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Deemed to be University



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

S. No: 1

Title of the Collaborative activity: Orbitofrontal Extradural

Hematoma: Unusual Cause of Proptosis

Name of the collaborator: Verma S-Department of Neurosurgery, All

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Name of the participants: Verma S., **Kumari S.**

Year of collaboration: 2021-22

Nature of the activity: Research

Orbitofrontal Extradural Hematoma: Unusual Cause of Proptosis

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Dear Editor,

We read with great interest the case report titled “Orbitofrontal Extradural Hematoma: Unusual Cause of Proptosis” authored by Kulkarni et al. [1] and congratulate the authors for the care their patient received and the excellent long-term outcome. Authors report a case of frontal and orbital *extradural hematoma (EDH)* who was initially managed non-surgically but later on presented with a delayed proptosis. We think that the term orbital EDH used by the authors to describe the orbital subperiosteal hematoma is not appropriate, as the reader assumes that the EDH is underneath the orbital plate of frontal bone. In fact, none of the previously published articles referred by the authors mention it as orbital EDH, rather they mention it as orbital subperiosteal hematoma which appears anatomically appropriate.

In addition, in the conclusion section, authors mention that orbital EDH irrespective of volume and even in the absence of symptoms should be operated upfront. We strongly disagree with this statement as orbitofrontal fractures may be associated with small hematomae in relation to fractures which mostly resolve spontaneously, obviating the need for surgical evacuation. Orbital plate fractures may be associated with minor dural tears which may present in delayed manner as orbital leptomeningeal cyst (growing skull fracture) requiring further interventions.

To conclude, traumatic orbital subperiosteal hematoma is a distinct entity and should not be confused with orbital extradural hematoma. Most of the orbital subperi-

osteal hematoma are small in volume and resolve spontaneously. Management should be based on the clinicoradiological condition. A delayed proptosis may be simply due to orbital venous congestion due to a substantial hematoma or due to a carotid-cavernous fistula or due to a growing skull fracture (leptomeningeal cyst). Differentiation between these differentials is paramount to decide management strategy.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

Satish Verma: conception, writing, and editing final text. Shweta Kumari: conception and writing.

Reference

- 1 Kulkarni AV, Mishra T, Devi BI, Bhat DI, Konar S, Sadashiva N. Orbitofrontal extradural hematoma: unusual cause of proptosis. *Pediatr Neurosurg*. 2021;56(4):369–72.

S. No: 2

Title of the Collaborative activity: Morphometric Analysis of the Cervical Canal Using Computed Tomography Scan Among Patients With Neck Pain in North India

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Name of the participants: Kanhaiya Jee, **Yogesh Yadav, Nisha V**

Kaul, Harshita Pant

Year of collaboration: 2021-22

Nature of the activity: Research

S. No: 2

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Morphometric Analysis of the Cervical Canal Using Computed Tomography Scan Among Patients With Neck Pain in North India

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Abstract

Introduction

Cervical spinal stenosis is a common disease that results in considerable morbidity and disability. To avoid long-term disability caused by irreversible spinal cord damage, quick diagnosis and treatment are required. To our knowledge, until recently, there has been no report or study evaluating the cervical canal stenosis and associated facet joint arthrosis as the major cause of neck pain, so the current study used computed tomography (CT) scans to determine the prevalence of cervical canal stenosis and facet joint osteoarthritis in patients who presented with neck pain, including its relationship with age, sex, and cervical spinal levels (C3-C7).

Methods

The current clinical descriptive cross-sectional study was conducted in the Department of Anatomy and Radiodiagnosis at Santosh Medical College, Ghaziabad, for a period of 24 months among newly diagnosed outpatient department (OPD) cases of neck pain (18 years or older) with suspected cervical canal stenosis and facet joint arthrosis. Clinical history, patient-specific clinical examination, and relevant information were obtained in a structured data collection schedule through interviews during OPD hours. All of the participants underwent a CT scan of the cervical region. The independent factors (age, gender, height, and weight) were used in a multiple linear regression analysis of neck pain grading, Torg ratio (TR), and right and left facet joint degeneration, which were expressed as R-squared (R^2) and adjusted R-squared (aR^2). Statistical tests were executed at a 5% level of significance; an association was considered significant if the p-value was <0.05 .

Results

A total of 85 subjects were enrolled in this study with equal representation from both sexes, i.e., males (49.4%) and females (50.6%). The transverse vertebral canal (T-VC) diameter was narrowest at the level of C3 (25.00 ± 1.13) and gradually increased at the level of C6 (25.18 ± 1.14) in this study. The mean TR of cervical vertebrae C3-C4 dropped gradually from C3 (0.78 ± 0.05) to C7 (0.76 ± 0.05) in this study. Severe left and right facet joint degeneration were observed in 13.3% and 10.5% of study subjects, respectively. In almost every subject, neck pain was a neurological symptom, so multiple linear regression analysis of neck pain grading was carried out with the independent variables (age, gender, height, and weight) and it was found to be not significant ($R^2 = 0.0617$, $aR^2 = 0.0136$, $p = 0.2842$).

Conclusion

The articulations of the posterior arch of the vertebrae are known as facet joints. They are a vital component of the vertebral column's structural stability. The superior and inner articular facets of the vertebrae are joined by these joints, which are encased in a fibrous capsule.

Categories: Radiology, Orthopedics, Anatomy

Keywords: spinal canal, transverse foramen, spinal cord injury, facet joint osteoarthritis, cervical spinal stenosis

Introduction

Cervical spinal stenosis is a common disease that results in considerable morbidity and disability [1]. To avoid long-term disability caused by irreversible spinal cord damage, quick diagnosis and treatment are required. Cervical vertebrae have smaller bodies than other vertebrae, and their purpose is to protect the spinal cord, support the head, and enable movement of the head in flexion, extension, and rotation [2].

It is estimated that 24.4% of the population suffers from spinal cord compression, which affects the cervical

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S. No: 3

Title of the Collaborative activity: Prevalence And Predictors Of

Internet Addiction Among North India Health Science Students

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2. Dr Rinku Garg-Professor, Sharda Medical College Greater Noida

Name of the participants: Swati Yadav, Shabnam Arora, Shweta

Chaudhary, Rinku Garg

Year of collaboration: 2021-22

Nature of the activity: Research

Prevalence and Predictors of Internet Addiction among North India Health Science Students

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Abstract

Internet has become everybody's man Friday these days. Addiction to Internet is a broad term in which compulsive need is there to spend a large amount of time on the internet to an extent that hampers person's academics, relationships etc. The field of medicine is also not left untouched by this addiction. It becomes essential to assess medical students' mental dysfunction and also to monitor their academic progress as they are the future doctors of the community.

MATERIAL AND METHODS: 582 medical students of Santosh Deemed to be University were selected for this descriptive analytical study by Cochran's sample size formula and stratified random sampling. (For Data collection Young's Internet Addiction Test was applied. The data was analyzed through t-test and Pearson's correlation coefficient by incorporating SPSS Software (23.0) software.

RESULTS: The Current Studies result showed Internet addiction and mental health score mean score for boys and girls was 2.34 ± 0.46 (M), 2.26 ± 0.62 (F), 2.54 ± 0.31 (M), 2.51 ± 0.32 (F) for internet addiction and mental health respectively. There was a positive association of depression and mental health with internet addiction ($P > 0.001$). Multiple regression analysis was used to predict possible indicators for addiction towards internet.

CONCLUSIONS: Overindulgent use of Internet by the students can lead to anxiety, mood swings and depression and if not restricted can lead to poor academic performance. Monitoring as well as restricting their internet addiction is the need of the hour and that can be achieved through proper counselling sessions.

KEYWORDS: Internet Addiction, medical students, mental health, academic performance.

INTRODUCTION

The Internet has enriched our life however for many, internet use can grow into a problem. people may find themselves online shopping, gaming, social networking, site surfing, blogging, stock trading, gambling, viewing pornography to an extent that it interferes with their ability to keep up with school, relationship and work and or has a negative effect on their mood^[1]. The term Internet Addiction (IA) was proposed by Goldberg for pathological compulsive internet use. K. Young was first to publicize the case report on IA^[2]. The diagnostic criteria for IA have been proposed by several investigators^[3-5] but none of these has achieved a global consensus. Recently, the American Psychiatric Association published the updated version of the DSM and included Internet Gaming Disorder in Section III as a condition requiring further research which is expected to help establish a globally approved definition and diagnostic guidelines for IA. IA is an upcoming and less researched entity in psychiatry especially in low and middle-income countries, one of them is India. First such effort to study IA among Indian school students was done in Ahmadabad, Gujarat. The result shows 11.8% of student had IA which was predicted by time spent online, usage of social networking sites and chat rooms. This study also found out the strong positive relationship between IA and depression, anxiety and stress^[6]a, research conducted in the National Institute of Mental Health and Neuroscience, Department of psychology which focused on identifying the pattern of IA and its association with a mental health problem. Survey analysis found that 24.6% reported frequent problems due to internet use and also have loneliness, depressed mood, compulsivity and other psychological impairment^[7-8].

However, despite the wealth of opportunities that the web offers, it nevertheless comes with a whole myriad of challenges particularly among vulnerable groups like youngsters and school goers^[9]. Much ink has been spilled on the effects of the Internet on the social and academic lives of students as well as their health particularly when its use

S. No: 4

Title of the Collaborative activity: A Comparative Analysis Of
Quadriceps Angle(Q Angle) And Its Correlation To Anterior Knee Pain In
Young Active Population (Amongst The Students Of Santosh Medical
College)

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Name of the participants: Nisha V Kaul¹, Yogesh Yadav², Amit
Dwidi³, Manu Gupta⁴

Year of collaboration: 2021-22

Nature of the activity: Research



A Comparative Analysis of Quadriceps Angle (Q Angle) and Its Correlation to Anterior Knee Pain in Young Active Population (Amongst The Students of Santosh Medical College)

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ABSTRACT

The Q angle is an important reflection of biomechanical effect of quadriceps femoris on the movements of knee articulation & maintenance of proper posture. So, its evaluation is an important diagnostic method for evaluation of alignment of knee with that of hip, femur and tibia. Study included healthy students of the Santosh University Ghaziabad, aged 17-30 years who gave their consent to participate in the study after due explanations. The total no of subject's chosen was 300 students. This study was performed upon approval of the Ethics Committee on Human Research of Santosh University Ghaziabad. The clinical importance of conducting this study was explained to all participants. The mean of Right Q angle in Orthostatic parallel feet position is (13.12±1.76 degree) greater than the rest of the positions. A statistically significant difference was appreciated in the Q angle among males and females and in mean Q angle among patients of group 1 (patient having knee pain) and group 2 (patients having no knee pain). A significant negative correlation was found in the Q angles (right & left) with different knee positions (OPF, OAF, LFP, LAF) with height (cm) and age of the subjects. A highly significant correlation of each Q angle in different knee position (OPF, OAF, LFP, LAF) with the rest of the other angles in different knee position was found. Assessment of Q angle is very important and mandatory for picking early patellofemoral problems particularly in young adult athletically and physically active sports person.

Keywords: Quadriceps angle (Q angle), Orthostatic and Supine position, patello femoral articulation, gender, anterior knee pain.

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INTRODUCTION

The Quadriceps femoris angle or Q angle is defined as the angle formed between the quadriceps muscles and the patella tendon. The Q angle is considered an important reflection of biomechanical effect of quadriceps femoris on the movements of knee articulation & maintenance of proper posture [1]. The Q angle not only signifies quadriceps muscle force on patella, but also function and dysfunction of patello-femoral articulation [2]. It is considered as an important diagnostic method for evaluation of alignment of knee with that of hip, femur and tibia [3-5].

Q-angle representation

The angle is demarcated by drawing two imaginary lines. One line connects anterior superior iliac spine (ASIS) to the center of the patella. Another line connects center of the patella to the middle of the tibial tuberosity, thereby forming an acute angle i.e Q angle [6-8]. In general, the normal range of the value of Q angle is between 12 and 20 degrees. The values are higher in females as compared to males [9-10]. According to Davies and Larson (normal values considered for men are between 8° and 10° and for females up to 15°, a higher value (>20°) this indicate an abnormality [11]. An excessive lateral pull of the quadriceps femoris muscle on the patella increases Q angle value, leading to patello-femoral disorders. Hence a knowledge of Q angle value helps us in prognosis & the management of knee diseases [12-13]. Different normal values of Q angle for male & female have been given by different researches [14].

According to Kishali et al (2004), the Q angle value varied from 8 to 17 degrees irrespective of gender, being 15- 13.5 degrees in males & higher in females [15]. Esmaeili *et al* (2015), found Q angle value up to 15 degree irrespective of gender [16]. Horton and Hall (1989) observed Q angle value of 13.5° in general, with 15.8° in females & 11.2° in males. Livingston and Mandingo (1997) gave Q angle value of 15-20° in

S. No: 5

Title of the Collaborative activity: Morphometric Evaluation of Facet

Joint Arthrosis in Patient of Neck Pain by CT Scan in North Indians

Name of the collaborator: 1. Harshita Pant-Dept. of Radiodiagnosis,

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Name of the participants: Kanhaiya Jee* Yogesh Yadav, Nisha V Kaul,

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Year of collaboration: 2021-22

Nature of the activity: Research



Morphometric Evaluation of Facet Joint Arthrosis in Patient of Neck Pain By Ct Scan In North Indians

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ABSTRACT

Facet joint arthrosis to be assessed in patients with neck pain using a CT scan at the cervical levels (C3-C7) and its correlation to gender, age and cervical spinal levels (C3-C7). The present clinical case control study was conducted for duration of 2 years. Diagnosed OPD cases of neck pain (20- 80 years) with suspected facet joint arthrosis in Department of Anatomy and Radio diagnosis at Santosh Medical College (SMC), Ghaziabad. During OPD hours, all clinical history was taken and related clinical examination and relevant information through consent was collected in a structured data also collected through interviews. CT scan for the cervical spine region was performed for all the enrolled subjects. Total 83 subjects were enrolled in this study with all most equal representation from both sexes i.e males (49.4%) and females (50.6%). It was found that 13.3% and 10.5% of study subjects displayed severe degeneration of the right and left facet joints respectively. Approx every subject the neck pain was presenting neurological symptom. The facet joints are synovial joint and the articulations participate in the posterior arch of the vertebrae. They provide important role in important structural stability to the vertebral column. These joints are surrounded with a strong fibrous capsule and connect the superior and inferior articular facets of the cervical vertebrae.

KEYWORDS: Facet joint osteoarthritis, Spinal nerve injury.

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INTRODUCTION

A cervical vertebrae protect the spinal cord, support the head and allows for movement of the head in multiple directions [1]. There are many reasons why it can narrow, from tumors to infections to trauma to osteophytes to osseophytes and disc herniations to degenerative changes. [2]. Numbness, tingling sensation around distribution of dermatomes, weakness, spasticity, and paresthesia are some of the most common symptoms of facet joint arthritis. These variables may lead to an increase in spinal cord compression and increase the risk of facet joint arthrosis [3-4].

The Zygapophyseal joints are affected by osteoarthritis (OA) of the spine. Located between sequential spinal levels, facet joints function as synovial joints and these joints are paired diarthrodial joints present in the posterior part of the vertebral column. When it comes to facet joint osteoarthritis (FJOA), A significant influence on health care and the economy of developed nations is believed to be caused by both FJOA and degenerative disc disease [4]. Facet joint osteoarthritis (FJOA) is characterized by facet articular cartilage loss and bony hypertrophy, finally affects the entire joint, including cartilage along with surrounding ligaments [5]. The facet joints are most important structures in determining factor of the biomechanical of the cervical spinal column [6].

MATERIAL AND METHODS

Study design

The present study was case control at Santosh Medical College (SMC), Ghaziabad, NCR, and MIMS (Mayo Institute of Medical Sciences), Barabanki, Uttar Pradesh, this study was conducted in the Department of Anatomy and Radiodiagnosis., before data collection obtained approval of ethical from Institutional Ethics Committee (IEC No. SU/2022/1831[2]; Santosh Medical College and Hospital Ethics Committee, Ghaziabad, UP).

S. No: 6

Title of the Collaborative activity: A comprehensive study of magnetic resonance angiography of circle of Willis in population of Western Uttar Pradesh

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Year of collaboration: 2021-22

Nature of the activity: Research

How to Cite:

Kaul, N. V., Pandey, V. D., Dixit, V. P., Gupta, V., Rastogi, R., & Shukla, S. (2022). A comprehensive study of magnetic resonance angiography of circle of Willis in population of Western Uttar Pradesh. *International Journal of Health Sciences*, 6(S6), 6764–6774. <https://doi.org/10.53730/ijhs.v6nS6.11304>

A comprehensive study of magnetic resonance angiography of circle of Willis in population of Western Uttar Pradesh

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Abstract---Background: Circulus Arteriosus cerebrii, another name for Circle of Willis, establishes a polygonal anastomotic channel between two internal carotid arteries and two vertebral arteries. The arterial circle is located in the interpeduncular fossa, near the base of the brain. It has been established through anatomical and radiological studies that there are anatomical variations in healthy persons. Aim: To evaluate the anatomical variations in arteries of circle of Willis supplying brain through Magnetic Resonance Angiography (MRA) in population of western UP. Methods and Materials: This cross-sectional study included 264 patients who met inclusion criteria. Non-contrast Magnetic Resonance Angiography of Circle of Willis was carried out

S. No: 7

Title of the Collaborative activity: A detailed study of arterial variations in circle of Willis among migraine and non migrainous patients in Western Uttar Pradesh

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Year of collaboration: 2021-22

Nature of the activity: Research

How to Cite:

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A detailed study of arterial variations in circle of Willis among migraine and non migrainous patients in Western Uttar Pradesh

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Abstract---Background: The human brain represents 2% of human body weight. It is supplied by two major arteries, paired internal carotid arteries and vertebral arteries. The arterial circle of Willis forms a polygonal anastomotic channel between two internal carotid artery and two vertebral arteries. The arterial circle is situated at the base of the brain in the interpeduncular fossa. Dr. Thomas Willis who first described the function of arterial anastomosis in 1966. Aim: To study the incidence of arterial variations in circle of willis among migraine patients of Western U.P. Methodology: Present study was conducted in the Department of Anatomy, Santosh Medical College Ghaziabad in collaboration with the Department of Radiodiagnosis, Rama Medical College & Hospital, Ghaziabad and from Dr. O.P Gupta Imaging Centre, Meerut. A total of 132 patients were scanned and 3D TOF sequence has been taken for MRA (BRAIN) examination. 3D angiogram was reviewed for variation in brain. Results: The complete circle of Willis was absent among 16.7% Migraine patients and 12.2%

S. No: 8

Title of the Collaborative activity: Estimation of sex by pattern of calcification of first costal cartilage in North Indian Population

Name of the collaborator: 1. S. K. Rathee-Senior Professor and Head,
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Year of collaboration: 2021-22

Nature of the activity: Research

Estimation of Sex by Pattern of Calcification of First Costal Cartilage in North Indian Population

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Abstract

Objective- Estimation of sex by pattern of calcification of first costal cartilage in North Indian Population.

