radiographs were taken and studied for evaluating cervicothoracic parameters T1 slope and SVA (Saggital Vertical Axis) C2-7, following neck pain and compared with normal ranges. Variations of these criteria have been reported along with the scores of the questionnaire. Statistical analysis was carried out using the edition 21.0 of the Statistical Package for Social Sciences (SPSS).

**Results:** After analysis, it was found that the average T1 slope was 27.82 + 14.33, the average male T1 slope was 26.74 + 14.21 and the average female T1 slope was 28.56 + 14.42. According to Sang et al average T1 slope is 25.7.5 + 6.4 which was taken as a reference for comparison with the asymptomatic population, our study had an increased value but was not significant.

**Conclusions:** The pain in the neck increases with age. It is more prevalent in females. Study shows an increase in neck pain with increasing age due to degenerative changes in the T1 slope, SVA C2-C7. There is no significant correlation with cervical and neck pain or disability but a good relationship between the two. There was no substantial difference in cervical curve between symptomatic and asymptomatic patients.

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#### 1. Introduction

Neck pain is the fourth most common cause of disability after lower back pain, depression, and joint pain. <sup>1</sup> Simple conditions that are prone to accumulation such as mechanical stress, lack of muscle strength, office computer jobs, non-ergonomic working environments, and long working hours result in neck pain being more frequently seen in middle age. <sup>2</sup>

Cervical vertebral X-ray is the most common diagnostic tool used in this circumstance.<sup>3,4</sup> Cervical sagittal balance

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is as crucial as pelvic sagittal alignment and is related to the concept of T1 alignment.<sup>5</sup>

Due to a lack of clear consensus on the relationship between cervico-thoracic parameters and neck pain in the literature, we aimed to determine the various cervical thoracic junction parameters of our patients with radiographs due to better affordability. The present study was plan with aimed to examine whether the sagittal profile of the cervicothoracic spine shows any association with the presence and severity of neck pain in the adult population.

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Title of the Collaborative activity: Namaste: The Traditional Indian

Way of Greeting Goes Global during Coronavirus Disease (COVID-19)

**Pandemic** 

Name of the collaborator: Medicine and Life Sciences, Springer Nature,

New Delhi,

Department of Anatomy, Kasturba Medical College, Mangalore, MAHE,

Karnataka, India

Name of the participants: Rashi Singh

Year of collaboration: 2020-21

#### **Editorial**



### Namaste: The Traditional Indian Way of Greeting Goes Global during Coronavirus Disease (COVID-19) Pandemic

*Namaste* is an expression of goodwill and welcome to each other. There are various ways of greetings in different countries and cultures; however, the common one's are *Namaste*, handshake, and bowing forward.

The *Namaste* is a customary Hindu greeting in the Indian subcontinent, Southeast Asia, and Indian Diaspora, worldwide.<sup>[1]</sup>

Although this way of greeting is in existence since the ancient Vedic times, recently it grabbed the attention of the whole world due to rampant spread of coronavirus disease by physical contact, leading to huge toll of deaths across the geographies.

The *Namaste* is spoken with a slight bow of head and hands pressed together with palms touching and fingers pointing upwards and thumbs facing towards the chest of the person greeting, as in worship pose [Figure 1].

The other person also responds in the same fashion. The literal meaning of term *Namaste* is "I bow to the divine in you". Thus, it is an attempt to unite the spiritual oneness among two people.

Since in this form of greeting, there is no physical contact. It reduces the chance of infection which could otherwise spread in the hospital and community environment. There is enough scientific evidence that microorganisms spread through the hands of patients, their relatives, and healthcare workers.<sup>[2]</sup>

The WHO had advised that hygiene is the first pillar of safety to patients.<sup>[2]</sup> It had been noted that hands get frequently contaminated with various microorganisms such as fecal bugs due to improper cleaning and nasal and oral

Figure 1: "Namaste pose" - the traditional Indian way of greeting

droplets containing pathogens (bacteria and viruses) due to sneezing and coughing; further infection from hands is transferred to the door knobs, tables, and other surfaces you touch.

In many countries such as the United States of America, European countries, Russia, and Nigeria, handshake is the preferred way for greeting other people. During handshake, one clasps the hand of a person to be greeted, often giving a brief but firm up and down shakes [Figure 2].