Methods- The present study has been conducted in the "Department of Anatomy in collaboration with the Department of Forensic Medicine and Department of Radiology, PGIMS, Rohtak".

The specimen consisted of 50 pairs of first ribs and manubrium from both sexes, aged between 15 and 30 years, in order to determine the pattern of calcification. Specimens were taken from "cases of medico-legal autopsies" performed in the "Department of Forensic Medicine" with the legal heir of the deceased's consent, and they were radiographed in the "Department of Radiology".

Results- In the present study, calcification was observed in cartilages of both sexes aged above 16 years. Type A (marginal bracket), type A 1 (marginal linear) and type B (central) pattern were found more frequently in females on both sides with an estimated predictive value of 66.32%, 50.27% and 100% respectively. Type C (mixed) pattern occurred more frequently in males on both sides with estimated predictive value to be 100%.

Conclusion- There was no evidence of bilateral asymmetry between the calcification patterns on the right and left sides. This means that the first costal cartilage's calcification displays a clear pattern in respect to the sex at issue.

1. Introduction

There are twelve pairs of ribs, of which the first, second, tenth, eleventh, and twelfth are atypical and articulate posteriorly with the vertebral column and anteriorly with costal cartilage¹. The first costal cartilage, which extends from the front of the ribs and primarily consists of hyaline cartilage, significantly enhances the thoracic region's mobility and flexibility. Chondrosternal joint refers to the joint that develops between costal cartilage and the sternum². The cartilages at the anterior end of the ribs form a primary cartilaginous joint in this area. On radiographs, the earliest costal cartilages are noticeable when they have developed calcification.

After adolescence, the first costal cartilages are vulnerable to calcification³. Since it is unusual in that it demonstrates ossification occurring throughout adult life, calcification of the first costal cartilage is a topic of study. Although sickness may be involved by interfering with the normal blood calcium balance, this ossification is independent to disease or habit^{4,5,6}.

2. Material and Methods

The present investigation was carried out in the anatomy department of the Pt. B.D. Sharma Post Graduate Institute of Medical Sciences, Rohtak, in

S. No: 9

Title of the Collaborative activity: Pineal Gland And The Third Eye

Anatomy History Revisited-A Systematic Review of Literature

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Yadav,Parul Upadhayay

Year of collaboration: 2021-22

Nature of the activity: Research

Pineal gland and the third eye anatomy history revisited – a systematic review of literature

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ABSTRACT

The structure and functions of neuroendocrine pineal gland remains an enigma to both philosophers and scientists since time immemorial. Some of the structural and functional mysteries of pineal gland are unfolded to some extent in this article by reviewing the work of various researchers. Recently a neuronal circuit consisting of seven neurons between retina and pineal gland have been established to relate the effect of light and other rays on its secretion.

The various physical properties such as piezoelectricity, piezoluminescence, electromagnetic field, solar flare, infrared energy are also explained and correlated with the structural and secretory components of the gland. The neurosecretion of pineal gland such as melatonin play an important role in sleep-wake patterns, timings and release of reproductive hormones along with temperature control.

The presence of all enzymes needed for the synthesis of di-methyl-tryptamine (DMT) in pineal gland explains the near death experience (NDE) phenomenon. The various audiovisual hallucinations in NDE phenomenon occur due to massive increase of DMT in pineal gland before death. A very high concentration of di-methyl-tryptamine (DMT), presence of retinal proteins in 10% of pinealocytes, its role in thermoregulation and a possible role as magnetoreceptor in blind men and highest deposits of fluoride in the body are not only interesting but significant for the future research. Hence a lot of further research on pineal gland is still required to correlate its unique properties with its structural components.

Imprint

Shweta Chaudhary, Rishi K Bharti, Swati Yadav, Parul Upadhayay. Pineal gland and the third eye anatomy history revisited-a systematic review of literature. *Cardiometry*; Special issue No. 25; December 2022; p. 1363-1368; DOI: 10.18137/cardi-

ometry.2022.25.13631368; Available from: <http://www.cardiometry.net/issues/no25-december-2022/pineal-gland-third-eye>

INTRODUCTION

The pineal gland for long has been regarded by the biologists as the vestigial organ, like vermiform appendix in the abdomen, with no functional importance and that it degenerates with age is well approved. However, in the religious texts, both in the eastern and western philosophies. it has been regarded as the God organ, Pineal Eye, Third Eye, Eye of Shiva, Eye of Dangma, etc. The pineal gland's reference to being the "Third Eye" is quite ironic, as if, the gland has a lens, cornea and retina like actual eye. Galen named it as Konareion.

Herophellus (c 300 BC) noted that pineal gland was the first gland to develop around 3rd week of intra uterine life (IUL). Rene´ Descartes (1596e1650), a French philosopher, physiologist, physicist, mathematician and natural scientist called it the "seat of the soul", intimately associated with the spiritual consciousness, intelligence etc.; this work was published in 1662.

Pineal gland or "spiritual third eye" is regarded as the gateway of spiritual life as per ancient concepts about the soul. Recently, modern neuroscience has proven that pineal gland is not only the melatonin-secreting neuroendocrine organ which controls the circadian rhythm, but it also has mystical and energetic associations with spirituality.

METHODS

A systematic review of articles from year 1965 to 2022 was done by searching articles using MesH term "pineal gland and third eye anatomy" in google search.

Articles were searched in pubmed, embase, scopus and other database. Articles were assessed for eligibility and full text article related to pineal gland and third eye anatomy were included. and rest were excluded at title and abstract level only.

HISTORICAL ASPECT

The ancient philosophers and scientists have a different belief in the soul and its existence. The exact seat of the soul has evolved over centuries. Herophilus gave specific reference to the pineal gland who wrote

S. No: 10

Title of the Collaborative activity: A Study of Knowledge Assessment

Regarding HIV/AIDS in Urban and Rural Area of Ambala (Haryana)

Name of the collaborator: 1. Mittal A-Head, MMIMSR, Mullana, 2.

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Name of the participants: Choudhary K, Mittal A, Bhardwaj A, Tiwari A

Year of collaboration: 2021-22

Nature of the activity: Research



A Study of Knowledge Assessment Regarding HIV/Aids in Urban and Rural Area of Ambala (Haryana)

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ABSTRACT

Creation of awareness and right knowledge is the best possible solution to the problem of AIDS, given the availability of no cure nor any vaccine as of yet. Therefore, the present study to assess the information of population in Ambala was undertaken so that vulnerable groups could be identified and infection could be prevented. A community based cross-sectional study was carried out among the population residing in the urban and rural field practice area of department of Community Medicine, MMIMSR Mullana, Ambala from January 2015 to December 2015. Systemic randomization was done and a total of 1000 participants were interviewed and the data collected was analysed by SPSS version 20. 58.6% of the study subjects knew that the disease is caused by a virus and 81.6% had the knowledge that it could be prevented by having sex with a regular partner. Knowledge of condom usage for preventing HIV/AIDS was found to be significantly higher ($p < .05$) in Christian and Sikh subjects and with higher education and higher socio-economic status. Television, as the source of information was quoted by maximum of the participants (76%). Though the study subjects had satisfactory knowledge, still there were many lacunae which demand for extensive IEC activities.

KEY WORDS: HIV, AIDS, Knowledge, Assessment.

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INTRODUCTION

AIDS, Acquired Immunodeficiency Syndrome, is a fatal illness caused by a retrovirus known as HIV (Human Immunodeficiency Virus) which breaks down the body's immune system, leaving the victim vulnerable to a host of life threatening opportunistic infections, neurological disorders, or unusual malignancies. Discovered in 1980s, the disease is today found all over world and despite all the advances, people infected with HIV and those dying due to it are still high [1].

Correct, complete and consistent *knowledge* will help people to change their attitudes and adopt healthy practices. Since there is neither a cure nor any vaccine available for HIV as yet, the best option to control this scourge is prevention. Creation of awareness through IEC activities guided by behavioral assessment studies is the best possible solution to the problem of AIDS. Therefore, the present study was undertaken with the objectives to assess the knowledge regarding HIV/AIDS among the study participants and to study the influence of socio-demographic predictors on their knowledge.

MATERIAL AND METHODS

It was a community based, cross-sectional study conducted over a time span of one year from January 2015 to December 2015 in the urban and rural field practice area of the Department of Community Medicine, Maharishi Markandeshwar Institute of Medical Sciences and Research, Mullana, Ambala (Haryana). Participants less than fifteen years of age and those unwilling to participate were excluded from the study.

To calculate the sample size, a prevalence of 30% knowledge about HIV was taken, as concluded by Kaur [1]. 933 comes out to be the sample size (By applying the statistical formula for sample size: $n = 4pq/e^2 \times 100$) Rounding it off, the selected sample size for the study was taken as 1000. Out of this 500 were from urban and 500 from rural area. Systemic random sampling was used to select 1000 houses. In each house only one eligible person was interviewed [2]. If after three visits no family member was available then that house was excluded from the study.

S. No: 11

Title of the Collaborative activity: A study to assess the impact of COVID-19 pandemic and lockdown on rural population of district Ghaziabad

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Year of collaboration: 2021-22

Nature of the activity: Research

A Study to Assess the Impact of COVID-19 Pandemic and Lockdown on Rural Population of District Ghaziabad

Received: 21 August 2022, **Revised:** 24 September 2022, **Accepted:** 20 October 2022

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Keywords

COVID-19, India, KAP, Pandemic, Rural

Abstract

Background: COVID-19 brought a huge nation like India to a halt. The country wide lockdown was one of the initial steps taken by the government of India to curb the spread of this disease. Lockdown further induced economic losses to the rural population and severely affected their livelihoods. This study was thus, undertaken to study the awareness levels among the agrarian population of District Ghaziabad. To assess how they withstood various challenges during the pandemic and identify the best strategies to combat these unforeseen challenges.

Objectives: To assess the knowledge, attitude and practices during the COVID-19 pandemic and its impact on the agrarian population of District Ghaziabad.

Methods: A community based cross sectional study was conducted among the rural residents of district Ghaziabad. Two hundred households were selected and the adult present at the time of survey was interviewed using a pre-designed and semi-structured questionnaire through door to door visits. Approval from the Institutional ethical committee was taken prior to the study. Data was compiled and analyzed in MS Excel.

Results: About 40% of the Heads of the households surveyed were farmers & the remaining were pursuing other professions. It was observed that 93.5% of them were aware that COVID-19 is a communicable disease. Around 83% felt that COVID19 is a dangerous disease. Majority 85.5% of the study participants used soap and water for washing hands. More than half of the respondents, 56.5% of the respondents mentioned that they had accessibility to health facility when in need during the period.

Conclusion: About 19%, 10% & 9.5% of the rural households did not get adequate groceries, water & electricity supply respectively during the lockdowns due to COVID-19 pandemic. Thus, they had to bear a major brunt of the lockdown worsening of the already poor socio-economic conditions. The lockdown led to an unprecedented tragedy which still needs to be understood well so that the Government can direct the the outreach of the relief schemes and other strategies making their working effective.

S. No: 12

Title of the Collaborative activity: Study of Referral Process of

Neonates Admitted to Sick Newborn Care Units of Lucknow District

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Name of the participants: Shubhangi Srivastava, Monika Agarwal,

Shipra Saxena, Sonam Kushwaha

Year of collaboration: 2021-22

Nature of the activity: Research

Study of Referral Process of Neonates Admitted to Sick Newborn Care Units of Lucknow District

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Abstract:

Background: Nearly 98% of total deaths in neonatal period occur in developing countries all over the world and are mainly caused by infection, asphyxia, LBW and prematurity. Of all the neonatal deaths happening globally, nearly 30% occur in India. As per global reviews, nearly 15% newborns require facility based care, 10% newborns require SNCU treatment.

Objectives: 1) To study the referral process of neonates admitted in Sick Newborn Care Units of Lucknow District. 2) To suggest measures (if, any) to improve the services provided for management of neonates in Sick Newborn Care Units.

Methods: A descriptive cross sectional study was conducted among 360 neonates managed in Sick Newborn Care Units of district Lucknow. Out of 5 government SNCUs in Lucknow, 3 were randomly chosen. The schedule was pre-tested on 10 percent of the total sample of neonates admitted to SNCU.

Results: Maximum (74.8%) referrals came from the health facility, 25.2 percent referrals were from the community. In majority (68.3%) of the referred neonates, symptoms appeared within 24 hours of birth. In majority (52.8%) of the cases, symptoms were first seen by doctor at health facility, only in 0.8 percent cases, symptoms were seen by ASHA. Most frequent (27.6%) symptom observed in referred neonate was difficulty breathing

Keywords

Sick Newborn Care Units, Neonates, Referral

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Imprint

Shubhangi Srivastava, Monika Agarwal, Shipra Saxena, Sonam Kushwaha. Study of Referral Process of Neonates Admitted to Sick Newborn Care Units of Lucknow District. *Cardiometry*; Special issue No. 25; December 2022; p. 1356-1362; DOI: 10.18137/cardiometry.2022.25.13561362; Available from: <http://www.cardiometry.net/issues/no25-december-2022/study-referral-process-neonates>

INTRODUCTION

Neonatal period is the most susceptible period of life as majority of diseases occurring during this period are preventable. Nearly 98% of total deaths in neonatal period occur in developing countries all over the world and are mainly caused by infection, asphyxia, LBW and prematurity¹. Of all the neonatal deaths happening globally, nearly 30% occur in India². In India, nearly 50% of overall deaths occur during neonatal period. According to SRS (2017), IMR of India is 33 per 1000 live births, and of U.P. is 41 per 1000 live births³. According to NFHS 4 (2015-2016), Neonatal mortality of U.P. is 45 deaths per 1000 live births.

India has an alarming task of serving newborns with good care when it has largest share of births (20%) and neonatal deaths (30%) globally.

As per global reviews, nearly 15% newborns require facility based care⁴, 10% newborns require SNCU treatment. Both Emergency newborn care along with essential newborn care are required to bring down the mortality. It is very unfortunate that proper basic newborn care is still not adequately available at many facilities where newborns get delivered and admitted.

There are three levels of care- Level 1 is providing basic care to all non critical neonates, Level 2 is providing special care for sick newborns (in SNCU), Level 3 is providing care to extremely sick newborns (in NICU)⁵. It has been assessed that 85 percent of the newborns would require Level 1 care, while Level 2 and Level 3 (NICU) is required by 10 percent and 5 percent of the newborns respectively⁶.

District and subdistrict hospitals with annual delivery load of more than 3000 are now equipped with SNCUs to provide all types of neonatal care to sick newborns except for assisted ventilation and major surgeries⁷. SNCU is a separate unit located in vicinity of the labour room, having 12 or more beds to provide 24x7 services for sick newborns, and is

S. No: 13

Title of the Collaborative activity: Prevalence of obesity and overweight among adolescents in district Ghaziabad

Name of the collaborator: 1. Sushmita Thakur-Department of Community Medicine, Patliputra Medical College & Hospital

Name of the participants: Sushmita Thakur 1 , Gajendra K. Gupta 2 , Priyanka Verma 3 , Deepika Agrawal 4 , Anupama Singh 5 , Ravi Kant Arya

Year of collaboration: 2021-22

Nature of the activity: Research

Prevalence of obesity and overweight among adolescents in district Ghaziabad

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Abstract

Background- Obesity and overweight has become a public health concern. Excess weight in the body is linked to various conditions like Hypertension, diabetes, osteoporosis, and stroke which contributes to morbidity and mortality. Prevalence of obesity and overweight have been increasing in childhood and adolescent period because of more sedentary lifestyle and changes in dietary patterns. **Methodology-** This cross-sectional study was conducted among the children of age 10-19 years in urban population of district Ghaziabad through a house-to-house survey, using a pre-designed, semi-structured questionnaire with a sample size of 1128 study participants. **Results-** Among the study participants, 508 students were males and 620 were females. Among males, 194 students were found to be overweight or obese and among females, 210 students were found to be overweight or obese. Children from private schools had the highest prevalence of overweight and obesity, 26.0 % while children from rural government school had the lowest prevalence of overweight and obesity, 0.7%. Consumption of fast food was highest in urban government school students (45.4%) and lowest in rural private school students (24.8 %). Students from rural government schools did maximum vigorous physical activity (87.9%). **Conclusion-** Obesity was significantly associated with area of residence, type of school and gender.

Imprint

Sushmita Thakur, Gajendra K. Gupta, Priyanka Verma, Deepika Agrawal, Anupama Singh, Ravi Kant Arya. Prevalence of obesity and overweight among adolescents in district Ghaziabad. *Cardiometry*; Special issue No. 25; December 2022; p. 1205-1211; DOI: 10.18137/cardiometry.2022.25.12051211; Available from: <http://www.cardiometry.net/issues/no25-december-2022/prevalence-obesity-overweight>

Introduction

Obesity is a condition characterised by an unhealthy accumulation of adipose tissue which affects the health of an individual.¹ The primary cause of overweight and obesity is the imbalance between consumed and expended energy. More of sedentary lifestyle and changing trend in dietary practices have resulted in increased prevalence of overweight and obesity. It has been estimated that South Asia has the highest prevalence of obesity and it is increasing every year.²

Adolescence is the period of transition from childhood to adulthood.³ This period is characterised by physical, psychological and sexual growth and development. It has been found that around 35% of the global burden of diseases emergence in adolescence period.⁴ During the adolescent period, individuals are prone to develop behavioural patterns and lifestyle changes that affects their present and future health.⁵

According to study conducted in 2016, the prevalence of obesity has increased from 11 million to 124 million in adolescents and school-age children worldwide in past 40 years.⁶ It has been reported that the prevalence of overweight and obesity was 15.8 % among urban children and 26 % among the rural children in India in 2016.⁷ A progressive increase in the prevalence of childhood obesity is associated with more sedentary lifestyle, increased purchasing power of families and a decrease in physical activity.^{8,9} Childhood and adolescent obesity can lead to the development of hypertension, diabetes, osteoarthritis, dyslipidaemia, during adult life.¹⁰ It was found that individuals who had obesity since childhood or adolescence had 50-100% higher morbidity from diabetes, cardiovascular disease and cancers.^{11,12} Overweight and obesity have been found to contribute to more than 34% of mortality in people aged younger than 60 years in some countries.¹³ Obesity is a public health concern and is now considered a “global pandemic”^{14,15}

The major risk factors of various non communicable diseases that are established in late childhood and adolescence are easier to modify early in young age rather than at later age or after the disease onset. School going age group is particularly receptive to the health advices. Schools provide a good platform to sensitize them about future health risks and ways of their prevention.¹⁶

S. No: 14

Title of the Collaborative activity: To Study the Echocardiographic and Hemodynamic Parameters of Right Heart in Patients with Acute Inferior Wall Myocardial Infarction

Name of the collaborator: 1. Dr Viveka - Consultant Interventional Cardiologist, Max Hospital Saket New Delhi., 2. Dr Anupam Goel Consultant Cardiologist, Max Hospital New Delhi.

Name of the participants: Dr Tripta Bhagat, Dr Rohit Bhagat

Year of collaboration: 2021-22

Nature of the activity: Research

TO STUDY THE ECHOCARDIOGRAPHIC AND HEAMODYNAMIC PARAMETERS OF RIGHT HEART IN PATIENTS WITH ACUTE INFERIOR WALL MYOCARDIAL INFARCTION.

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DOI: 10.47750/pnr.2022.13.S07.110

Abstract

INTRODUCTION

The right ventricle is a structurally and functionally complex chamber which propels venous blood returning from the right atrium through the pulmonary vasculature.

Right ventricular function is relevant in a variety of clinical conditions, one of them being inferior wall myocardial infarction. Right ventricular dysfunction is present in at least one third of the patients with inferior wall myocardial infarction. The mortality rate in patients with inferior wall myocardial infarction (IWMI) is much higher when associated with right ventricular dysfunction¹.

Assessment of right ventricular function is also clinically relevant in thrombolysis²decision making when a relative contraindication is present. A study by Zehender et al revealed that patients with inferior wall myocardial infarction had no benefit from thrombolysis in absence of right ventricular involvement. Hence diagnosis and assessment of RV function is of great importance in IWMI.

Inferior wall myocardial infarction is complicated by right ventricular myocardial infarction (RVMI) in as much as 50% of cases. The occurrence of Right ventricular (RV) impairment depends primarily on the location of the Myocardial Infarction (MI), which is located more commonly in the inferior wall accounting for 24% to 50% of the cases³.

Although right ventricular infarction is clinically evident in a sizable number of cases, the incidence is considerably less than that found at autopsy⁴. A major reason for the discrepancy is the difficulty in establishing the presence of right ventricular myocardial infarction in living patients. Additionally, right ventricular dysfunction and stunning frequently is of a transient nature, such that estimation of its true incidence is even more difficult. Criteria have been set to diagnose RVMI; but, even when strictly employed, the criteria lead to underestimation of the true incidence of right ventricular infarction.

As compared with all clinical variables available at the time of admission, RVMI is associated with a relative risk of in-hospital mortality of 7.7 (95% CI) and a risk of major in-hospital complications of 4.7 (95% CI)⁵.

The potential hemodynamic derangements associated with right ventricular infarction render the afflicted patient unusually sensitive to diminished preload and loss of atrio-ventricular synchrony. These two circumstances can result in a severe decrease in right and secondarily left ventricular output⁶.

Interest in recognizing right ventricular involvement non-invasively has grown because of the therapeutic implications of distinguishing patients with right ventricular dysfunction from those without right ventricular dysfunction

Since the right ventricle has more complex anatomy and mechanics, the evaluation of its size and function is challenging. The RV is a triangular cavity composed of an anterior, inferior, and lateral (free) wall. It is divided into three anatomy parts: the inflow, the apex, and the outflow tract (RVOT). Wrapping around the Left ventricle (LV), the RV has a crescent shape in the parasternal short axis (PSAX). Combining the thinner walls than LV and prominent trabeculations, the RV endocardium definition is more difficult. And the retrosternal position also hinders ultrasound waves in image resolution sometimes.

Key Words: Right Ventricle, Echocardiography, Doppler Echo, Angiography.

S. No: 15

Title of the Collaborative activity: Biofilm Production and its Association with Multi Drug Resistance in *Pseudomonas aeruginosa* among ICU Patients with Special Reference to ESBL, AmpC and MBL production

Name of the collaborator: 1. Razia Khatoon-Professor, Department of Microbiology, Hind Institute of Medical Sciences, Sitapur, Uttar Pradesh, India.

Name of the participants: Shukla, S.D., Gupta, G., Khatoon, R., Jain, R., Gupta, A.

Year of collaboration: 2021-22

Nature of the activity: Research

Biofilm Production and its Association with Multi Drug Resistance in *Pseudomonas aeruginosa* among ICU Patients with Special Reference to ESBL, AmpC and MBL production

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Abstract

Multidrug resistant *Pseudomonas aeruginosa* is an alarming and emerging public health problem globally across the developing countries. *Pseudomonas aeruginosa* is still a major cause for nosocomial infection and approx 10-20% of these patients are admitted to the ICU's. Bacterial isolates those are biofilm producers are more drug resistant than biofilm Non-producers. The aim of the present study was to evaluate the production of biofilm and β -lactamases (ESBL, MBL, AmpC) in multi drug resistant *Pseudomonas aeruginosa* isolated from ICU patients. The present cross-sectional prospective study was carried out in the Department of Microbiology, Santosh Medical College & Hospital, Ghaziabad, Uttar-Pradesh, India. A total of 115 isolates of *P. aeruginosa* were isolated from 502 clinical samples. After confirmation of MDR status of *P. aeruginosa* further processing for biofilm and beta lactamases was performed accordingly. Biofilm production was done by test tube method and tissue culture plate method along with phenotypic profiling of ESBL, MBL and AmpC was performed by disc potentiation test; IMP-EDTA combined disc test and Cefoxitin Cloxacillin Double Disc synergy test (CC-DDST) respectively. Out of 502 total human clinical samples 115 isolates were *Pseudomonas aeruginosa* giving the prevalence rate of 23%. Among 115 isolates of *P. aeruginosa* 60 (52%) were MDR phenotypes, Out of 60 MDR isolates 23 (38.3%) were ESBL producers, 22 (36.6%) were MBL producers, and 3(5%) were AmpC producers. Out of total 115 isolates 68(59%) isolates were biofilm producers and 47 (40.8%) were biofilm non-producers. Strict antibiotic policies with early detection of beta lactamases and detection of biofilm production should be performed regularly for all clinical isolates of *Pseudomonas aeruginosa* so as to guide antibiotic selection along with better management of severe infection in ICU patients.

Keywords: Extended Spectrum beta lactamases (ESBL), Metallo betalactamases (MBL), Multidrug resistant, Biofilm

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S. No: 16

Title of the Collaborative activity: Molecular Characterization of Carbapenemases among Clinical Strains of Enterobacteriaceae at a Tertiary Care Hospital in Rural Uttar Pradesh

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Name of the participants: **Dr. Dakshina Bisht**, Dr. Ajay Kumar

Year of collaboration: 2021-22

Nature of the activity: Research

Molecular Characterization of Carbapenemases among Clinical Strains of *Enterobacteriaceae* at a Tertiary Care Hospital in Rural Uttar Pradesh

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DOI: 10.47750/pnr.2022.13.S07.107

Abstract

Introduction: Emergence of Carbapenemase producing *Enterobacteriaceae* is one of the most important Global Health care concerns. In recent years Carbapenemase producing *Enterobacteriaceae* have been implicated in numerous outbreaks. The data regarding carbapenemase genes associated with carbapenemases production among clinical strains of *Enterobacteriaceae* in rural Uttar Pradesh is very limited. Thus, in the present study we aimed to perform Phenotypic and genotypic characterization of carbapenemases among clinical strains of *Enterobacteriaceae* at a tertiary care centre in rural Uttar Pradesh

Material & Methods: A total of 695 clinical strains of *Enterobacteriaceae* comprising of 482 *Escherichia coli* and 213 *Klebsiella pneumoniae* were subjected to antibiotic susceptibility testing for carbapenem by Kirby Bauer disc diffusion method. Phenotypic detection of carbapenemase activity was performed by Modified Hodge test and Molecular detection of *bla_{NDM}*, *bla_{KPC}* & *bla_{VIM}* genes was performed by Real Time Multiplex PCR.

Result: A total of 204 (29.35%) *Enterobacteriaceae* strains showed carbapenem resistance by Kirby Bauer disc diffusion method, 68.14% (139/204) among them were *Escherichia coli* whereas 31.86% (65/204) were *Klebsiella pneumoniae*. Modified Hodge test for carbapenemase activity was positive in 163/204 (79.90%) strains. The most prevalent gene associated with carbapenemases was found to be *bla_{NDM}* (54.90%, 112/204) followed by *bla_{KPC}* (19.11%, 39/204) and *bla_{VIM}* (5.88%, 12/204).

Conclusion: New Delhi Metallo-β-lactamase was found to be the most prevalent carbapenemases among clinical strains of *Enterobacteriaceae* in present study. The findings of present study highlight the urgent need of antimicrobial surveillance to monitor antimicrobial patterns in rural community in Uttar Pradesh.

Keywords: Carbapenem, MHT, PCR, NDM, KPC, VIM

INTRODUCTION:

Emergence of Carbapenemase producing *Enterobacteriaceae* (CPE) is one of the major Global Health care concerns. In recent years CPE have been implicated in numerous outbreaks. ^(1,2) Among *Enterobacteriaceae* *Klebsiella pneumoniae* (*K.pneumoniae*) and *Escherichia coli* (*E.coli*) have been associated with notable drug resistance and are the very common reason of majority of nosocomial and community acquired infections. ⁽³⁾ Carbapenems are broad-spectrum antibiotics and were mostly preferred as the last resort in multidrug-resistant *Enterobacteriaceae* infections. ⁽⁴⁾ Carbapenems are β-lactams which differ from penicillin by substitute the carbon atom with sulfur atom and adding the double bond to the penicillin nucleus five membered ring. Carbapenems act by binding to penicillin binding proteins (PBP), by preventing the binding of peptidoglycan strands & further synthesis of the cell wall of the bacteria. ⁽⁵⁾ The Carbapenem resistance may occur via 3 major mechanisms production of carbapenemases (β-lactamases enzyme), increased efflux pump action, and the combined effect of β-lactamases with permeability of bacterial cell membrane due to alteration or porin mutation. Carbapenemases production is the commonest mechanism of resistance to Carbapenems among *Enterobacteriaceae*. ⁽⁶⁾ The classes of carbapenemases produced by an *Enterobacteriaceae* isolate mainly depends on the carbapenemase gene harbored by the organism. The encoding genes of these carbapenemases are located either on the mobile genetic elements (MGEs) or on the chromosomes. Carbapenemases class A (*Klebsiella pneumoniae* carbapenemases (*KPC*) types), Class B Metallo β-carbapenemases (MBL types) i.e., *IMP*, *VIM* and *NDM* types, & Class D oxacillinases (*OXA*-types) are keeping importance in *Enterobacteriaceae* epidemiologically. ⁽⁷⁾ Carbapenemases like *NDM* (New Delhi Metallo β-carbapenemases) & *KPC* producing *Enterobacteriaceae* are showing resistance to most of the β-lactams, aminoglycosides and fluoroquinolones. Generally, *OXA* type carbapenemases shows less activity towards carbapenems but can induce a high resistance when associated with Extended-spectrum β-lactamases (ESBLs). ⁽⁸⁾

In recent years there are several reports of Carbapenem resistance *Enterobacteriaceae* having resistance mechanism as the acquisition of carbapenemase genes. ^(9,10) Accurate & early detection of carbapenem resistance *Enterobacteriaceae* is necessary for effective appropriate antimicrobial therapy. The most used phenotypic tests for Carbapenem resistant *Enterobacteriaceae* is Kirby Bauer disc diffusion (KB Test) method and Modified Hodge test (MHT). MHT is CLSI recommended growth-based phenotypic method for detection of carbapenemase. The MHT is based on the ability of

S. No: 17

Title of the Collaborative activity: Detection of Heteroresistant

Vancomycin-Intermediate Staphylococcus aureus among Methicillin -
Resistant Staphylococcus aureus.

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Sameer Singh Faujdar

Year of collaboration: 2021-22

Nature of the activity: Research

Original Article

Detection of Heteroresistant Vancomycin-Intermediate *Staphylococcus aureus* among Methicillin-Resistant *Staphylococcus aureus*

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ABSTRACT

Background: The testing of heteroresistance vancomycin-intermediate *Staphylococcus aureus* (hVISA) by the population analysis profile-area under the curve (PAP-AUC) is tedious and laborious. The goal of this study was to determine the prevalence of hVISA among methicillin-resistant *S. aureus* (MRSA) and compare two screening tests: brain heart infusion agar with vancomycin 4 mg/L (BHIV4) and macromethod E-test (MET) with PAP-AUC as the gold standard. **Materials and Methods:** Antibiotic sensitivity test and detection of MRSA were performed according to the CLSI guidelines. PAP-AUC, BHIV4, and MET were used to detect hVISA. **Results:** A total of 288 MRSA isolates were tested for hVISA, with 48 (16.66%) being detected by PAP-AUC. With PAP-AUC, BHIV4's sensitivity, specificity, positive predictive value, and negative predictive value were 70.83%, 96.66%, 80.95%, and 94.3%, respectively. The majority of hVISA isolates were found in the vancomycin minimum inhibitory concentration range 1–2 mg/L. **Conclusions:** hVISA was found to be 16.6% in this investigation. When compared to MET, BHIV4 had a higher sensitivity, and teicoplanin and linezolid were found to be the most effective drug against hVISA.

KEYWORDS: Brain heart infusion agar with vancomycin 4 mg/L, heteroresistance vancomycin-intermediate *Staphylococcus aureus*, macromethod E-test, methicillin-resistant *Staphylococcus aureus*, population analysis profile-area under the curve, vancomycin

INTRODUCTION

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a clinically important bacterium in humans, causing infections in the eyes, cardiovascular system, skin and soft tissues, respiratory tract, and circulatory system.^[1] Since the emergence of vancomycin resistance in *Enterococci* in 1988, glycopeptides have been indicated as therapeutic agents for treating MRSA, which is often multiresistant. For the past four decades, there has been no report of vancomycin resistance in *S. aureus*.^[2,3] In 1996, the first vancomycin-intermediate *S. aureus* (VISA) isolate was reported.^[4] The first heteroresistant VISA (hVISA) and vancomycin-resistant *S. aureus* isolates appeared shortly after.^[5] The occurrence of a resistant subpopulation in hVISA isolates which occurs at a rate of 1 in 10⁵ organisms indicates an intermediate stage between vancomycin susceptible

S. aureus (VSSA) and VISA isolates.^[6] The hVISA and VISA isolates have subsequently been recognized worldwide; however, because testing procedures are not standardized, it is challenging to identify the exact prevalence of hVISA. The population analysis profiling-area under the curve method (PAP-AUC) is the current gold standard method.^[7] However, it is expensive, time-consuming, and labor-intensive. Other procedures such as the macro method E-test (MET) and screening plates have been reported but none of them

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S. No: 18

Title of the Collaborative activity: Innovations in Molecular

Identification of Mycobacterium tuberculosis

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Name of the participants: Irfan M., **Bisht D.**

Year of collaboration: 2021-22

Nature of the activity: Research

Innovations in Molecular Identification of *Mycobacterium tuberculosis*

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Abstract

Tuberculosis (TB) continues to be a significant public health concern on a global scale. Quick and precise identification of *Mycobacterium tuberculosis* (MTB) in symptomatic patients is pivotal for worldwide TB eradication initiatives. As an infectious disorder induced by MTB, it remains a critical threat to public health, particularly in poor countries, due to an inadequate diagnostic research laboratory. There is a need for a persistent incentive to reduce response time for effective diagnosis and control of TB infection, which is a benefit that molecular techniques provide over traditional methods. Although there is a tremendous overall prevalence of TB and a relatively poor probability of case identification worldwide. Common screening techniques have focused on tests that have many fundamental shortcomings. Due to the development of antibiotic-resistant *Mycobacterium* strains, TB is one of the leading contributors to fatalities. It is now possible to examine TB using molecular detection techniques, which are faster and more cost-effective than previous methods, such as standard culture procedures to test and verify antibiotic resistance in patients with TB. Whole genome sequencing (WGS), faster nucleic acid amplification tests, has made it easier to diagnose and treat TB more quickly. This article addresses the genetic approaches for detecting *Mycobacterium tuberculosis* complex (MTBC) in clinical specimens as well as antibiotic resistance in mycobacterium and discusses the practical limitations of using these methods.

Keywords: Nucleic acid amplification test, tuberculosis, *Mycobacterium tuberculosis* complex (MTBC), diagnosis of tuberculosis, Molecular Identification

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S. No: 19

Title of the Collaborative activity: Antifungal Susceptibility Pattern
of Oropharyngeal Candidiasis in Cancer Patients

Name of the collaborator: Desh Nidhi Singh-Associate

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Name of the participants: Amit Kumar Singh, Dakshina Bisht, Jitendra

Kumar Chaudhary, Desh Nidhi Singh

Year of collaboration: 2021-22

Nature of the activity: Research

“Antifungal Susceptibility Pattern of Oropharyngeal Candidiasis in Cancer Patients”

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DOI: 10.47750/pnr.2022.13.S06.064

Abstract

Introduction: Fungal infections like oral candidiasis is prevalent in cancer patients as their immune systems were compromised.

Material and Methods: 377 cancer patients who were clinically diagnosed with oropharyngeal candidiasis were included in the study. Isolation and identification of *Candida* species was based on standard microbiological procedures. CLSI (2021) recommendations were followed when determining antifungal susceptibility.

Results: Among the total 377 cases included, the highest number of instances was reported in those aged 41 to 50 years (30.23%). *Candida albicans* (21.98%) was the most frequent followed by *Candida tropicalis* (18.84%), *Candida parapsilosis* (17.80%). Monomicrobial growth was observed in 77.63% patients whereas polymicrobial growth was observed in 22.36% patients. *Candida albicans* (24.59%) and *Candida tropicalis* (20.49%) were the most frequent isolates among patients who underwent chemotherapy while *Candida albicans* (40%) and *Candida Parapsilosis* (26.66%) were the most frequent isolates among patients undergoing radiotherapy. Miconazole was found to be more susceptible than Fluconazole, Itraconazole, Clotriconazole among the antifungals.