Since during handshake, there is physical contact when two persons greet each other. This makes them prone to spread the infection among each other, which may lead to epidemic and even pandemic in the community. However, in the present era of emergence and re-emergence of various viruses, it is time to rethink about the form and manner of greeting so that unnecessary physical contact could be avoided. This along with regular handwashing with soap and water will play a great role in preventing the spread of infection in hospital and community settings.[3] Similarly, bowing forward to greet a person with some distance which is widely practiced by Japanese, Chinese, Tibetans, Koreans, Burmese, Indonesians, Vietnamese, Cambodians, and other descendants of yellow race is another foolproof way to maintain social distance and prevent spread of infection by physical contact.

The guidelines of the WHO to control the swine flu, influenza (by  $\rm H_1N_1$  virus) more or less pandemic in 2010 also include hand hygiene. [4]

Recently, due to rampant spread of the coronavirus (COVID-19) and huge toll of deaths, it caused across the geographies. Many world leaders felt that by shaking the hands with people who carry the microbes of coronavirus on their hands is a sure way of contacting corona infection.



Figure 2: "Handshake" - the traditional Western way of greeting

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Title of the Collaborative activity: Nervi Terminalis ("0" Pair of Cranial
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Name of the collaborator: Medicine and Life Sciences, Springer Nature,
New delhi,
Department of Anatomy, KMC Manglore, MAHE, Manipal, Karnataka, India
Name of the participants: Rashi Singh
Year of collaboration: 2020-21
Nature of the activity: Research

#### Trends in surgery and survival for T1-T2 male breast cancer: A study from the National Cancer Database.



Authors: Rashi Singh, Lifen Cao, Anuja L. Sarode, Michael Kharouta, Robert Shenk and Megan E. Miller



From: The American Journal of Surgery (Vol. 225, Issue

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Document Type: Report: Brief article Length: 385 words





















#### Abstract:

Keywords Male breast cancer; Early stage breast cancer; Breast surgery; Axillary surgery; Survival outcomes; Gender disparities; Treatment trends Highlights \* Men continue to undergo more extensive surgery for T1-T2 breast cancer than women. \* Unilateral mastectomy rates for men have increased from 2004 to 2016. \* Males had inferior survival after adjustment for patient, tumor, and treatment factors. \* Partial mastectomy was associated with a 42% reduction in mortality risk for men. \* Surgical de-escalation could be considered in MBC and may improve outcomes. Abstract Background Despite evidence that early-stage male breast cancer (MBC) can be treated the same as in females, we hypothesized that men undergo more extensive surgery. Methods Patients with clinical T1-2 breast cancer were identified in the National Cancer Database 2004--2016. Trends in surgery type and overall survival were compared between sexes. Results Of 9,782 males and 1,078,105 females, most were cN0 with AJCC stage I/II disease. Unilateral mastectomy was most common in men (67.1% vs. 24.1%, p Conclusions De-escalation of surgery could be considered for MBC to improve survival and align with current standards of care. Abbreviations MBC, male breast cancer; BCS, breast-conserving surgery; MRM, modified radical mastectomy; SLNB, sentinel lymph node biopsy; ALND, axillary lymph node dissection Author Affiliation: (a) Division of Surgical Oncology, Department of Surgery, University Hospitals Cleveland Medical Center, Case Western Reserve University School of Medicine, Cleveland, OH, USA (b) University Hospitals Research in Surgical Outcomes and Effectiveness (UH-RISES), USA (c) Department of Radiation Oncology, University Hospitals Cleveland Medical Center, Case Western Reserve University School of Medicine, Cleveland, OH, USA\* Corresponding author. Department of Surgery, University Hospitals Cleveland Medical Center, Case Western Reserve University School of Medicine, 11100 Euclid Avenue, Lakeside 7009, Cleveland, OH, 44106-5047, USA. Article History: Received 17 April 2022; Revised 14 August 2022; Accepted 20 September 2022 Byline: Rashi Singh (a,b), Lifen Cao (a,b), Anuja L. Sarode (a,b), Michael Kharouta (c), Robert Shenk (a,b), Megan E. Miller [Megan.Miller6@UHhospitals.org] (a,b,\*)

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- Mortality
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- Cancer research
- Breast cancer

Title of the Collaborative activity: Comparative Evaluation of

Antifungal Efficacy of Five Root Canal Sealers against Clinical Isolates of

Candida albicans: A Microbiological Study

Name of the collaborator: Department of Pedodontics, Medeor

Hospital, New Delhi, India,

Department of Prosthodontics, AIMST University, Kedah, Malaysia

Name of the participants: Binita Srivastava, Nidhi Gupta, Rashi Singh,

Satyavir Sing

Year of collaboration: 2020-21

# **ORIGINAL ARTICLE**

# Comparative Evaluation of Antifungal Efficacy of Five Root Canal Sealers against Clinical Isolates of *Candida albicans*: A Microbiological Study

Sameep Singh<sup>1</sup>, Binita Srivastava<sup>2</sup>, Khyati Gupta<sup>3</sup>, Nidhi Gupta<sup>4</sup>, Rashi Singh<sup>5</sup>, Satyavir Singh<sup>6</sup>

#### **A**BSTRACT

Aim and objective: The aim of this study was to evaluate and compare the antifungal efficacy of MTA Fillapex, Metapex, zinc oxide eugenol cement, Endomethasone, and Endoflas against *Candida albicans*.

Materials and methods: Root canal exudates of 30 patients were tested against MTA Fillapex (Angelus), Metapex (BioMed), zinc oxide eugenol (Deepak Enterprise), Endomethasone (Septodont), Endoflas FS (Sanlor Laboratories), MTA (Angelus) (positive control), and glycerine (negative control). Children with failed endodontic cases were included in the study. Tube dilution and agar diffusion methods were used to check the antifungal efficacy of the root canal sealers. In tube dilution method, 24-well culture plates containing freshly mixed material along with Candida albicans were used. Wells containing MTA (Angelus) along with Sabouraud dextrose agar and Candida albicans served as positive control while glycerine along with Sabouraud dextrose agar and Candida albicans served as negative control. All plates were incubated at 37°C for 24 hours. Growth of the fungi was monitored after 24 hours by the presence of the turbidity. The samples were recultured to test the experimental material using agar well diffusion method, and the Petri plates were incubated for 24 hours and 72 hours. Zone of inhibition was measured after respective time period. Paired t test was used for the data analysis.

**Results:** It was seen in tube dilution method Endomethasone showed least turbidity while maximum was shown by Metapex; similar results were seen in case of agar well diffusion method in which largest zone of inhibition was shown by Endomethasone while smallest was by Metapex.

Conclusion: It was concluded that Endomethasone showed maximum efficacy against Candida albicans as compared to Metapex.

**Keywords:** Agar-well diffusion, *Candida albicans*, Endomethasone, Metapex, MTA Fillapex, Root canal sealers, Tube dilution test, Zinc oxide eugenol. *International Journal of Clinical Pediatric Dentistry* (2020): 10.5005/jp-journals-10005-1718

# Introduction

Microorganisms are the main reason for occurrence of pulpal/periapical diseases. The microbial environment of an infected root canal is a habitat for various bacteria, spirochetes and fungi. Reminance of these microorganisms after primary root canal treatment may lead to treatment failure. It has also been seen that fungus plays a major role in the occurrence of various endodontic diseases, *Candida albicans* being the most common fungal species found in oral environment.

In most instances of primary root canal infection, the prevalence of the presence of candidal species is not routinely seen, as compared to secondary or persistent infection which has 20% existence in the canal. Various *in vitro* studies have shown the presence of yeast cells and hyphae within the dentinal tubules leading to a possible pathway for *Candida albicans* strains into the tubules. *Candida albicans* has the ability to penetrate the tubular structure of dentine and resides within the root canal system.

In case of a failed endodontic procedure, specific fungal species grow as a result of intercommunication between certain bacteria due to changed intracanal oxygen pressure and environment.<sup>1</sup> It has also been shown that reduction in number of certain bacteria in root canal system may lead to excessive fungal growth with low nutrient requirement.<sup>1</sup>

Various intracanal therapeutic drugs have been recommended for use in pediatric dentistry, in order to control the infection. <sup>5</sup> However, most of the available root-end fillers may not provide a completely hermetic seal. Therefore, their antibacterial and

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antifungal properties play a significant role in the prevention of further periradicular contamination and in reduction of bacterial/fungal count.<sup>1</sup>

Antibacterial properties of root canal sealers help to prevent recolonization and multiplication of microbial flora in the root canal system along with neutralization of the toxic products.