Conclusion: Due to the risk of a systemic infection, it is important to recognise candidiasis as soon as possible for the clinical management of seriously unwell cancer patients. It may also aid the clinician in selecting antifungals for empirical treatment.

Keywords: Oropharyngeal, Candidiasis, Oral cancer.

INTRODUCTION

In recent years, the prevalence of mycotic infections has progressively climbed. Fungus that was originally thought to be non-pathogenic or less virulent are now recognized as an important contributor to mortality and morbidity in immunocompromised and critically ill individuals¹.

However, there has recently been a movement toward *Candida* species that are not *Candida albicans*. These non albicans *Candida* species have a lower susceptibility to antifungals than other *Candida* species². Emerging *Candida glabrata*, *Candida parapsilosis*, *Candida tropicalis* and *Candida krusei* are non-albicans *Candida* spp. can lead to both superficial infections of the oral and vaginal mucosa and more severe systemic and localized infections of deeper tissues³.

The prevalence of oropharyngeal candidiasis varies around the world and it has been found to range from 20 to 75% depending on region, age of the patients and other factors⁴.

The greater prevalence of NCA species in disease could also be due to their naturally higher level of antifungal treatment resistance. Thus the goal of the current study was to detect and isolate *Candida* species as well as determine antifungal susceptibility pattern among oropharyngeal cancer patients.

S. No: 20

Title of the Collaborative activity: Genetic relatedness and antifungal susceptibility pattern of Candida Spp- recovered from the oral cancer patients

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Name of the participants: Amit Kumar Singh, Dakshina Bisht, Desh Nidhi Singh, Jitendra Kumar Chaudhary

Year of collaboration: 2021-22

Nature of the activity: Research

Genetic relatedness and antifungal susceptibility pattern of *Candida spp.* recovered from the oral cancer patients

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ABSTRACT

Introduction: Oral candidiasis is the most common opportunistic infection of the oral cancer patients. Identification of *Candida* isolates and its susceptibility to antifungal agents will be helpful in the therapeutic management.

Aim and Objective: To study the Genetic relatedness and antifungal susceptibility pattern of *Candida* isolates recovered from the oral cancer patients.

Material and Methods: The present study was conducted in the Department of Microbiology at Santosh Medical College, Ghaziabad, U.P. & VarunArjun Medical College & Rohilkhand Hospital, Shahjahanpur, Uttar Pradesh. A total of 377 oropharyngeal cancer patients were selected for the study. The study was conducted from 2019 to 2021. Oropharyngeal swab was cultured by semi-quantitative method on Sabouraud dextrose agar (SDA) and Hi-Chrome agar and followed by identification and Antifungal susceptibility test. The Molecular characterization of *Candida albicans* and non albicans *Candida* isolates was performed by DNA extraction and PCR.

Results: Out of the 377 oropharyngeal cancer cases, 292 (78.8%) were males and 85 (21.2%) females. The male: female ratio was 3.4:1. Of the 377 oral cancer cases, 152 (40.3%) cases were culture positive for *Candida* species. 191 isolates were recovered from oral cavity of the cancer patients with oral candidiasis. Isolates included *Candida albicans* ($n = 42$, 22.0%), *Candida tropicalis* ($n = 36$, 18.8%), *Candida parapsilosis* ($n = 34$, 17.9%), *Candida dubliniensis* ($n = 30$, 15.7%), *Candida krusei* ($n = 30$, 15.7%), *Candida glabrata* ($n = 19$, 9.9%). 142 (74.3%) isolates were susceptible to miconazole followed by Ketoconazole 112 (58.6%), and of and Itraconazole 111 (58.1%).

Conclusion: The decreased effectiveness of antifungal drugs is a serious issue, especially in cancer patients. Hence, addition to emphasis on topical use of Miconazole application in the first stage of oral candidiasis in patients, using alternative systemic drugs such as Ketoconazole and Itraconazole may prove fruitful.

Keywords

Oropharyngeal, candidiasis, Genomic Mini AX YEAST isolation kit, DNA, PCR,

Imprint

Amit Kumar Singh, Dakshina Bisht, Desh Nidhi Singh, Jitendra Kumar Chaudhary. Genetic relatedness and antifungal susceptibility pattern of *Candida spp.* recovered from the oral cancer patients. *Cardiometry*; Special issue No. 25; December 2022; p. 1240-1246; DOI: 10.18137/cardiometry.2022.25.12401246; Available from: <http://www.cardiometry.net/issues/no25-december-2022/genetic-relatedness-antifungal>

INTRODUCTION

Candida albicans is a common commensal fungus that colonizes the oropharyngeal cavity, gastrointestinal and vaginal tract, and healthy individuals' skin. *Candida* species have emerged as an important nosocomial pathogen in immunocompromised individuals with severe underlying diseases and comorbidities, such as patients treated in intensive care units (ICU) [1]. In the last few decades oral Candidiasis have emerged as an important hospital acquired infection in immune-compromised patients with severe conditions and comorbidities, such as patients undergone chemotherapy or radiotherapy after surgical removal of oral cancer tissue [2,3].

Candida albicans has been reported as the predominant species recovered from different clinical specimens worldwide. However, in the last few decades some other species of genus *Candida* have become increasingly prevalent. The distribution of *Candida* varies according to the environmental conditions and the geographic areas. The most commonly reported non-albicans *Candida* species in studies from central and northern Asia is *Candida glabrata* [4-6]. The other *Candida* species are less frequent, although *Candida tropicalis* infections have increased globally. The increased frequency of *Candida krusei* isolation in India

S. No: 21

Title of the Collaborative activity: Utilization of health care services
by elderly for respiratory diseases including TB - Challenges

Name of the collaborator: 1. SonishaGupta-Department of Respiratory
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Name of the participants: Sonisha Gupta, V.K.Arora, Atul Kumar Gupta,
Mohan andhu Gupta


Year of collaboration: 2021-22

Nature of the activity: Research



Review article

Utilization of health care services by elderly for respiratory diseases including TB - Challenges

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Highlights

- Providing specially designed, good quality healthcare services for rapidly increasing elderly population is challenging.
- These are demographic, socioeconomic, financial, accessibility, quality of healthservices, attitude & transportation related.
- Improvement in overall socioeconomic condition of elderly & correction of negative attitude is another aspect of challenges.
- Quality of healthcare services & convenience in utilization of these services also play an important role.
- Provisions in TB control program for elderly in view of their complex needs are also required.

Abstract

S. No: 22

Title of the Collaborative activity: Non-tuberculous mycobacterial infections in geriatric patients—A neglected and emerging problem

Name of the collaborator: 1. Ajoy Kumar Verma-Department of Microbiology, National Institute of Tuberculosis and Respiratory Diseases, Sri Aurobindo Marg, New Delhi 110030, India

Name of the participants: Ajoy Kumar Verma, Vijay Kumar Arora

Year of collaboration: 2021-22

Nature of the activity: Research

FULL TEXT LINKS



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Non-tuberculous mycobacterial infections in geriatric patients–A neglected and emerging problem

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PMID: 36400516 DOI: [10.1016/j.ijtb.2022.10.010](https://doi.org/10.1016/j.ijtb.2022.10.010)

Abstract

The diseases caused by Non-tuberculous mycobacteria (NTM) has increased steadily in the last two decades. Increase in incidence of NTM infections are being reported in elderly people as they are more susceptible and often experiencing high morbidity. There is prediction that NTM infections will further rise because of expected increase in elderly population by 2050. Given the importance of NTM infection in the elderly, the interest in studying NTM characteristics in the aged population is increasing. In this review, we summarize the characteristics of NTM infection among elderly patients. We focus on epidemiology, clinical presentation, and treatment options of NTM in this age group. We highlight the differences in the diagnosis and treatment between rapid and slow growing mycobacterial infections. The current recommendations for treatment of NTM have been discussed. Finally, we have reviewed the prognosis of NTM disease in elderly patients.

Keywords: Geriatrics; Liquid media; MGIT960; Non-tuberculous mycobacterial; Solid media.

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S. No: 23

Title of the Collaborative activity: Development of a questionnaire on awareness about occupational therapy among health-care professionals:

A cross-sectional survey

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Lakshmanan Sethuraman, Amit Dwivedi

Year of collaboration: 2021-22

Nature of the activity: Research

Development of a questionnaire on awareness about occupational therapy among health-care professionals: A cross-sectional survey

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Source of Support: None, Conflict of Interest: None

DOI: 10.4103/ijoth.ijoth_1_22

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Abstract

Background: Occupational therapists are recognized as essential members of the health-care team. Occupational therapy treatments are required to deliver better services and to promote a comprehensive service approach. Occupational therapy awareness is critical for providing high-quality care to all patients. There is, however, a paucity of studies aimed at determining occupational therapy awareness and knowledge. This study aimed to develop a questionnaire to assess health-care professionals' (HP's) awareness and knowledge of occupational therapy. **Objectives:** This study aimed to develop a reliable questionnaire to assess HP's awareness and knowledge about occupational therapy. **Study Design:** This study was based on a cross-sectional design. **Methods:** The questionnaire was created in three stages. Initially, the first stage was to do a literature review for item generation. The second stage was to circulate a draft of the questionnaire among experts for face validity, and stage three was to test the reliability of items. **Results:** The generated items underwent face validity by ten experts. After face validation, the final questionnaire consisting of two sections (awareness and knowledge about OT and advocacy) were circulated to fifty health-care professionals. A statistical analysis (Cronbach's alpha) was done to analyze internal consistency, which indicates $\alpha = 0.78$. **Conclusion:** This study concludes that the questionnaire is reliable for exploring awareness and knowledge about occupational therapy.

Keywords: Awareness, Assessment, Evidence, Knowledge, Occupational Therapy, Questionnaire

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S. No: 24

Title of the Collaborative activity: Awareness and Knowledge about Occupational Therapy among Healthcare Professionals in India: A Cross-Sectional Study

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Name of the participants: Shivani Bhardwaj, RK Sharma, Amit Dwivedi,

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Year of collaboration: 2021-22

Nature of the activity: Research

Research Article

Awareness and Knowledge about Occupational Therapy among Healthcare Professionals in India: A Cross-Sectional Study

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A B S T R A C T

Background: The importance of awareness about Occupational Therapy (OT) in providing high-quality care to patients cannot be underscored. An adequate understanding of OT ascertained by Healthcare Professionals (HP), might promote timely relevant referrals for OT services.

Aim: This study aimed to assess awareness and knowledge about OT among HP in India.

Study Design: Cross-sectional design.

Method: The authors developed and validated a questionnaire followed by contacting the selected HP from the various hospitals in the country. The link for the google form was shared with the consented HP. Data was collected from September 2021 to October 2021. Pearson chi-square test was used to analyse the correlation among the questionnaire items.

Results: 230 participants consented to participate in the survey and their responses were analysed. The results showed that 84.8% of the HP were aware of OT as an independent profession, since 64.8% of HP were providing habilitation/ rehabilitation services as a part of their clinical services. University curriculum and work practice were identified as major sources where HP learnt about OT. The Activities of Daily Living (ADL) was considered a primary practice area by HP.

Conclusion: The study concluded that HP is aware of OT and recognized it as a profession dedicated to the habilitation and rehabilitation of persons with disability. However, their responses revealed a lack of awareness about the profession's scope with regard to practice and function in the workplace. As a result, referrals may be disrupted, affecting patient care and holistic approach.

Keywords: Awareness Knowledge, Occupational Therapy, Occupational Therapy in India, Healthcare Professionals, Referrals

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S. No: 25

Title of the Collaborative activity: The Study of Relationship between Levels of Serum Dihydrotestosterone, Free Testosterone & Glycemic Parameters in Patients with Type 2 Diabetes

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Name of the participants: Sanket Jheetay*, Rinku Garg, Ritu Adhana,
Himani Muniyal

Year of collaboration: 2021-22

Nature of the activity: Research



The Study of Relationship between Levels of Serum Dihydrotestosterone, Free Testosterone & Glycemic Parameters in Patients with Type 2 Diabetes

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ABSTRACT

Diabetes mellitus, a group of dysfunction carried on by insufficient insulin production, impaired insulin action, or a combination of both, is characterised by hyperglycemia and glucose intolerance. Changes in hormone secretion, endocrine abnormalities, an unbalanced hypothalamic-pituitary axis, and a decrease in testosterone have all been linked to diabetes. The study was carried out at Teerthanker Mahaveer Medical College and Research Centre, Moradabad, in the departments of Physiology and Medicine & Department of Physiology Santosh Medical College, Ghaziabad. The study used 210 samples in total, 105 from type 2 diabetes and 105 from controls. Glycaemic indices (RBS, FBS, PP, and HbA1c), serum DHT, and free testosterone were assessed using traditional biochemical methods. SPSS version 26 was used for data analysis (trial version). Serum dihydrotestosterone levels were substantially lower in diabetic cases (439.26±257.87pg/ml vs. 230.66±182.02pg/ml, p=0.001) than in controls. Compared to merely 10% of controls, Type 2 diabetics were found to have levels that were subnormal in 90% of cases. The glycemic profiles of samples with subnormal DHT levels were found to be considerably greater (RBS, PP, FBS, and HbA1c). All glycemic markers had a negative link, with DHT significantly correlated negatively with FBS, PP, RBS, and HbA1c. DHT levels were significantly lower in males with T2DM, and as the glycaemic profile deteriorated, so did free testosterone levels.

KEYWORDS: Type 2 Diabetes Mellitus, Dihydrotestosterone, Free Testosterone.

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INTRODUCTION

Diabetes mellitus type 2 (T2DM) is a chronic non-communicable metabolic disease that has spread like an epidemic throughout the world and is becoming more common at an alarming rate. This dysfunction is brought on by either a shortage in the production of insulin, a problem with the hormone's activity, or both. Two of its symptoms are glucose intolerance and hyperglycemia [1]. Proteins, lipids, and carbohydrates can all cause metabolic abnormalities in diabetes mellitus type 2. Skeletal muscles, adipose cells, and the liver are among the target tissues because insufficient insulin production or activity leads to an insufficient response and/or insulin resistance. The severity of symptoms depends on the duration of diabetes and the type of diabetes mellitus. Retinopathy, ischemic heart disease, stroke, and other micro- and macrovascular problems might result from the complication [2-3]. These issues lower the patients' standard of living and raise their mortality and morbidity risks. Due to poor lifestyle choices and an alarming rise in childhood and adult obesity, diabetes has become one of the most common diseases in the world [4]. People who have higher BMIs are more likely to develop greater insulin resistance and inadequate glucose tolerance. (1) FFA, abnormal circulating lipids like glycerol, and pro-inflammatory indicators like cytokines have all been linked with obesity, high BMI and DM type 2 [5]. Numerous studies have linked diabetes to changes in hormone production, endocrine disorders, and an unbalanced hypothalamic-pituitary axis [6]. With particular attention paid to its effects on androgens, especially Testosterone, one of the most crucial hormones needed in men for a range of tasks. Testosterone is essential for spermatogenesis, libido, lean muscle growth, muscular development, fat mass, and other elements of secondary sexual development [7]. Various studies have found that type 2 Diabetes Mellitus patients with hypogonadism and reduced levels of Testosterone and Dehydroepiandrosterone (DHEA). Low or subnormal Testosterone levels have been related in studies to cardiovascular disorders, hypertension, and high cholesterol levels. Testosterone serum levels have been proven to be inversely

S. No: 26

Title of the Collaborative activity: Clinical and Pulmonary Function

Evaluation in Post-Pulmonary Tuberculosis Patients

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Name of the participants: Gupta, S., Gupta, A.K., Basarwadia, P.K.

Year of collaboration: 2021-22

Nature of the activity: Research

Clinical and Pulmonary Function Evaluation in Post-Pulmonary Tuberculosis Patients

Sonisha Gupta*, Atul Kumar Gupta**, Pawan Kumar Basarwadia***

Abstract

Introduction: Globally, the best estimate is that 10.0 million people (range, 9.0 - 11.1 million) developed TB disease in 2017. TB is an infectious disease caused by the bacillus *Mycobacterium tuberculosis* which typically affects the lungs. But many of the fully treated post-tubercular patients are left with permanent changes in lung anatomy (bronchial and parenchymal structural) and are at higher-risk of pulmonary sequelae and premature mortality. They affect the calibre of airways, increase their resistance and decrease airflow. Aim of our study was to determine overall clinical status and pulmonary function through spirometry of the cured post-pulmonary TB patients.

Material and methods: Study was conducted on patients above 18 years of age, coming to the OPD of Pulmonary Neducue department at Santosh Medical College, Ghaziabad, and taken complete treatment under RNTCP in past and declared cured. At the time of study, 200 patients with sputum smear negative for AFB were enrolled in the study. The study was conducted for 9 months after seeking clearance from the Institutional Ethical Committee. Written informed consent was taken from all the patients included in the study. Detailed socio-demographic history, clinical history especially regarding pulmonary symptomatology, details of past anti-tubercular treatment were recorded as per proforma. General physical and detailed chest examination was carried-out. All these patients were subjected to chest X-ray examination, sputum microscopy, and pulmonary function study. **Result:** Mean age was 51.72 ± 11.89 years (mean \pm SD). Mean BMI was 19.23 ± 2.95 Kg/m² (mean \pm SD). Males were 77% and females were 23%. Illiteracy was seen in 34% while only 6.5% were graduate. In present study 84% of participants had dyspnoea and 63.5% had cough. Haemoptysis was seen in 11.5%. Post-tuberculosis 94% patients had fibrosis on their chest X-ray followed by pleural thickening and pleural calcification 28.5%, healed lesions in 24%, destroyed lung 22%, fibro-cavitary lesions in 17.5%, bronchiectasis in 13.5% and only 2% showed normal chest radiograph. In present study we observed that 47.5% patients had mixed blockage in their spirometry post-tuberculosis followed by restrictive finding in 30% of the patients and obstructive in 13.5% of the patients, and only 9% patients had normal spirometric results. Our study also classified both restrictive and obstructive pattern. It showed 2% mild, 11% moderate and 17% severe type of restrictive pattern. It was also found that mild and moderate obstruction was 2% each whereas 5% had severe and 4.5% had very severe obstruction.

Conclusion: In the absence of proper guidelines, most of the post-tubercular lung function impairment patients either suffer in silence or continue to receive irrelevant treatment. Therefore proper guidelines must be made regarding follow-up of patients post-tuberculosis treatment, to assess their lung functions and provide correct management so as to improve their quality of life.