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Name of the collaborator: Private Practice, New Delhi, Terna Dental
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# Posturodontics in dentistry – A review

# Mayank Gupta<sup>1</sup>, Kriti Madhok<sup>2</sup>, Rohit Kulshrestha<sup>3\*</sup>, Abhishek Singh<sup>4</sup>, Megha Chowdhari<sup>5</sup>

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#### Abstract

Nowadays many dental professionals have been complaining of severe pain in the lower back and neck region. This is mainly due to the improper chair side positioning and stance. Mostly this measure is taken to achieve the direct vision while working on the patients. Cervical Spondylosis, slip disc, muscle injuries are few of the conditions which are seen if improper chair side posture is maintained for a long time. Our working posture needs to be ideal while working for long hours as this will help in the prevention of any injuries seen due to our occupation. Joint stiffness of the hands, carpal tunnel syndrome and blurred vision are some other occupational hazards associated with dentists. This article is a comprehensive review that mentions the hazardous effects of improper chair side posture and suggests some exercises to avoid injury in the long run.

Keywords: Posturodontics, Ergonomics, Musculoskeletal disorders.

#### Introduction

Musculoskeletal disorders have become increasingly common worldwide in dentistry during the past decades. In the dental profession, dentists and dental hygienists spend their workdays in an uncomfortable, static position performing extremely precise procedures in a 2" x 2 ½" workspace-the patient's mouth. The dental profession demands high precision because there is no room for error, a steady hand and an awkward posture is assumed during the procedures. However, maintaining the steady hand and posture comes at the cost of the back, neck and shoulder area of the dentist. The neck is flexed forward and rotated for long periods which creates high static loads leading to muscle tension in the neck, upper back, and shoulders.

Reasons for early retirement among dentists include:

- 1. Musculoskeletal disorders (MSDs) (29.5%)
- 2. Cardiovascular disease (21.2%)
- 3. Neurotic symptoms (16.5%)
- 4. Tumors (7.6%)
- 5. Diseases of the nervous system (6.1%) Source: Burke et al., 1997 <sup>2</sup>

In dentistry, overstrained and awkward back postures are responsible for back pain, repetitiveness for neck and shoulder disorders and psychosocial stressors for back, neck and shoulder complaints.<sup>3</sup> A slight hand neuropathy has also been reportedly caused by exposure to high-frequency vibration tools.<sup>4,5</sup> Dentists and dental hygienists are at a greater risk of work-related musculoskeletal disorders (MSDs) than is the general population. These disorders can result in pain and dysfunction of the neck, back, and hands and fingers. It has been estimated that work-related musculoskeletal injuries occur in 54% to 93% of dental professionals, with the most frequent injuries occurring in the spine (neck and back), shoulders, elbows, and hands.

Many work-related MSDs are cumulative, building up over the years or decades. A poor ergonomic choice may not have an impact today or even a few years down the road. But over a lifetime, it could result in pain or injury, affecting the productivity and earning potential of the dental professionals. Good habits, adopted early, are your best strategy when it comes to posturedontics (ergonomics). This update reviews the various causes, signs, symptoms of the musculoskeletal disorder and their preventive measures and various exercises to work with comfort, efficiency, and ease.<sup>6</sup>

# Symptoms of Musculoskeletal disorders (MSDs)

- 1. Excessive fatigue in the shoulders and neck
- 2. Tingling, burning, or other pain in arms
- 3. A weak grip, cramping of hands
- 4. Numbness in fingers and hands
- 5. Clumsiness and dropping of objects
- 6. Hypersensitivity in hands and fingers

### Signs of MSDs

- 1. Decreased range of motion
- 2. Loss of normal sensation
- 3. Decreased grip strength
- 4. Loss of normal movement
- 5. Loss of co-ordination

# Importance of posture

The elements of an improper workstation setup force the dental practitioner to assume many harmful postures when performing various procedures on the patient. These positions put pressure on nerves and blood vessels, cause excessive strain on muscles, decrease circulation and cause wear and tear on the joint structures.