Key words: Tuberculosis; pulmonary function; post-tubercular symptoms; pulmonary sequelae; pulmonary function impairment; spirometry; variable patterns and severity of lung impairment.

Introduction

Tuberculosis, caused by *Mycobacterium tuberculosis*, is a major cause of death worldwide, being the most communicable disease in the world, affecting one-third population. It is estimated that 2 out of every 5 people are infected with TB in India. In 2017, TB caused an estimated 1.3 million deaths (range, 1.2 - 1.4 million) among HIV-negative people and there were an additional 3,00,000 deaths from TB (range, 2,66,000 - 3,35,000) among HIV-positive people¹. Globally, the best estimate is that 10.0 million people (range, 9.0 - 11.1 million) developed TB disease in 2017.

Considering the enormous burden of disease and limited resources, presently the focus is on early detection and full treatment of affected patients. But many of the fully treated post-tubercular patients are left with permanent changes in lung anatomy and are at higher-risk of pulmonary sequelae and premature mortality²⁻⁵. These result in pulmonary sequelae that are characterised by bronchial and parenchymal structural changes, including bronchovascular distortion, bronchiectasis, emphysematous changes, and fibrotic bands. Moreover, these changes remain permanently in the lungs after a microbiological cure⁶. They affect the calibre of airways,

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S. No: 27

Title of the Collaborative activity: Impact of chronic exposure to air pollution on health of people of Delhi/NCR.

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Year of collaboration: 2021-22

Nature of the activity: Research



Impact of chronic exposure to air pollution on health of people of Delhi/NCR.

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ABSTRACT

The air quality in Delhi, the capital territory of India is worst of any major city in the world and the national capital region is also equally affected. There is association between chronic exposure to air pollution and increasing incidence of respiratory morbidity and other systemic adverse health effects related to eye, neurological, cardiovascular, endocrine system, eye etc. To determine the respiratory and non respiratory morbidities amongst people chronically exposed to ambient air pollution. Two groups with different pattern of exposure to air pollution were chosen and comparison was done for the presence of respiratory and non respiratory morbidity amongst people. It was a cross sectional study with non probabilistic quota sampling approach. Two groups of people 245 in each group. In Group-A: road side vendors, traffic police personnel, E-Rickshaw driver and auto drivers were included. In Group-B the personnel who are working indoor inside the offices were included. Statistical analysis was done with license version of SPSS 26. Independent-T test for continuous data type for different population, Paired T-test within the group and Chi square test for categorical data were applied. The numerical data were expressed in mean \pm SD while categorical data as frequency table and percentage table. In the group having chronic direct exposure to air pollution because of their nature of work there was higher reporting of respiratory symptoms such as cough, sputum and dyspnea as well as there was high reporting of non-respiratory conditions such as headache, hypertension, Diabetes Mellitus, joint pain, conjunctivitis and easy fatigability. The presence of respiratory morbidity and non respiratory morbidity was higher amongst participants having direct exposure to air pollution.

KEY WORDS: Air pollution, Respiratory morbidity, non respiratory morbidity

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INTRODUCTION

Air pollution in India is a serious issue with the major sources being wood and biomass burning, fuel adulteration, vehicle emission and traffic congestion [1-2]. In autumn and winter months, large scale crop residue burning in agriculture fields is a major source of smoke, smog and particulate pollution [3-5]. India is the third largest per capita emissions of greenhouse gases [6]. In Delhi, between March to September, the air quality index varies from satisfactory to moderate, then October onwards it begins to deteriorate in the range of Poor (201-300), Very Poor (301-400), Severe (401-500) or Hazardous (500+) [7-9]. According to a WHO study, 13 of the 20 most-polluted cities in the world are in India [10]. As Per the survey conducted by WHO the air quality in Delhi, the capital of India, is the worst of any larger city in the world, this also affects its surrounding the national capital region [11-12]. After the beginning of Covid-19 pandemic during lock down period in Delhi there was significant improvement in air quality index [13].

Between July 2015 and February 2016, TERI University study found that 59%, 45%, 26% and 39% of the surveyed traffic police officers reported having thick sputum, pain in joints, haemoptysis and shortness of breath respectively compared to office workers [14]. The level of outdoor air pollution resulting from industrial and motor vehicle emissions has been increasing at fast rate, resulting in significant increase in the prevalence of respiratory symptoms such as coughing and wheezing [15-16]. The studies have described a positive association between ambient air pollution and higher prevalence of hypertension amongst population exposed to high ambient air pollution [17]. The meta-analysis study conducted by Bo-Yi Yang et al. showed that there was significant association of hypertension with increased exposure to air pollution [18]. The findings of studies show that long-term exposure ambient air pollution including

S. No: 28

Title of the Collaborative activity: Spirometry after Successful

Treatment of Pulmonary Tuberculosis

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Year of collaboration: 2021-22

Nature of the activity: Research



Spirometry after Successful Treatment of Pulmonary Tuberculosis

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ABSTRACT

Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis complex and among the leading cause of mortality and morbidity in India. India accounts for 23% of the global TB burden. Tuberculosis has been stated as a risk factor for development of COPD in GOLD guidelines. Post-tuberculosis respiratory morbidity is common and constitutes a significant subgroup of chronic lung disease patients presenting to medical out patients. Little is known about the prevalence of a restrictive pattern after PTB. Since the evaluation of true restriction requires the measurement of TLC, while majority of the studies only use spirometry. Most of those studies were conducted in countries where the incidence of tuberculosis is low; the prevalence and type of pulmonary impairment might differ in countries where that incidence is high. To describe the spirometry findings after successful treatment of pulmonary tuberculosis. To find out association between symptoms and variables including smoking, previous histories of tuberculosis with lung function as elicited by spirometry. To describe the response to therapeutic intervention for post tubercular lung disease. It was an observational prospective longitudinal study which enrolled 35 patients. Study was conducted in the Department of Respiratory Diseases & Tuberculosis, Rajan Babu Institute for Pulmonary Medicine and Tuberculosis (RBIPMT), North Delhi Municipal Corporation, GTB Nagar, Kingsway Camp, Delhi-110009. Spirometry evaluation was done on 0, 3rd and 6th month after successful completion of ATT. Cough and expectoration were main complaints which was significantly (p value 0.0001) associated with abnormal pattern of spirometry, mainly with obstruction without reversibility and restrictive pattern especially in males with significant difference (p -value-0.007). Despite of therapeutic intervention there was no significant change in the spirometric status and chest symptoms over the period of 6 months after completion of ATT. There is no role of inhaled bronchodilators in normal, restrictive and mixed pattern. Inhaled bronchodilators can be given in post PTB patients with obstructive spirometric pattern. Thus, in post PTB patients' spirometry has a pivotal role in diagnosing the abnormal spirometric patterns and devising the appropriate treatment with inhaled bronchodilators in selected (obstructive) spirometric pattern.

Keywords: Tuberculosis (TB), Spirometry, COPD

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INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis complex and among the leading cause of mortality and morbidity in India. India accounts for 23% of the global TB burden [1]. Chronic obstructive pulmonary disease (COPD) and tuberculosis are among the world's ten most prevalent diseases, the main burden of the latter being in the developing countries, in the form of pulmonary tuberculosis. Burden of disease in India for tuberculosis have been ranked as sixth in terms of disability and death [2]. Tuberculosis has been stated as a risk factor for development of COPD in GOLD guidelines [3], however, the impact of pulmonary tuberculosis on the prevalence of COPD has often remained neglected.

Pulmonary tuberculosis patient who has taken complete course of anti-tubercular treatment (ATT) and cured [4] with sputum smear negative for acid fast bacilli (AFB) and X-ray chest showing inactive lesions are frequently left with respiratory disability due to impairment in pulmonary function, ranging from mild to severe often present to pulmonary medicine OPD. Pulmonary TB can involve the airways, resulting in mucosal edema, hypertrophy/hyperplasia of the mucous glands, increased mucous secretion and smooth muscle hypertrophy. This affects the caliber of the airways, increases their resistance and decreases airflow. The mechanism of fibrotic scarring can also result in reduced total lung capacity [5].

S. No: 29

Title of the Collaborative activity: The effect of four different intracanal medicaments on the push-out bond strength of root canal sealers

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Year of collaboration: 2021-22

Nature of the activity: Research

JML | ORIGINAL ARTICLE

The effect of four different intracanal medicaments on the push-out bond strength of root canal sealers

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ABSTRACT

This study aimed to compare the effect of 4 different intracanal medicaments on the push-out bond strength of two sealers (AH Plus and MTA Fillapex). 100 single-rooted extracted premolar teeth were divided into 5 groups, with 20 samples in each group, one group being the control group. After cleaning and shaping procedures, the canals were filled with 4 different medicaments: calcium hydroxide, tri-antibiotic paste (TAP), Metapex, or Chlorhexidine (2%) gel for 2 weeks. Following this, the medicaments were rinsed away, and the samples in those sub-groups were obturated with gutta-percha/AH Plus or MTA Fillapex sealers. After 2 weeks of incubation, a 2-mm-thick middle section from each root was evaluated to test push-out strength. The obtained data were tabulated, and appropriate statistical analysis was performed (two-way ANOVA and LSD test). When comparing the average values, the bond strength values of AH Plus were significantly higher than those of MTA Fillapex ($p < 0.05$) in all medicament groups. Based on the findings, we concluded that AH Plus had comparatively higher bond strength than MTA Fillapex. We also observed that AH Plus had higher bond strength in the presence of calcium hydroxide, whereas MTA Fillapex in the presence of Chlorhexidine. A comparison of the push-out bond strength shows that irrespective of the root canal segment or the final irrigant used, AH Plus showed higher values among all groups. The limitation of the current study was that the effect of TAP on the bond strength of endodontic sealers was not negative.

KEYWORDS: AH Plus, sealing effect, MTA Fillapex push-out bond strength.

INTRODUCTION

The concurrence between root canal wall and root canal filling material is settled by various endodontic sealers. A durable and efficient attachment of the filling material is essential to prevent root canal infections generally caused by the growth of microbes and newer infections caused by coronal apical leakage [1]. When evaluating the properties of different sealers, the most important feature is that the root canal environment is prepared with a bacteria-tight seal, which is maximally attained by the endodontic sealer. Dislodgement resistance, also known as the push-out bond strength (POBS), is considered a significant prognostic marker to determine the compatibility between the root canal wall, sealer, and core material [1]. It is evident that adherence to dentin is a fundamental feature of root canal sealers; studies

and tests have proven that a stronger bond strength diminishes the leaking of the canal and improves the stability of root canal obturation material. The extent to which the sealer adheres to dentin is determined by factors such as variations in the structure of root dentin amongst the inter-samples or intra-sample, presence/absence of smear layer, chemical constituents of sealer, and its interaction with the dentin [2]. Gutta-percha (GP) is incapable of independently providing a complete seal; therefore, without a sealer, it is almost impossible to acquire a complete seal of the root canal [2]. Recently, a superior sealer was developed, namely mineral trioxide aggregate (MTA), which was shown to be bio-compatible and bactericidal. This sealer shows a positive effect on the smear layer removal, and it has high push-out bond strength that helps prevent material dislodgement [3]. Sealers also play a critical role in the retention of the post, which can be affected

S. No: 30

Title of the Collaborative activity: Evaluation of Oxidative Stress and Its Association with Pro-Inflammatory Cytokines in Obese, And Non-Obese PCOS Subjects

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Year of collaboration: 2021-22

Nature of the activity: Research

Evaluation Of Oxidative Stress And Its Association With Pro-Inflammatory Cytokines In Obese, And Non-Obese PCOS Subjects .

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Abstract

Introduction: Polycystic ovarian syndrome (PCOS) is a common endocrinological disorder of reproductive age female. The etiology of PCOS is not completely understood. Several publications nowadays demonstrate the relationship between chronic low-grade inflammation and mitochondrial dysfunctions induced by oxidative stress.

Methods: This hospital based cross-sectional study, was conducted among reproductive age females. The study includes 73 obese PCOS, 55 Lean PCOS subjects and 15 non-obese PCOS subjects on the basis on transvaginal sonography and BMI. The anthropometric parameters were: BMI, Waist Hip Ratio (WHR), systolic and diastolic blood pressure by sphygmomanometer. Serum samples were collected to measure: oxidative stress (MDA), lipid profile, and pro-inflammatory cytokines (HsCRP, IL-6, IL-18 & TNF- α).

Results: The BMI and MDA levels were significant in obese-PCOS and lean PCOS group ($p < 0.001$). Whereas, in the obese-PCOS and non-PCOS obese group MDA, triglycerides, HDL, VLDL, IL-6, IL-18, and TNF- α were significant respectively.

Conclusion: It concluded from this study that obesity may contribute to dyslipidemia and elevated oxidative stress levels in reproductive age females irrespective of PCOS. Therefore, obesity in addition to known features such as dyslipidemia, hypertension and disturbed oxidative stress response, may be contributing factors to increase the risk of future cardiovascular diseases in obese women.

Keywords: Obesity, Oxidative stress, Polycystic ovarian syndrome, pro-inflammatory cytokine.

Introduction

Polycystic ovarian syndrome (PCOS) is one of the most common endocrinological disorders of females of reproductive age with a prevalence rate of about 5-14% ⁽¹⁾. The etiology of PCOS is not completely understood. Several publications nowadays demonstrate the relationship between chronic low-grade inflammation and mitochondrial dysfunctions induced by oxidative stress ^(2,3). The evidence suggests that the women suffering from PCOS have increased levels of lymphocyte and monocyte counts, as well as elevated levels of pro-oxidants like C-reactive protein (CRP), pro-inflammatory cytokine (TNF- α), interleukins (IL-6, IL-18) and elevated levels of lipid peroxidation in comparison with the healthy controls ^(4,5). It is known that the increased production of reactive oxygen species (ROS) initiates the activation of inflammatory responses in the PCOS subjects because of the mitochondrial damage and dysfunctioning, which play a vital role in the development of oxidative stress and leads to vicious cycle resulting in activation of the inflammatory response ⁽⁶⁾.

Oxidative stress is defined as the imbalance between the production of free radicals which increase the chemical reactivity and antioxidant defenses buffering the oxidative damage ⁽⁷⁾. Several studies suggest that oxidative stress is significantly increased in women with PCOS in comparison with healthy controls and is significantly correlated with

S. No: 31

Title of the Collaborative activity: Is Reversal Of Type 2 Diabetes

Mellitus Possible? An Approach To Mitigate

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Year of collaboration: 2021-22

Nature of the activity: Research

Is Reversal of Type 2 Diabetes Mellitus Possible? An Approach to Mitigate

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Abstract

Diabetes mellitus defined as progressive and irreversible disease characterized by hyperglycaemia. It falls under top 5 cause of death and can led to series of diseases affecting vital organs. Type 1 diabetes is heredity disorder which leads to insufficiency of insulin in the blood. Type 2 diabetes mellitus is lifestyle dependent and occurs in later stages of life due to overweight. Excessive fat deposition in liver and pancreas leads to desensitization of receptors for insulin which leads to rise in blood glucose level. Type 2 diabetes mellitus is now known to be reversible with loss in body weight. Three methods of losing body weight are bariatric surgery, calorie restricted diet and carbohydrate restricted diet. All these methods help in reducing body fat which increases the insulin sensitivity and reduces blood glucose. Out of the three methods, carbohydrate restricted diet is proven to be most efficient.

Keywords: Remission, Bariatric surgery, low calorie diet, low carbohydrate diet.

INTRODUCTION

As per American Diabetes Association, diabetes mellitus is defined as a group of metabolic diseases with clinical manifestation of prolonged hyperglycemia due to defect in insulin secretion, defect in insulin action or both. The long-term hyperglycemia is associated with damage, dysfunction and failure of different organs especially eyes, kidneys, nerves, heart and blood vessels. Diabetes is considered as the underlying cause of blindness, heart attack, stroke, kidney failure and lower limb amputation. The aetiology of diabetes mellitus can be autoimmune destruction of beta cells of pancreas with insulin insufficiency or the abnormalities that result in resistant to insulin action.[1] Majority of the diabetic cases comes under two categories. First one is type 1 diabetes mellitus which is caused by absolute insufficiency of insulin and accounts for about 5 to 10% of total diabetic cases worldwide. Second one is type 2 diabetes which accounts for about 90 to 95% and is caused by resistance to insulin and inability to produce compensatory insulin.[2] Type one diabetes is a genetic disorder which results in lack of insulin in the blood. In such case, the level of insulin will be less than the normal range in the blood. The cause of type 2 diabetes is not fully understood but it is characterised by rise in blood glucose level together with insulin level. There will be downregulation of insulin receptors which causes the loss of activity of insulin resulting in type 2 diabetes mellitus. Normal fasting blood glucose level range from 60mg/dl to 110mg/dl and post prandial of less than 140mg/dl. The renal threshold for glucose is 180 mg/dl and above this level, glucose can be detected in urine. In Both the cases, HbA1c level rises above the normal range i.e., 3 to 5% of total haemoglobin.[3]

Facts and figures

As per international diabetes federation, 537 million people were diabetic in the year 2021 within age group 20 to 79 years, which is expected to rise to 643 million by 2030 and 783 million in 2045. This will be an increase in diabetic case by 46%. South east Asia has about 90 million diabetic cases in 2021, which will rise to 95 million in 2030 and reach 136 million by the year 2045, a rise in prevalence of diabetes mellitus by 87%. About half of the diabetic patients (about 240 million) are undiagnosed. Out of that, three fourth (3 in 4) live in low- or middle-income countries. More than 1.2 million children and adolescents are living with diabetes type 1. Total of about 6.7 million deaths had occurred due to diabetes and in the year 2019 alone, 1.5M death occurred making diabetes mellitus as the 9th leading cause of death in the world. As per WHO mortality due to diabetes has increased by 5% from the year 2000 to 2016.

S. No: 32

Title of the Collaborative activity: Oxi-Inflammatory Stress And
Biomolecular Deterioration: A Mysterious Convergence In Post Covid
Patients

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Year of collaboration: 2021-22

Nature of the activity: Research

Oxi-Inflammatory Stress and Biomolecular Deterioration: A Mysterious Convergence in Post COVID Patients

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Abstract

Background: Despite several scientific efforts against COVID 19, conundrum of biomolecular deterioration in Post COVID syndrome patients are still in dark at an unprecedented scale globally and affected the patient's health multidimensionally. It is conceivable that patients recovered from COVID-19 after second wave are at enhanced risk of secondary complications.

Aim: The present study was carried out to estimate the serum vitamin D and total antioxidant activity (TAC) along with markers of oxi-inflammatory stress in post COVID patients diagnosed RT-PCR negative after second wave of COVID-19 and to determine their role in predicting secondary complications.