# Some improper postures that dentists take

- 1. Working with the neck in flexion and tilted to one side.
- 2. Shoulders elevated.
- 3. Side bending to left or right.

Title of the Collaborative activity: Prevalence, knowledge, attitude

and nicotine dependence among ESI-insured populations of Delhi NCR

region: Institutional study

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Year of collaboration: 2020-21

# **Original Article**

# Prevalence, knowledge, attitude and nicotine dependence among ESI-insured populations of Delhi NCR region: Institutional study

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#### **ABSTRACT**

Aim: To assess the prevalence of tobacco consumption among the ESI-insured patients. The study also assessed the knowledge, practice, and attitude among industrial workers as well as nicotine dependence with different forms of tobacco products consumed. Materials and Methods: A cross-sectional study was conducted among industrial workers from various industries (small and large scale) insured under the employee state insurance corporation scheme. The study was conducted for 3 months included 500 workers of which 470 were males and 30 were females. A predesigned, pretested, and structured interviewed administered questionnaire was used to collect the data on sociodemographic factors, reasons for tobacco consumed, and level of dependencies among industrial workers. Questionnaire also included questions related to awareness regarding health hazards and lesion present in the oral cavity as a result of tobacco consumption. Fegarstrom scale was used to access nicotine dependency level. A Hindi translated version of Fegarstrom test for Nicotine dependence in the questionnaire was used which included six standard questions for both smokeless and smoked form. Result: Majority of both males and females consumed tobacco in smokeless (58.8%) form. Out of which 92.85% in males and 7.15% in females followed by the smoke (28.8%) form. 93.04% in males and (7%) in females (79.86%) of the tobacco users in our study were aware that consuming tobacco causes health related problems. 38.6% of the users have moderate dependency in both smoke and smokeless form. Seventy six percent of the consumers feel that they didn't have any changes in the mouth by consuming tobacco and thus never thought of quitting tobacco. Conclusion: Tobacco consumption among the ESI-insured patients is high. Execution of tobacco cessation programs are required to curb this trend.

Keywords: Fagerstrom test, nicotine dependence, prevalence, smokeless tobacco, WHO

# Introduction

Tobacco is the one of the leading cause of preventable death worldwide. In developing countries like India about half of the

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population of tobacco user die from complications of tobacco. Since few years, the vices of tobacco consumption have come to the forefront in various populations across the world.<sup>[1]</sup> Tobacco smoke is estimated to contain over 4,000 compounds, many of which are pharmacological active, toxic, mutagenic, and carcinogenic. The active content of tobacco "Nicotine" leads to physical and psychological dependence comparable to the dependence on Heroin.<sup>[2]</sup> According to Global Adult

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Title of the Collaborative activity: Case report on dentigerous cyst in

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and Microbiology, Santosh Dental College, Ghaziabad, Uttar Pradesh,

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Name of the participants: Sanjeev Tomar

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# Case Report

# Case report on dentigerous cyst in relation to permanent mandibular lateral incisor: A rare entity

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# ARTICLE INFO

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#### ABSTRACT

Dentigerous cyst is normally associated with crown of an unerupted or developing tooth and is one of the most common odontogenic cyst. It is more commonly seen in association with mandibular third molar and maxillary canine. Dentigerous cyst generally occurs in second or third decades of life. Its association with incisors are rare entity. Dentigerous cyst usually includes a tooth which can not complete the eruption process and involves the crown by the fluid accumulation in between the layers of enamel organ. The treatment modalities for dentigerous cyst are marsupialization or enucleation and depends upon the involved structures

Here we report a case of dentigerous cyst associated with permanent mandibular lateral incisor. It was enucleated along with the lingually erupted lateral incisor. There was no recurrence observed after one year follow up.

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# 1. Introduction

Dentigerous cyst is commonest developmental odontogenic cyst and has a incidence rate between 20% and 24% among all the jaw cysts. <sup>1</sup> It is associated with the crowns of unerupted tooth or developing tooth bud, and is normally attached to the cervical margins of affected tooth. If the size of the cyst is larger than 2 cm in diameter then it may cause swelling, tooth mobility, tooth displacement and sensitivity. <sup>2</sup> Although permanent third molars are generally associated with this cyst but association with mandibular incisors are rarely seen. Predilection for males are reported and generally occurred in second or third decade of life. <sup>3</sup>

Dentigerous cyst are of two types: developmental and inflammatory. Developmental type is derived from reduced enamel epithelium, by accumulation of fluid between reduced enamel epithelium and enamel. Inflammatory type is developed, as a result from periapical infection in its Predecessor deciduous tooth, which spread upto permanent

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tooth-bud. Dentigerous cysts are always associated with a missing tooth or failure of tooth eruption, and may be asymptomatic until they become enlarged enough.