Methodology: 50 subjects (30-55 years) of Delhi-NCR region were recruited and categorized into two groups (n=25 in each group; on the basis of their history of COVID infection). By using standard methods, study group parameters were estimated in Post COVID patients and statistically compared it with that of 25 non affected healthy controls by using student's t-test.

Result: Serum CRP, TNF- α , MDA and uric acid levels were significantly high (p<0.05) in Post COVID patients as compared to healthy controls. Conversely, serum vitamin D and TAC levels along with SOD activities were found to be significantly low (P<0.001) in Post COVID patients as compared healthy controls. However, ceruloplasmin level was altered insignificantly (p<0.1) with respect to Group I subjects. Vitamin D levels were positively correlated with TAC and SOD activity (P<0.001) and negatively correlated with MDA, CRP, TNF- α and uric acid levels in post COVID patients.

Conclusion: Therefore, the present study emphasizes the dire need of special attention to Post COVID population by providing vitamin D supplementation, antioxidant and mineral rich diet along with adoption of regular aerobic exercise not only to rejuvenate the biomolecular homeostasis but also to reduce oxi-inflammatory stress mediated future complications.

Keywords: TNF-alpha, Malondialdehyde, total antioxidant activity, inflammation, vitamin D.

INTRODUCTION

Since its origin in the year 2019, COVID-19 has proved to be one of the major health disasters known to humankind taking millions of lives and affecting billions of lives. Although the mortality rates have come down drastically, the Post COVID effects are still of great concern to the medical community. As soon as the virus gets inside the host, the immune system is activated to act in response in opposition to the foreign organism with the help of phagocytic cells and dendritic cells that uses reactive oxygen species and cytokines, that can create an inflammatory response in the host further aggravating the fight against COVID-19 infection. It has been seen that COVID 19 infection causes acute inflammatory response ensuing in the pro-inflammatory cytokines storm that becomes a reason of acute lung damage.^[1] In various studies, it has been shown that there is a strong link between presence of pro-inflammatory components and reactive oxygen species [ROS].^[2] The oxidative stress occurs not only due to depletion of endogenous enzymic and non-enzymic antioxidants reserves (superoxide dismutase, catalase, vitamin C etc.) but also due to an unfettered generation of ROS which in turn upsetting the redox circuits characterized by biomolecular damage such as lipid peroxidation, DNA damage etc.^[3] The domino effect of oxidative stress also continues to irregular cell signalling.^[4,5] Thus, OS negatively affects a range of processes such as inflammation, apoptosis, immune cell activation, cardiovascular remodeling, renal dysfunction, and excitation of the sympathetic nervous system.^[6]

Recently, apart from role of vitamin D in calcium homeostasis and bone metabolism, beneficial effects of vitamin D as an immune modulator in COVID 19 have received much attention. Moreover, vitamin D enhances neutrophil activity and reduces the deteriorative effect of pro-inflammatory cytokines.^[7,8] At a molecular level, vitamin D appears to reduce oxidative stress.^[9] Although contradictory evidences have been documented in relation to

S. No: 33

Title of the Collaborative activity: A Narrative Review on Etiology and Mechanism of Aflatoxin B1 in the Induction of Hepatocellular Carcinoma

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Year of collaboration: 2021-22

Nature of the activity: Research

A Narrative Review on Etiology and Mechanism of Aflatoxin B1 in the induction of Hepatocellular Carcinoma

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Abstract

Hepatocellular carcinoma is one of the primary liver cancer. Even though the incidence of HCC differs among various geographic regions, ethnicity, gender and age, it is one of the most common malignancies among Asian and African populations. It is well represented as the fourth most common cancer in the world. It is estimated that more than 80% of HCC cases are attributed due to viruses including hepatitis B and C infections. However it is also quite interesting that consumption of hazardous alcohol, dietary exposure of aflatoxin1 and hemochromatosis are also highly associated with the initiation and development of HCC. Risk factors such as AFB1 could alter the DNA upon exposure, modify the proteins and induce oxidative stress and further leading to malignant transformation of the hepatocytes. In this review we narrated the basics of the etiology and molecular mechanisms behind the involvement of AFB1 in the initiation and development of hepatocellular carcinoma.

Keywords: Aflatoxin B1; Hepatocellular Carcinoma; AFB1-macromolecular adducts; AFB1-8, 9-epoxide.

INTRODUCTION

Cancer is one of the most dreaded diseases of the 20th century and spreading further with continuance and increasing incidence in 21st century. In world, cancer is the second most common cause for death of human beings, next to cardiac failure. In spite of several attempts to cure cancer, it is difficult to avoid patient dieing. Destruction of cells due to cancer can occur at different parts of a body. Based on this there are different types of cancer namely, lung cancer, colon cancer of esophagus, breast cancer, liver cancer, etc. The frequency of different kinds of cancer varies enormously in different human populations. The incidence of breast and colon cancer is much higher in the United States than in Japan. The liver cancer rate is highest in third world countries and in these cases, diet is most likely the culprit.

Cancers most commonly associated with diet include esophagus, stomach, colon, liver and the prostate. Overall, it is clear that much of the variation in cancer incidence is environmental rather than genetic. The conviction is growing that the carcinogenic agents in the environment are active as cancer causing agents because they produce mutations. The hunt for carcinogens has been facilitated by Bruce Ames, who developed a test for carcinogens based on the mutagenic action of a compound on bacteria. Ames tests have shown that many carcinogens originate from food and chemical pollutants. Dietary factors continue to play a complex and multifactorial role in the etiology of cancer.

1.1. Etiology

Cancer is ultimately the result of interplay between environmental (exogenous) and genetic (host) factors. It is caused generally by the agents external to the body, though it is difficult to determine the exact nature of the agent.

S. No: 34

Title of the Collaborative activity: Generation of Reactive Oxygen

Species and Its Defense Mechanism during Aflatoxin B1 Contamination:

An Overview

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Year of collaboration: 2021-22

Nature of the activity: Research

Generation of Reactive Oxygen Species and its Defense Mechanism during Aflatoxin B₁ Contamination: An Overview

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Abstract

Aflatoxins (AFs), the poly-substituted bi-furanocoumarins, are the secondary metabolites of parasiticus/flavus group of *Aspergillus* genus. AFs including aflatoxin B₁ (AFB₁) have been classified under Class I Human Carcinogen by the International Agency for Research on Cancer (IARC) based on its potential hepatotoxic, nephrotoxic, mutagenic, genotoxic and immunotoxic nature. Cell injury caused by AFB₁ are associated with consequences of the lipid peroxidation due to the release of free radicals and thereby damaging the biological systems. It is evident that since all the cell membranes are highly rich in polyunsaturated fatty acids (PUFAs) that could act as the substrates for such reactions. The most vital among such reactions is the AFB₁-induced oxidative stress and its consequent generation of reactive oxygen species (ROS) and the oxidative DNA damage. Normally AFB metabolites produced under phase 1 metabolism would pass through the Phase 2 metabolism via., glutathione-S-transferase (GST) enzymatic processes allowing further detoxification and elimination of the toxin from the human system. This review is mainly to focus the role of antioxidants in metabolizing the AFB₁ and thereby preventing the free radical induced peroxidation to prevent the predisposition of normal hepatocytes into malignant.

Key word: Aflatoxin B₁ (AFB₁); Free radicals; Lipid peroxidation; Antioxidants; Phase 1 & 2 metabolism

INTRODUCTION

Aflatoxins (AFs) are the most ample fungal toxins that are abundantly found the foodstuffs. Initially it was isolated from the *Aspergillus flavus* and thereby taken the name AF. Since then there are at least 20 different types of AF intermediates been identified from *Aspergillus* species (1, 2). Basically the chemical structure of AF is named as furanocoumarins. In general, AFs are most commonly found in cereals and cereal-based food that includes the rice, maize, sorghum, millets, groundnuts, dried cassava, and many others those have been stored without proper processing. Despite contaminating the food stuff, AF could also be found in the edible tissues, milk, and eggs after the consumption of feed contaminated with AFs by the farm animals (1, 3). Among the various types of AFs, aflatoxin B₁ (AFB₁) is one of the most toxic, mutagenic, and carcinogenic to both humans and livestock, and therefore, the International Agency for Research on Cancer has classified AFs as group I carcinogen (4). Consumption of AFB₁-contaminated feed could severely causes growth rate reduction, body and organ weights decrease (5), lowered egg production and re-productivity (6), immunosuppression (7) and great susceptibility to diseases (8). Before all these consequences, the basic and foremost ailments are the generation of free radicals and lipid peroxidation.

Free radicals and lipid peroxidation

A free radical can be defined as any molecular species capable of independent existence that contains an unpaired electron in an atomic orbital (9). The presence of an unpaired electron results in certain common properties that are shared by most radicals. Many radicals are highly reactive and can either donate an electron to or extract an electron from other molecules, therefore behaving as oxidants or reductants. The most important free radicals in many diseases including cancer are oxygen derivatives, particularly superoxide (O₂⁻) and the hydroxyl radical (OH[•]). Radical formation in the body occurs by several mechanisms involving both endogenous and environmental factors (Figure 1).

S. No: 35

Title of the Collaborative activity: Genetic Polymorphism in Papillary

Thyroid Cancer in North Indian Population- A review

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Year of collaboration: 2021-22

Nature of the activity: Research

Genetic Polymorphism in Papillary Thyroid Cancer in North Indian Population – A review

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ABSTRACT

Papillary thyroid cancer (PTC) is one of the generic types of thyroid cancer and most prevalent form of malignancy among all cancers of the thyroid. It is also one of the few cancers with a rapidly increasing incidence. PTC constitutes approximately 85% of all thyroid cancer cases. PTC is usually contained within the thyroid gland and generally biologically indolent. The present article provides an updated condensed overview of PTC, which focuses mainly on the molecular and biomarker investigations.

KEYWORDS

Papillary thyroid cancer, Molecular biomarker, RET/PTC, RAS, BRAF.

Imprint

Himanshu Soni, Jyoti Batra, Sivanesan Dhandayuthapani, Anjali Mishra, Juhi Aggarwal. Genetic Polymorphism in Papillary Thyroid Cancer in North Indian Population – A review. *Cardiometry*; Special issue No. 25; December 2022; p. 1188-1191; DOI: 10.18137/cardiometry.2022.25.11881191; Available from: <http://www.cardiometry.net/issues/no25-december-2022/genetic-polymorphism-papillary>

INTRODUCTION

Thyroid Cancer (ThyCa) is the most common endocrine malignancy and account for the majority of endocrine cancer death each year ^[1]. Thyroid cancer

originates in the thyroid gland, which is located at the front of the neck, just below the larynx. Thyroid hormones control metabolism, growth, body temperature, menstrual cycles, the functioning of the lungs, heart & muscle strength and ancillary vital organs. Thyroid disorder is a silent disease where the symptoms are subtle and may be often overlooked during diagnosis, so it's essential to critical monitoring during such type of diagnosis. Generally, the symptoms of the under-active thyroid are similar in men as well as in women, with weakness, fatigue, weight gain, depression and high cholesterol dominancy ^[2].

Thyroid cancer incidence and prevalence rates are rising throughout the world, including India. According to the statistics from the National Cancer Registry Program (NCRP) of Government of India, to study the epidemiological trends of thyroid cancer. The incidence rate of thyroid cancer in India in women increased from 2.4 to 3.9/100,000 and in men from 0.9 to 1.3/100,000. Very few studies have reported about the mutation/polymorphism in RAS/RET/BRAF of patients diagnosed with Papillary thyroid cancer. Hence, there is lack in studies reporting the cause of Papillary thyroid cancer in North India. Most of the data supporting an epidemic of thyroid cancer come from high-income countries; therefore, this phenomenon is generally considered a problem of the developed world. However, an epidemiologic transition from communicable disease to chronic noninfectious diseases is rapidly developing in low and middle income countries ^[6]. In the past, infectious diseases overwhelmed the health care infrastructure in these regions; the system has now been overtaken by the burden of noncommunicable diseases such as cancer, diabetes and heart disease. The state of Kerala in southern India, home to >34 million people, has health indices comparable to those of developed nations. The health care system in Kerala has undergone the epidemiologic transition much earlier than the rest of country ^[7]. Therefore, we hypothesized that a thyroid cancer epidemic may be occurring in the region and aimed to study thyroid cancer trends in Kerala.

There are four sub-types of thyroid cancer: papillary cancer (85% of cases), follicular cancer (5-15%), anaplastic cancer (<5%) and medullary cancer (5%) (Figure 1)^[5]. Patients with co-morbidities have a lower quality of life ^[8]. Comorbidities can have a negative

S. No: 36

Title of the Collaborative activity: Factors delaying the Diagnosis of Oral Cancer in India: A clinical insight

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Year of collaboration: 2021-22

Nature of the activity: Research

Factors delaying the Diagnosis of Oral Cancer in India: A clinical insight

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Abstract

Background: Cancer of the oral cavity is described as the uncontrolled proliferation of cells that can be observed in the Oral cavity. The sore in the mouth could resemble a growth or an open sore, but it won't go away. Cancers of the lips, tongue, cheeks, floor of the mouth, hard and soft palates, sinuses, and throat can develop in the oral cavity. Oral squamous cell carcinoma is the most prevalent kind of cancer found in mouths and throats. It is well known that tobacco use in any form, including smoking, chewing tobacco and alcohol consumption, has a substantial influence in the development of oral cancer. It would indicate that patients were unaware of this connection, despite the fact that this is widespread knowledge among medical professionals.

Objective: To assess delay in diagnosis of oral cancer. We carried out prospective research on people who had been given a diagnosis of oral cancer. This research paper looks at the disease's prevalence, the major risk factors for developing oral cancer in India, which include drinking alcohol, smoking or chewing tobacco, and Human papilloma virus (HPV) infections, as well as methods for preventing and treating oral cancer there.

Methods: To conduct this study Questionnaires were delivered, assessing oral habits, detect early sign of oral cancer and reasons for delay oral cancer treatment. The analysis made use of the statistical programme SPSS.

Design: Cross-sectional questionnaire-based study.

Result: There were a total of 150 people that took part in the survey. According to this, 68.7 % of oral cancer cases are caused by smoking, 60 % by drinking alcohol, and 65.3 % by chewing tobacco. It was shown that the level of awareness was directly linked to the education level.

Conclusions: The awareness level of oral cancer in this high-risk community was excellent; however, significant gaps exist, pointing to the need for focused health education as well as counseling to help individuals quit risk factors.

Keywords

Diagnosis, delay, oral cavity, mouth cancer, early detection, India.

Imprint

Rahul Kumar Singh, Raj K Kovid, Sachidanand Jee Bharati, Jyoti Batra, Deepak Saini, Akansha Singh, Suyash Saxena, Rahul Saxena⁸, Ajit Pal Singh. **Factors delaying the Diagnosis of Oral Cancer in India: A clinical insight.** *Cardiometry*; Special issue No. 25; December 2022; p. 1411-1418; DOI: 10.18137/cardiometry.2022.25.14111418; Available from: <http://www.cardiometry.net/issues/no25-december-2022/factors-delaying-diagnosis>

INTRODUCTION

Cancer is a disease that damages not only the body, but the entire person as well. Oral cancer presents a significant obstacle for patients, both in terms of its initial diagnosis and the subsequent therapy. Cancer is a disease that is particularly significant since it reflects a disruption of most fundamental rules governing the activity of cells in multicellular organisms. This makes cancer a disease that is one of a kind. If we want to comprehend cancer and devise effective treatments for it, we need to have a solid understanding of both the internal functioning of cells and the social interactions that occur between them in the body tissues. A patient's quality of life may be negatively impacted by oral cancer and its side effects, which lowers the overall survival rate. Patients may endure considerable dysfunction in talking and swallowing, along with changes in cosmetic appearance, sensory impairment,

S. No: 37

Title of the Collaborative activity: Diagnosis and treatment of Wilson disease: An update

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Year of collaboration: 2021-22

Nature of the activity: Research

Diagnosis and treatment of Wilson disease: An update

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Abstract

Wilson's illness is an autosomal dominant impairment of copper metabolism that results from the lack of or dysfunction of a copper-transporting P-type ATPase, which is expressed on chromosome 13. This ATPase is a component of the trans-Golgi network and is carried by hepatocytes. It transports copper into the secretory route where it is combined with ceruloplasmin and excreted as bile. Affected people gradually develop copper accumulation in the liver since the only pathway for copper excretion in physiological settings is through biliary clearance. Hepatocytes experience cell death when their storage capacity is exceeded, which causes hemolysis, copper leakage into the plasma, and tissue deposition. Children might experience rapid liver failure, silent cirrhosis, or chronic hepatitis. Among the neuropsychiatric symptoms induced by copper overload in the central nervous system that are frequently seen in young people are dystonia, tremors, temperamental disorders, and cognitive deficiencies. Test results showing lower ceruloplasmin levels in serum, elevated urine copper concentration, and elevated intrahepatic copper percentage indicate Wilson's illness. Because there are more than 100 distinct mutations and most people are compound heterozygotes, molecular genetic analysis is difficult. Copper treatment with penicillamine is a successful therapy for the vast number of patients, and liver transplantation is beneficial in situations of chronic liver failure. The molecular genetic causes of Wilson's disease have shed new light on the mechanisms governing cellular copper homeostasis.

Imprint

Ajit Pal Singh, Jyoti Batra, Sharafat Shafi Khan, Rahul Saxena, Suyash Saxena. Diagnosis and treatment of Wilson disease: An update. *Cardiometry*; Special issue No. 25; December 2022; p. 1397-1400; DOI: 10.18137/cardiometry.2022.25.13971400; Available from: <http://www.cardiometry.net/issues/no25-december-2022/diagnosis-treatment-wilson>

Introduction

It is a genetic condition marked by excessive organ copper buildup. Due to improper copper elimination in Wilson's illness, copper can build up to potentially lethal levels. Symptoms start between the ages of 12 and 23. Swelling, exhaustion, stomach ache, and erratically or clumsily coordinated movements are some symptoms (Das and Ray, 2006). Medication that stimulates the organs to release copper into the circulation is regularly used as a kind of treatment. The kidneys can get rid of it once it gets into the bloodstream. After several years of study, S. A. Kinnier Wilson successfully offered the first comprehensive, compelling explanation of both the pathological and clinical aspects of the occurrence which now bears his name. Our knowledge of Wilson's sickness has been enriched by the contributions of many other people. Wilson's disease's characteristic rings of corneal pigmentation were first characterised by Kayser in 1902 and by Fleischer in 1903 and 1912. Wilson's illness and increased hepatic copper levels were linked by Rumpel in 1913, but it wasn't until the research of Mandelbrote et al. and Cumings in 1948 that the mechanism of copper homeostasis in Wilson's illness was fully understood. Scheinberg and Gitlin, Bearn and Kunkel, and Frommer each made a diagnosis of ceruloplasmin deficiency in 1952 and reduced hepatic elimination of copper in 1974 for Wilson's illness. Genetic diagnosis and treatment for Wilson's illness have made tremendous strides in recent years. Wilson's disease is an uncommon autosomal-recessive disorder. It is common to estimate prevalence of Wilson's disease at 30 cases per million (or one per 30,000) and fertility rates of one per 30,000 to 40,000. In the United States, there are 600 cases of Wilson's sickness, which affects 1% of the population, according to predictions. Despite being essential for biological activity, free copper is exceedingly poisonous and therefore can permanently harm cells. Ingenious copper-binding methods have developed as a solution to this problem, ensuring the safe delivery of

S. No: 38

Title of the Collaborative activity: Circulatory Levels of Trace

Elements in Metabolic Syndrome Patients in a Tertiary Health Centre of
Uttar Pradesh

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Year of collaboration: 2021-22

Nature of the activity: Research

CIRCULATORY LEVELS OF TRACE ELEMENTS IN METABOLIC SYNDROME PATIENTS IN A TERTIARY HEALTH CENTRE OF UTTAR PRADESH

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Abstract

Background: Metabolic Syndrome refers to a set of metabolic attributes that are correlated to each other. These metabolic attributes contribute to the development of cardiovascular diseases, Diabetes Mellitus Type II, etc. directly. Minerals are physiologically present in the human body at various concentrations. Metabolic syndrome being a cluster of metabolic disorders, participation of minerals is of paramount importance. This metabolic disorder might be associated with the disturbances in the metabolism of minerals viz; zinc, copper, iron, etc. **Aim:** The current study aimed to estimate the levels of serum Trace elements like CU, Zn and Fe among Metabolic Syndrome patients and compare with the levels in healthy controls. **Methods:** The study was conducted on a total 220 individuals out of whom two groups were divided. Metabolic Syndrome case group had 110 subjects between 25-55 age groups who were selected according to the ATP III guidelines under the consultation of experts in Medicine department. Estimation of trace elements viz; Serum Copper and Serum Zinc was estimated by colorimetric methodology. Serum Iron was estimated by Ferrozine method, colorimetric assay. **Result:** The mean level of serum copper was observed to be 521 ± 376.7 $\mu\text{g/dl}$ in MetS cases whereas the mean concentration was 232.9 ± 138.25 $\mu\text{g/dl}$ among the healthy subjects. An insignificant higher value of circulating Zn was observed among the MetS cases i.e. 131.54 ± 92.7 $\mu\text{g/dl}$ as compared to the healthy controls which was 116.55 ± 62.81 $\mu\text{g/dl}$ ($p > 0.05$). Serum Iron concentration when compared between the study groups, mean concentration of serum iron was found to be 243.76 ± 154.4 $\mu\text{g/dl}$ in MetS subjects which was significantly higher than in the healthy controls with mean concentration 188.87 ± 129.2 $\mu\text{g/dl}$ ($p < 0.05$). **Conclusion:** The MetS patients show higher values of Serum Copper, Zinc and Iron and are correlated significantly with few of the attributes of Metabolic Syndrome.

Keywords: Metabolic Syndrome, Insulin resistance, Trace elements, Copper, Zinc, Iron.

INTRODUCTION

Metabolic Syndrome refers to a set of metabolic attributes that are correlated to each other. These metabolic attributes contribute to the development of cardiovascular diseases, Diabetes Mellitus Type II, etc. directly. Metabolic syndrome is linked to a number of metabolic derangements such as Insulin resistance, hypertension, visceral adiposity, oxidative stress, dyslipidemia, hyper-coagulable state, genetical susceptibility, endothelial dysfunction, pro-inflammatory responses, etc. Metabolic Syndrome (MetS) is also known as Syndrome X.¹ Of the major contributors for underlying pathogenesis of Metabolic Syndrome, sedentary lifestyles, lack of physical activities and exercise, high-calorie intake and abdominal obesity hold the leading positions.

There are several diagnostic criteria proposed for the clinical diagnosis of the Metabolic Syndrome based on the clinical features and presentations. Among those diagnostic criteria, ATP III guideline is the most globally accepted one according to which hyperglycemia, hypertriglyceridemia, decreased HDL Cholesterol, hypertension and abdominal obesity forms the basis of diagnosis. Any individuals having any three of the five above mentioned clinical presentations are diagnosed as Metabolic Syndrome. The disease burden of Metabolic Syndrome varies widely in the globe ranging from less than 10% to

S. No: 39

Title of the Collaborative activity: Role of Serum Retinol Binding

protein 4(RBP4) and it's Various Correlations in Type 2 diabetes mellitus

Population

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Year of collaboration: 2021-22

Nature of the activity: Research

Role of Serum Retinol Binding protein 4(RBP4) and it's Various Correlations in Type 2 diabetes mellitus Population

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Abstract

Diabetes mellitus is gaining the status of a potential epidemic and is the most common endocrine disorder, although major driving factors behind this epidemic are poor nutrition and lifestyle transitions, growing evidence supports a role of recently proposed adipokine i.e. Retinol binding protein 4 in the pathogenesis of type 2 diabetes mellitus Objective: To estimate serum RBP4 concentrations in type 2 diabetes mellitus patients and to correlate it with diabetic parameters like FPG, HbA1c, and BMI Methodology: 113 participants aged 35-55 years, both males and females were included, who were diagnosed and confirmed by the estimation of FPG (≥ 126 mg/dl) and HbA1c level ($\geq 6.5\%$) as type 2 diabetes mellitus patients. An equal number of age and sex-matched pre-confirmed non-diabetic individuals from hospital staff were recruited as controls. Serum RBP4 (Human) concentration was measured by quantitative sandwich enzyme-linked immunosorbent assay (ELISA) technology using Bioassay Technology Laboratory, ELISA kit Result: The concentration of serum RBP4 in the blood plasma of type 2 diabetes mellitus patients (76.53 ± 26.96 ng/ml) was found to be significantly higher than the healthy controls (53.77 ± 12.62 ng/ml), ($P < 0.001$). Positive correlations were found between serum RBP4 with FPG, HbA1c, and BMI in the diabetic groups ($p < 0.001$) Conclusion: The concentration of serum RBP4 was found to be increased in Type 2 diabetes mellitus patients, and related to various clinical parameters of diabetes, suggesting a role in the pathogenesis of Type 2 diabetes mellitus.

Keywords: Insulin resistance, Retinol binding protein 4, Type 2 diabetes mellitus.

INTRODUCTION

Diabetes mellitus has considered a potential epidemic and is the most common endocrine disorder.¹ Although major driving factors behind this epidemic are poor nutrition and lifestyle transitions, growing evidence suggests a role of adipokines and they may also be suggested as good markers of metabolic syndrome and unregulated production of these cytokines may change metabolic homeostasis, insulin sensitivity, immune response, and cardiovascular disease.²

Retinol binding protein 4 (RBP4) is a recently proposed adipokine, reported by contributing to insulin resistance and T2DM, belongs to the lipocalins family, and transports vitamin A (retinol) from the liver to peripheral tissues. The protein encoded gene is located on chromosome 10 (10q23.33) near regions encoding genes linked to increased levels of fasting glucose, such as gene TCF7L2 (10q25.3) which controls CREB and FoxO1 genes.³

Experimental studies have suggested that RBP4 is upregulated in insulin-resistant mouse models and in subjects with insulin resistance or type 2 diabetes mellitus. Furthermore, genetic knockout of GLUT4 expression in adipose tissue of mice results in reciprocal changes in adipose RBP4 expression and circulating RBP4 levels.³ Moreover, increasing serum RBP4 may induce

S. No: 40

Title of the Collaborative activity: Evaluation of Adverse Drug

Reactions among Diabetes Patients Treated With Antidiabetic Drug in

Tertiary Care Teaching Hospitals

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Year of collaboration: 2021-22

Nature of the activity: Research



Evaluation of Adverse Drug Reactions among Diabetes Patients Treated With Antidiabetic Drug in Tertiary Care Teaching Hospitals

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ABSTRACT

Diabetes mellitus is a chronic metabolic disorder caused by deficiency (inherited and/or acquired) of insulin production or by the development of insulin resistance that can be controlled by various types of newer or concurrent drugs which may lead to the occurrence of ADRs along with therapeutic responses with the aim of evaluation of ADRs in DM patients treated with Antidiabetic drugs. This was a prospective and observational study conducted in the Department of Pharmacology, Santosh Medical College and Hospital, Ghaziabad in Collaboration with the Department of Medicine, Muzaffarnagar Medical College, Muzaffarnagar. Total 100 patients of DM treated with Antidiabetic drugs and visited in OPD of Medicine, Muzaffarnagar Medical College were taken of whose ADRs were recorded and evaluated with the help of ADRs form uploaded by CDSCO-PvPI. The prevalence of ADRs was 20%(20/100) and Biguanide was the drug that exaggerated the maximum number of ADRs 30% predominantly in female patients 65%, those were reduced by the combination of various groups of antidiabetic drugs. ADRs exaggerated by Antidiabetic drugs were reduced by drug combinations of various groups of Antidiabetic drugs.

KEYWORDS: Diabetes mellitus, Antidiabetic drugs, ADRs, WHO-UMC, Naranjo's causality assessment scale.

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INTRODUCTION

Diabetes mellitus is a chronic disease caused by deficiency (inherited and/or acquired) of insulin production or by the development of insulin resistance. This deficiency leads to increased blood glucose concentrations that cause damages to various bodies' systems, particularly the blood vessels and nerves. Worldwide Diabetes mellitus is moderately increasing globally and about to reach an epidemic ratio in many countries [1-2]. The current data shows that 351.7 million people of working age (20-64 years) with diagnosed or undiagnosed diabetes in 2019 which is expected to increase to 417.3 million by 2030 and to 486.1 million by 2045. The maximum number will take place in regions where economies are moving from low- to middle-income status [3]. India has the second-largest diabetic population in the world. In 2015, about 60 million people in India are suffering from diabetes. Moreover, 75 million people are at the risk to develop diabetes and more than 65.1 million individuals have been diagnosed with the disease and the estimates suggest that 89 million patients may develop by 2030 [4]. Simultaneously the advent of newer drugs, the evolution of science, and the number of treatment options for a single disease have increased. But as every drug has it's a benefit as well as side effects. Therefore every drug in the therapeutic area poses both benefits as well as is a potential threat for causing severe side effects. At times, these side effects are preventable, and timely reporting of the same can avoid unwanted health hazards and save millions of people. Thus an initiative was made in the direction of same and was to design and implement adverse event reporting systems by individual nations and then were adopted by the whole world either collaboration with global organizations or individualizing their reporting system [5].

As we know that few effects of the drug are elicited only once the drug has been administered to a larger population for a longer duration of time. The adverse drug reaction or event reporting from such a huge population would be possible only after active involvement of the researchers and voluntary reporting

S. No: 41

Title of the Collaborative activity: Knowledge and practices

associated with use of drugs for prevention and treatment of covid-19,
during the rapid rise period of the covid-19 outbreak

Name of the collaborator: 1. Raj K Goel LLRM Medical College, Meerut,

UP, India

Name of the participants: Jyotsna Sharma

Year of collaboration: 2021-22

Nature of the activity: Research



Evaluation of Adverse Drug Reactions among Diabetes Patients Treated With Antidiabetic Drug in Tertiary Care Teaching Hospitals

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ABSTRACT

Diabetes mellitus is a chronic metabolic disorder caused by deficiency (inherited and/or acquired) of insulin production or by the development of insulin resistance that can be controlled by various types of newer or concurrent drugs which may lead to the occurrence of ADRs along with therapeutic responses with the aim of evaluation of ADRs in DM patients treated with Antidiabetic drugs. This was a prospective and observational study conducted in the Department of Pharmacology, Santosh Medical College and Hospital, Ghaziabad in Collaboration with the Department of Medicine, Muzaffarnagar Medical College, Muzaffarnagar. Total 100 patients of DM treated with Antidiabetic drugs and visited in OPD of Medicine, Muzaffarnagar Medical College were taken of whose ADRs were recorded and evaluated with the help of ADRs form uploaded by CDSCO-PvPI. The prevalence of ADRs was 20%(20/100) and Biguanide was the drug that exaggerated the maximum number of ADRs 30% predominantly in female patients 65%, those were reduced by the combination of various groups of antidiabetic drugs. ADRs exaggerated by Antidiabetic drugs were reduced by drug combinations of various groups of Antidiabetic drugs.

KEYWORDS: Diabetes mellitus, Antidiabetic drugs, ADRs, WHO-UMC, Naranjo's causality assessment scale.

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INTRODUCTION

Diabetes mellitus is a chronic disease caused by deficiency (inherited and/or acquired) of insulin production or by the development of insulin resistance. This deficiency leads to increased blood glucose concentrations that cause damages to various bodies' systems, particularly the blood vessels and nerves. Worldwide Diabetes mellitus is moderately increasing globally and about to reach an epidemic ratio in many countries [1-2]. The current data shows that 351.7 million people of working age (20–64 years) with diagnosed or undiagnosed diabetes in 2019 which is expected to increase to 417.3 million by 2030 and to 486.1 million by 2045. The maximum number will take place in regions where economies are moving from low- to middle-income status [3]. India has the second-largest diabetic population in the world. In 2015, about 60 million people in India are suffering from diabetes. Moreover, 75 million people are at the risk to develop diabetes and more than 65.1 million individuals have been diagnosed with the disease and the estimates suggest that 89 million patients may develop by 2030 [4]. Simultaneously the advent of newer drugs, the evolution of science, and the number of treatment options for a single disease have increased. But as every drug has it's a benefit as well as side effects. Therefore every drug in the therapeutic area poses both benefits as well as is a potential threat for causing severe side effects. At times, these side effects are preventable, and timely reporting of the same can avoid unwanted health hazards and save millions of people. Thus an initiative was made in the direction of same and was to design and implement adverse event reporting systems by individual nations and then were adopted by the whole world either collaboration with global organizations or individualizing their reporting system [5].

As we know that few effects of the drug are elicited only once the drug has been administered to a larger population for a longer duration of time. The adverse drug reaction or event reporting from such a huge population would be possible only after active involvement of the researchers and voluntary reporting

S. No: 42

Title of the Collaborative activity: Drug safety among Hypertensive patients treated with antihypertensive drugs in Tertiary care Teaching Hospitals.

Name of the collaborator: 1. Ila Pahwa Department of Medicine, Muzaffarnagar Medical College, Muzaffarnagar, Chaudhari Charan Singh University, Meerut, UP

Name of the participants: Lalendra Yadav, Shaktibala Dutta, Jyotsna

Sharma, Ila Pahwa, Vaishali Lotte, Amit Kumar

Year of collaboration: 2021-22

Nature of the activity: Research

Drug safety among Hypertensive patients treated with antihypertensive drugs in Tertiary care Teaching Hospitals

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Abstract

Introduction:- Hypertension is one of the essential health problems Worldwide. According to JNC I to VIII guidelines treatment of hypertension with various type of antihypertensive drugs either mono therapy or combination therapy is updated time to time. Selection of a drug is often based on the benefit-risk ratio is also called drug safety even no one drug has totally safe and can be measured on the basis of occurrence of beneficial effect verses Adverse effect. The reporting of ADRs in nations is still low as comparison to providing 10% of total medication in the world. So the present study is proposed on entitled Drug safety among Hypertensive patient treated with antihypertensive drugs in Tertiary care teaching Hospitals. **Materials and Methods:-** This was a prospective and observational study carried out in the department of Pharmacology, Santosh Medical College and Hospital, Ghaziabad in collaboration with Department of Medicine, Muzaffarnagar Medical College, Muzaffarnagar, A total 234 hypertensive patient of both gender and age above 18 years treated with any types of antihypertensive drug were selected for the study. ADRs were recorded and evaluated with the help of ADRs form uploaded by CDSCO-PvPI of whose causality assessment and severity score that were calculated by appropriate scale and. **Observation and Results:-** A total 16.67% of prevalence of ADRs were found in this study of whose Risk/Benefit were calculated and found that ARBs and BBs groups were the safest group of antihypertensive drug with smallest number of ADRs prevalence 14.14% and 15.15% with risk benefit ratios 0.16 and 0.18 respectively. **Conclusion:-** The results of the above study would be useful for the physicians in rational selection of drug therapy for

treatment of hypertensive patients. The present data suggest that the ADRs monitoring needs to be done in hospital settings continuously so that untoward effect caused by different medicines can be identified and documented to make better health care system and to stop further burden of unnecessary use of drug by patients health care system.

Imprint

Lalendra Yadav, Shaktibala Dutta, Jyotsna Sharma, Ila Pahwa, Vaishali Lotte, Amit Kumar. Drug safety among Hypertensive patients treated with antihypertensive drugs in Tertiary care Teaching Hospitals *Cardiometry*; Special issue No. 25; December 2022; p. 1349-1355; DOI: 10.18137/cardiometry.2022.25.13491355; Available from: <http://www.cardiometry.net/issues/no25-december-2022/drug-safety-among-hypertensive>

Introduction:

As we know that Hypertension is one of the essential health problems Worldwide. According to Joint National Committee 7th on prevention, detection, evaluation, and treatment of increased blood pressure (JNC-7th report 2003) and WHO-ISH guideline (2003) itself, it is not a disease but it is one of an important risk factor for cardiovascular mortality and morbidity and it to be above 140 mm Hg systolic and 90 mm Hg diastolic though risk appears to increase even above 120/80 mmHg¹ Previous report has been estimated that by the year 2030, hypertension projected 23 million cardiovascular deaths, of which about 85% cases will be from low-resource settings and developing countries.² In India, cardiovascular disease is said to contribute the largest burden of non-communicable diseases. The prevalence of hypertension among the Indian population is 29.8%.³ Scientific and research evidence exists to suggest that such outcomes can be prevented by lowering BP effectively.^{4,5} Recent studies in India show that hypertension is emerging as an essential health problem and is mainly responsible for 57% of all death due to stroke and 24% of all death due to coronary heart disease. Although numbers of people with hypertension are aware (69%) that they have the disease among them only 54% receive treatment and 27.4% achieve adequate BP control.⁶

According to JNC I to VIII guidelines treatment of hypertension with various type of antihypertensive drugs either mono therapy or combination therapy

S. No: 43

Title of the Collaborative activity: Effect of Atenolol plus Amlodipine
on Blood Sugar Level and Lipid Profile in Patients of Essential
Hypertensive Patients

Name of the collaborator: 1. Anil Kumar Sharma FH Medical College &
Hospital Etmadpur Agra

Name of the participants: Amit Kumar, Jyotsna Sharma, Shaktibala

Dutta, Anil Kumar Sharma, Lalendra Yadav

Year of collaboration: 2021-22

Nature of the activity: Research

Effect of Atenolol plus Amlodipine on blood sugar level and lipid profile in patients of essential hypertensive patients

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Abstract

Objectives: Study was conducted to evaluation effect of Atenolol plus Amlodipine on blood glucose level and lipid profile in essential hypertensive patients.