# 2. Case Report

A 28 year old male patient presented with painless swelling in mandibular right anterior region for last six months with a chief complaint of tooth present on lingual region. On general examination, patient was apparently well and did not give history of any systemic disease. On extraoral examination, no deformity is seen. On intra-oral examination, Mandibular right lateral incisor was present lingually. On palpation, a swelling was felt in relation to this tooth (Figure 1).

We advised a panoramic radiograph, which revealed a single, unilocular, well-defined, radiolucent area enclosing the mandibular right lateral incisor (Figure 2).

CBCT was also performed for further evaluation of the content and the extent of the cyst and it showed a well-defined, expansile, radiolucency noted in anterior

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Title of the Collaborative activity: To Assess Cases of Trigeminal

Neuralgia

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Year of collaboration: 2020-21

# To Assess Cases of Trigeminal Neuralgia

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# Abstract

**Background:** Trigeminal neuralgia (TN) is as a chronic, debilitating condition resulting in brief and intense episodes of facial pain. The present study was conducted to assess cases of trigeminal neuralgia.

**Materials and Method:** The present study was conducted on 74 patients of both gender diagnosed with trigeminal neuralgia. Age of onset, gender, site of involvement, and clinical presentations were recorded.

Results: Out of 74 patients, males were 40 and females were 34. Ophthalmic branch was involved in 5, maxillary in 32, mandibular in 27 and both maxillary+ mandibular in 10 cases. The difference was significant (P < 0.05). Left side was involved in 25, right in 40 and both side in 9 cases. The difference was significant (P < 0.05).

**Conclusion:** Authors found that trigeminal neuralgia was mostly noticed in males and maxillary branch and right side cases were prevalent.

Keywords: Trigeminal Neuralgia, Maxillary, Mandibular.

# Introduction

Trigeminal neuralgia (TN) is as a chronic, debilitating condition resulting in brief and intense episodes of facial pain in the distribution of one or more branches of the fifth cranial nerve. The episodes of facial pain are sporadic, sudden, and often like "electric shocks" lasting from a few seconds to several minutes. Etiology may be either idiopathic or secondary to intracranial lesions such as tumor, infarction, and multiple sclerosis. Among neuropathic pains, TN has a peculiar profile. <sup>1</sup>

Trigeminal neuralgia is rare and statistical data regarding it is limited. The estimated annual incidence of

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Associate Professor, Department of Public health Dentistry, School of Dental Sciences, Sharda University e-mail: respublication2000@gmail.com trigeminal neuralgia is 12.6 per 100000 persons per year and its incidence increases with age.<sup>2</sup> Although peak onset occurs between age 50 and 70 years, the disorder can also occur in children. Early literature suggested a strong preponderance in women; however, current data indicate that only approximately 60% of patients with trigeminal neuralgia are female. The annual incidence for women is approximately 5.9 cases per 100,000 women; for men, it is approximately 3.4 cases per 100,000 men.<sup>3</sup>

Spontaneous remissions are not unusual. With the exception of a few identified organic causes, its etiology for long remained uncertain, so it was called "idiopathic" neuralgia. Even now with the sound hypothesis of neurovascular conflict, the pathophysiology of this disease still has obscure corners. The International Headache Society differentiates between classical TN and atypical facial pain.<sup>4</sup> The present study was conducted to assess cases of trigeminal neuralgia.

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# Irritational Fibroma of Lower Buccal Mucosa: A Case Report

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Type of Publication: Case Report

**Conflicts of Interest:** Nil

# **Abstract**

Traumatic or irritational fbroma is a general benign exophytic tumor or neoplasm of fibrous connective tissue origin that can be considered a reactionary connective tissue hyperplasia in response to trauma and irritation. They are clinically marked by solid well-demarcated rounded, sessile, or pedunculated growths covered by normal mucosa and are a relatively uncommon lesion. Local trauma can generate ulceration of these lesions. They are usually seen on the buccal mucosa but can also occur at any intra-oral site. These lesions are more common in adults and can befall at any age. A malignant transformation in such fbroma or lesion is uncommon. Simple, complete excision and removal of the cause of irritation

are the preferred treatment. It is the most common type of lesion and the treatment of choice is complete surgical excision.

**Keywords:** Fibroma, Lower Mucosa, Soft Tissue, Irritational Fibroma. Benign Tumour

# Introduction

A general soft tissue reaction to strain from tooth/teeth or dental prostheses was first reported in 1846 as fibrous polyp and polypus. It is currently also known as Irritation fibroma, Traumatic fibroma, Peripheral fibroma, Focal fibrous hyperplasia, Inflammatory fibrous hyperplasia, Fibrous lump, or Fibroepithelial polyp. The fibroma, is the common oral fibrous tumor resembling growth. Traumatic fibroma is a local reactive growth and proliferation of mucosa of the oral cavity in retort to injury or irritation.

Title of the Collaborative activity: Musculoskeletal Pain and its

Association with School Bag Weight and Diet Intake: A Cross-Sectional

Study among School-Going Adolescents in Delhi

Name of the collaborator: Department of Rheumatology, All India

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4. Ravi Kant Arya, 5. Jagmohan Singh Dhakar

Year of collaboration: 2020-21

# Musculoskeletal Pain and its Association with School Bag Weight and Diet Intake: A Cross-Sectional Study among School-Going Adolescents in Delhi

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# **Abstract**

**Background:** Prevalence of musculoskeletal pain is increasing in adolescent school students. This study conducted to assess the role of heavy bag packs and faulty dietary habits in the causation of musculoskeletal pain.

**Methods:** The study was conducted in school going 1600 adolescent school students of Delhi, India from April 2018 to March 2019. The demographic profile, symptoms of pain in neck, shoulder and back was recorded through a validated questionnaire and the simplified dietary gap assessment tool was applied to assess the dietary habits. The weight of the school bag was measured. The prevalence of musculoskeletal pain was 56.8% among adolescent school students. The musculoskeletal pain was significantly higher in those students who were carrying bag weight 10-15% of their body weight and was two times higher than those students who were carrying bag weight less than 10% of their body weight. Students having dietary gap score of less than 5 out of 10 were more prevalent to get musculoskeletal pain than those having dietary score more than 8.

**Conclusions:** Carrying of heavy school bag weight and gap in the diet among the school going adolescents can lead to musculoskeletal pain.

Key-words: Musculoskeletal, Pain, Adolescent, Bag, Diet, School

# Introduction

In childhood, pain is a common presentation which becomes disabling when it persists in adolescent stage.<sup>1</sup> Among the types of pains, around 64% are of musculoskeletal origin.<sup>2</sup> The symptoms of pain in school-going adolescents are more common in girls than boys<sup>3</sup> and can be attributed to faulty and stationary

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Dean, Santosh Medical College & Hospital Ghaziabad, Uttar Pradesh E-mail: gajendrakgupta@gmail.com postures<sup>4</sup>, improper classroom furniture<sup>4</sup> and excessive school bags load affecting the spine.<sup>5</sup>

Heavy schoolbags are a potential risk for musculoskeletal problems among adolescents.<sup>6</sup> School bags heavier than 10% of one's own body weight may result in back and shoulder pains<sup>7</sup>, can affect the curvature of lumbar and sacral spine<sup>8</sup> increases musculoskeletal injury risk and affects cardiopulmonary functions.<sup>9</sup>

Poorer general health is also associated with back pain in around 74.4% bag pack user adolescents. <sup>10</sup> The adolescents continue to have unhealthy foods because of the gap in knowledge regarding the unhealthy food ill effects and lack of time. <sup>11</sup>

Title of the Collaborative activity: Prevalence of parasitic infection

and comparison of different types of concentration techniques

Name of the collaborator: Dept. of Microbiology, Shri Ram Murti

Smarak Medical College, Bareilly, Uttar Pradesh, India

Name of the participants: Manisha Patel

Year of collaboration: 2020-21



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# **Original Research Article**

# Prevalence of parasitic infection and comparison of different types of concentration techniques

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#### ABSTRACT

**Background**: The intestinal parasitic infection is the major problem in the developing countries. The prevalence depends on not only the geographical location but also various socioeconomic factors such as climate, hygiene and age.

**Material and Methods**: A cross sectional study was conducted at Santosh Medical College, Ghaziabad during Jan. 2019 to June 2019. Total 200 stool samples were collected and each was examined by direct wet mount (iodine & saline mount) and concentration techniques such as simple salt flotation and formal ether concentration.

**Results:** In the present study the prevalence of the intestinal parasitic infection was found 34%. The most common parasite was found to be Entamoeba histolytica, with the prevalence rate of 57.35%, followed by Giardia lamblia 39.71%. A male predominance was noted 37.70% over the female 28.20%. The highest prevalence of parasitic infection was found in the age group between 21-30 years of age 42.85% followed by in age group 31-40.

**Conclusion**: In this study it was concluded that the formal ether sedimentation technique shown a high sensitivity for the parasite detection in comparison to the normal saline wet mount and salt floatation technique.

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# 1. Introduction

Parasitic infections are a major public health problem globally; especially in the developing countries. <sup>1</sup> The parasitic infection, prevalence varies with the level of sanitation and is generally higher in the tropics and subtropics in comparison to temperate climates. <sup>2,3</sup>

It is estimated that 3.5 billion peoples are affected worldwide, and that 450 million are ill as a result of these parasitic infections, the majority being suffered are children. Recent studies suggest that even moderate intensity of infection may have adverse effects on growth, iron deficiency anemia and cognitive function, practically for children of school age. 4,5 Intestinal parasitic infections causes diarrhea, dysentery, weight loss, malnutrition, anemia,

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abdominal pain, and other gastrointestinal ailments. Chronic parasitic infections also impairs physical development and cognitive functions of growing children. <sup>6,7</sup> The prevalence of intestinal parasitic infections not only varies in different parts of the world but also in different regions of same country. <sup>8</sup>

The direct wet mount and the iodine mount are the conventional methods which are used for the detection of intestinal parasites from stools samples. These methods have less sensitivity in the detection of parasites in the stool specimens (eggs, cysts, trophozoites and larvae).

The parasites detection in the stool samples is increased by the use of concentration procedures such as formal –ether concentration, formalin-ethyl acetate concentration, formalin-acetone sedimentation and saturated salt flotation, zinc sulfate flotation techniques. Concentration techniques increase the detection of the helminthic eggs, larvae and the

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Title of the Collaborative activity: Mupirocin Resistance in Coagulase

Negative Staphylococcus Isolated from Rural Population - An

**Underestimated Threat?** 

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Name of the participants: Dinesh Kumar, Dakshina Bisht

Year of collaboration: 2020-21

# Mupirocin Resistance in Coagulase Negative *Staphylococcus* Isolated from Rural Population - An Underestimated Threat?

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#### **ABSTRACT**

### **BACKGROUND**

CoNS when exposed to repeated or prolonged treatment with mupirocin ointment, may become a reservoir of high-level resistance determinants and then pass on this resistance to *S. aureus*. CoNS usually tends to be reservoirs of antimicrobial resistance factors, hence they generally lead to recurrence of multi-drug resistance. Hence, it is imperative to identify and discriminate the strains of *S. aureus* and CoNS. We wanted to analyse mupirocin resistance in coagulase negative *Staphylococcus* isolated from a rural population.

# **METHODS**

This study was performed in the Department of Microbiology, SMCH (Ghaziabad) among indoor as well as OPD patients of a tertiary care hospital. All coagulase negative *Staphylococcus* strains were taken from patient's clinical specimens visiting the OPD or from patients getting treatment from the hospital. CoNS were identified by standard biochemical tests. An inhibition zonal area < 21 mm was considered as resistant.

# **RESULTS**

Mupirocin resistance was found to be 7 % in MRCoNS and 5 % in MSCoNS. MupRH and MupRL were 5 % and 7 % respectively. Only 5 (5 %) isolates showed MIC more than 512  $\mu$ g / mL as described.

# CONCLUSIONS

In case of emergence of mupirocin resistance, other decolonization options ought to be considered.

# **KEY WORDS**

CoNS, Methicillin-Resistant, High-Level, Low-Level, Mupirocin Resistance

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