Materials and Methods: A Prospective Observational study was conducted at tertiary care teaching hospital which included a total 165 patients with essential hypertension. The demographic and baseline data, Random blood sugar level and lipid profile of the patients were recorded. After baseline investigation of each parameter of the patients were subsequently monitored and reassessed at 4th week, 8th week and 12th weeks of interval during each follow-up.

Results: Total 165 Patients were receiving Atenolol plus Amlodipine showed a significant increase Random blood sugar level and lipid profile (Total cholesterol, Total triglyceride, Low-density lipoprotein, Very-low density lipoprotein, and High density lipoprotein) except HDL (High density lipoprotein) which was significant reduced at the end of 4th, 8th and 12th weeks of interval as compared to their baseline data.

Conclusion: The Finding of the present study was that the effect of Atenolol plus Amlodipine on Random blood sugar level, Total cholesterol, Total triglyceride, Low-density lipoprotein, Very-low density lipoprotein, significant increase (p-value <0.0001) at the end of 12 week of treatment therapy from baseline data. HDL was significant reduced (p-value <0.0001) with the treatment of Atenolol plus Amlodipine at the end of treatment from baseline data

Imprint

Amit Kumar, Jyotsna Sharma, Shaktibala Dutta, Anil Kumar Sharma, Lalendra Yadav. Effect of Atenolol plus Amlodipine

on blood sugar level and lipid profile in patients of essential hypertensive patients. *Cardiometry*; Special issue No. 25; December 2022; p. 1375-1379; DOI: 10.18137/cardiometry.2022.25.13751379; Available from: <http://www.cardiometry.net/issues/no25-december-2022/effect-ateno-lol-plus-amlodipine>

Hypertension is the most prevalent, complex quantitative trait which is characterized by chronic increase in the blood pressure <140/90 mm Hg. Because of the associated morbidity and mortality and the cost to society, hypertension is an important public health challenge.¹ High blood pressure is one of the known risk factors for stroke, coronary artery disease, congestive heart failure, end-stage renal and cerebrovascular disease. About one billion of the world's adult population suffered hypertension in the year 2020; but this data is expected to increase by 29% which is 1.56 billion by the year 2025.² Increase blood pressure is directly responsible for 57% of all deaths due to stroke and 24% of all deaths due to coronary heart disease.³ Treatment of increase blood pressure at an early stage has been associated with 40% reduction in the risk of stroke and 15% reduction in the risk of myocardial infarction.⁴

The current European Society of Hypertension (ESH) and European Society of Cardiology (ESC) guidelines define hypertension as BP >140/90 mmHg and recommend a treatment target of <140/90 mmHg and <130/80 mmHg in the general hypertensive population and in patients with diabetes mellitus (DM) respectively.⁵

Initial treatment can reverse and decrease the complications like stroke, coronary artery disease, congestive heart failure, and other cerebrovascular disease which is associated with hypertension. The different type of antihypertensive drug is available for the treatment of increase blood pressure which is include thiazide diuretics, beta-blockers, calcium channel blockers (CCBs), angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs). Beta Blockers are widely used in the clinical management of hypertension. β -blockers have long been considered as first line antihypertensive drugs. A number of clinical trials such as STOP, CAPP, NORDIL and JNC 7 recommend β blockers in the initial management of hypertension.^{6,7,8} Atenolol, a β 1-blocker, is a commonly used antihypertensive agent, and has often been used as a reference drug in a number of clinical

S. No: 44

Title of the Collaborative activity: Effectiveness Of Diacerein In
Treatment Of Knee Osteoarthritis

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Name of the participants: Mukesh Kumar^{1*}, Shaktibala Dutta²

Jyotsna Sharma³, Vaishali Babasaheb Lote⁴, Kuldeep Kumar Gogia⁵,

Mithilesh Kumar⁶, Vishal Prakash Giri⁷, Rahul Agarwal

Year of collaboration: 2021-22

Nature of the activity: Research

Effectiveness Of Diacerein In Treatment Of Knee Osteoarthritis

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Doi: 10.47750/pnr.2022.13. S05.111

Abstract

Background: Osteoarthritis (OA) is a common joint disorder. Oral non-steroidal anti-inflammatory drugs (NSAIDs), including selective cyclooxygenase-2 (COX-2) inhibitors, are the mainstay of pharmacotherapy but it can not be used for long time due to their adverse effects. Diacerein is a COX-2 inhibitor, an advantage of using diacerein in OA treatment is, that Diacerein does not affect the synthesis of prostaglandins, and does thereby not have a deleterious effect on the upper gastro-intestinal mucosa. This is an important advantage compared to NSAID treatment. But still there is still no consensus on the place of Diacerein in OA because there is lack of pragmatic trials those have evaluated the effectiveness of Diacerein in real life situations.

Objective: So this study was planned to evaluate the effectiveness of Diacerein in symptomatic treatment of knee OA.

Methods: All the Patients were given Diacerein 50 mg BD. The evaluation of effectiveness will be in terms of improvements in symptoms and physical functions of patients.

Results: Diacerein is not as effective in controlling clinical symptoms of knee Osteoarthritis as it claimed to be. It also takes long time to show a clinically relevant & appreciable effect.

Conclusion: Diacerein is an overrated drug in Osteoarthritis which is mainly due to lack of pragmatic trials of this drug. Pragmatic clinical trials should must be done to know the real place of a drug in management of any condition

Keywords: Osteoarthritis, NSAID, SYSADOA, ESCEO, WOMAC, NSAID

INTRODUCTION

Osteoarthritis (OA) is a common joint disorder and may occur in any synovial joint in the body, although the condition is most common in knee joint in Indian population. The pharmacological management of OA is mainly symptomatic¹. Paracetamol is the first-line oral analgesic, whilst oral non-steroidal anti-inflammatory drugs (NSAIDs), including selective cyclooxygenase-2 (COX-2) inhibitors, are the mainstay of therapy^{2,3}, but NSAIDs and paracetamol are known to cause potentially severe hepatic, gastrointestinal, renal, cutaneous and cardiovascular reactions, so these drug cannot be used for long time. Therefore, there remains a need for a therapeutic agent for OA that has symptom-modifying effects and a better safety profile⁶. Diacerein was introduced to fill this gap. An advantage of using diacerein in OA treatment is, that Diacerein does not affect the synthesis of prostaglandins, and does thereby not have a deleterious effect on the upper gastro-intestinal mucosa which is an important advantage compared to NSAID treatment.⁴ But still there is no consensus on the place of SYSADOAs in general but Based on a literature review of clinical trials and meta-analyses, the ESCEO confirms that the efficacy of Diacerein is similar to that of non-steroidal anti-inflammatory drugs (NSAIDs), and superior to that of paracetamol after the first month of treatment.⁵ Although there are many explanatory trials which have evaluated the efficacy of Diacerein in OA knee but still there is lack of pragmatic trials those have evaluated the effectiveness of Diacerein in real life situations. So this study was planned to know the effectiveness of Diacerein in real life setting to evaluate effectiveness of Diacerein in relieving symptoms and improving physical functions of patients with knee osteoarthritis.

S. No: 45

Title of the Collaborative activity: M308 Seasonal variation of vitamin d levels in northwestern India - A retrospective study

Name of the collaborator: 1. S. Karli All India Institute of Medical Sciences, Jodhpur, India


Name of the participants: S. Karli a, S. Tomo b, M. Banerjee

Year of collaboration: 2021-22

Nature of the activity: Research



M308 Seasonal variation of vitamin d levels in northwestern India - A retrospective study

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^a All India Institute of Medical Sciences, Jodhpur, India

^b Santosh Medical College & Hospital, India

Available online 9 June 2022, Version of Record 9 June 2022.

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Section snippets

Background-aim

25-hydroxy vitamin D (25(OH) D) deficiency is prevalent worldwide including India. Earlier some cross-sectional studies have revealed Vitamin-D deficiency and its prevalence. The correlation of Vitamin D with trend analysis of the annual and seasonal variation of vitamin-D levels has not been reported earlier from north western India...

Methods

Analysis of vitamin D was performed in biochemistry laboratory between 2018 and 2020. Data was acquired from Electronic Medical records of the hospital. The months of the year have been separated into the following seasons for the purpose of analysing seasonal trends: Summer/monsoon (March–September), and winter/spring (October–March). Less than 20 ng/mL of serum vitamin D levels were defined as Vitamin D deficiency...

Results

A total of 11,428 assays of serum 25(OH)D were performed in the study. The median vitamin D was 17.2 ng/mL. We observed the prevalence of 60%, 24.1% & 15.9% of vitamin D deficiency, vitamin D insufficiency and sufficiency respectively in the total no of individuals tested. 56% male and 63% females were vitamin D deficient. Notably, the lowest median vitamin D value was found in the 21-30 age group (14.8 ng/mL). and the 31-40 age group (16.6 ng/mL). Significant difference of median vitamin D...

S. No: 46

Title of the Collaborative activity: Guided implant surgery with R2Gate®: A multicenter retrospective clinical study with 1 year of follow-up

Name of the collaborator: 1. Laurent Sers Private Practitioner, 54 Rue d'Antibes, Cannes 06400, France, 2. Guido Picciocchi Private Practitioner, via Brigata Liguria 3, Genova 16121, Italy

Name of the participants: Rani Srivastva 1, Alka Sabharwal 2, Alka Agrawal 3, Anita 1, Himanshu Vershney 3, Yashaswini Srivastava

Year of collaboration: 2021-22

Nature of the activity: Research



Guided implant surgery with R2Gate®: A multicenter retrospective clinical study with 1 year of follow-up ☆

[Segin Chandran](#)^a, [Laurent Sers](#)^b, [Guido Picciocchi](#)^c, [Fabrizia Luongo](#)^d, [Henriette Lerner](#)^e, [Marcus Engelschalk](#)^f,
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Abstract

Purpose

To present the results obtained with a novel sleeveless and keyless guided implant surgery system.

Methods

Inclusion criteria for this multicenter clinical retrospective study were fully or partially edentulous patients who had been treated with a sleeveless and keyless guided implant surgery system (R2Gate®, Megagen), and who had been rehabilitated with fixed restorations, with a minimum follow-up of 1 year. All surgeries and prosthetic procedures were conducted following the same protocol, and data were obtained from the patients' medical records. The outcomes were the fit and stability of the surgical guide, any intra-operative and immediate post-operative complications, any biologic and prosthetic complications that occurred during the 1-year follow-up period, implant survival, and prosthetic success.

S. No: 47

Title of the Collaborative activity: Personality and achievement: A

follow-up study

Name of the collaborator: 1. Alka Sabharwal Department of Statistics,

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Year of collaboration: 2021-22

Nature of the activity: Research

FULL TEXT LINKS

Ind Psychiatry J. 2022 Jan-Jun;31(1):19-25. doi: 10.4103/ipj.ipj_57_21. Epub 2022 Apr 12.

Personality and achievement: A follow-up study

Rani Srivastva ¹, Alka Sabharwal ², Alka Agrawal ³, Anita ¹, Himanshu Vershney ³,
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PMID: 35800869 PMCID: PMC9255607 DOI: [10.4103/ipj.ipj_57_21](https://doi.org/10.4103/ipj.ipj_57_21)[Free PMC article](#)

Abstract

Background: The health and well-being of medical students along with their successful progression is an important concern for society. Studies across the world demonstrated a high prevalence of psychiatric morbidity and low self-esteem among medical students requires immediate attention and effective management.

Aim: To compare the symptoms of depression, anxiety, and stress between the groups who have cleared all papers in the first attempt with those who have got supplementary at least in one paper during their MBBS course.

Materials and methods: Raven's Progressive Matrices Scale, Eysenck personality Questionnaire, Sinha's Anxiety Scale, Stress Reaction Check (SRC) List, and 16-Personality Factors questionnaires were used along with performance score was recorded for the objective of the study.

Results: Nonparametric tests, Mann-Whitney and Wilcoxon are used and found that RSPM scores and EPQ Lie-scale scores are statistically different as the $P < 0.05$. Overall performance and psychological problems association are found out using Spearman's correlation test and it is found that Factor C and Tough poise under 16 PF are significantly correlated.

Conclusions: The study concluded that there is a significant difference between the abstract reasoning between the two groups of students measured by RSPM. When the students are compared by taking gender as grouping variable the study concluded psychosis, lie scale value is significantly different in the two groups and the mean value is higher in the female group. It is also concluded that the stress level measured by SRC is significantly different and the mean value is higher in the female group. Furthermore, the global factors Tough poise and independence are found to be significantly different in two groups with 16 PF questionnaire.

Keywords: Academic performance; Mann-Whitney test; Spearman rank correlation; personality questionnaire.

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S. No: 48

Title of the Collaborative activity: Autogenous grafts for reconstruction arthroplasty in temporomandibular joint ankylosis: a systematic review and meta-analysis

Name of the collaborator: 1. Divesh Sardana T.H. Chan School of Public Health, Harvard University, Boston, MA, USA

Name of the participants: Neeti Mittal 1, Manoj Goyal 2, Divesh Sardana

Year of collaboration: 2021-22

Nature of the activity: Research

S. No: 48

FULL TEXT LINKS



Review [Br J Oral Maxillofac Surg](#). 2022 Nov;60(9):1151-1158. doi: 10.1016/j.bjoms.2022.05.012.

Epub 2022 Jun 11.

Autogenous grafts for reconstruction arthroplasty in temporomandibular joint ankylosis: a systematic review and meta-analysis

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PMID: 35811261 DOI: [10.1016/j.bjoms.2022.05.012](https://doi.org/10.1016/j.bjoms.2022.05.012)

Abstract

Autogenous methods for reconstruction arthroplasty (RA) for the surgical management of the temporomandibular joint (TMJ) have been extensively reported. The present review was aimed to systematically review and pool data on clinical outcomes of autogenous grafts for RA in subjects with TMJ ankylosis. Major electronic databases and prominent subject-specific journals were searched up to December 2020. Randomised controlled trials (RCT), cohort studies, and retrospective studies reporting outcomes of autogenous grafts for RA in TMJ ankylosis were included. A total of 35 studies with 700 subjects was included. The most commonly employed grafts were costochondral grafts (CCG) and coronoid process grafts. Postoperative change in maximum incisor opening (MIO) was comparable amongst all grafts and was in the clinically acceptable range (27.21-31.38 mm). The recurrence rate was comparable for all grafts and was \approx 8% except for coronoid grafts, where the recurrence rate was 2.98%. Growth assessment for CCG revealed that 55.89%, 30.89%, and 13.24% of subjects depicted optimal growth, overgrowth, and undergrowth, respectively. Within the limitations of the present review, the recurrence rate for all grafts was comparable except for coronoid graft, which depicted least recurrence rate and resultant postoperative change in MIO was in the clinically acceptable range.

Keywords: Autogenous grafts; Coronoid; Costochondral; Reconstruction arthroplasty; TMJ ankylosis.

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Supplementary concepts

[Temporomandibular ankylosis](#)

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Medical

S. No: 49

Title of the Collaborative activity: Stainless steel vs. titanium

miniscrew implants: Evaluation of stability during retraction of maxillary and mandibular anterior teeth

Name of the collaborator: 1. Stutee Bali Grewal Grewal Dental

Practice, Aster Avenue, Phase 4, DLF, Gurgaon, Haryana, India

Name of the participants: Himanshu Garg, Rajiv Ahluwalia, Stutee Bali

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Year of collaboration: 2021-22

Nature of the activity: Research

J Orthod Sci. 2022 Oct 13;11:49. doi: 10.4103/jos.jos_198_21. eCollection 2022.

Stainless steel vs. titanium miniscrew implants: Evaluation of stability during retraction of maxillary and mandibular anterior teeth

Himanshu Garg ¹, Rajiv Ahluwalia ², Stutee Bali Grewal ³, Sandeep Kumar Pandey ¹, Ankit Mahesh ², Nidhi Saini ²

Affiliations

Affiliations

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PMID: 36411809 PMCID: [PMC9674937](#) DOI: [10.4103/jos.jos_198_21](#)

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Abstract

Objectives: This study was aimed to compare the stability of stainless steel and titanium miniscrew implants of the same diameter and length during en masse retraction of maxillary and mandibular anterior teeth.

Materials and methods: Forty miniscrew implants (1.3 mm diameter and 8 mm length) were placed in 10 patients (20 titanium and 20 stainless steel). Stability was checked at insertion (T0), at one month (T1), and at sixth months (T2) and the amount of retraction was recorded in millimeters.

Results: Titanium and stainless steel implants were equally stable at the time of insertion. At T1, three titanium miniscrew implants showed grade 2 mobility, whereas seven stainless steel miniscrew implants showed grade 2 mobility. For T2, none of the titanium miniscrew implants had grade 2 mobility while four stainless steel miniscrew implants resulted in grade 2 mobility. Both had an equal frequency of grade 3 and grade 4 mobility. However, the difference in the stability was not statistically significant. No statistical significance was found when the amount of retraction achieved by titanium and stainless steel miniscrew implants was compared between the maxillary and mandibular arches.

Conclusion: Both titanium and stainless steel miniscrew implants provide good anchorage and remain stable during en masse retraction of maxillary and mandibular anterior teeth. Thus, both miniscrews are clinically effective.

Keywords: Miniscrew implant; retraction; stability; stainless steel; titanium.

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Figures

S. No: 50

Title of the Collaborative activity: Comparative Evaluation of Different Varnishes and Pit and Fissure Sealants on Streptococcus mutans Count in Saliva of Children

Name of the collaborator: 1. Rachna Sharma Department of Pediatric and Preventive Dentistry, DY Patil Deemed To Be University School of Dentistry, Navi Mumbai, Maharashtra, India.

Name of the participants: Rachna Sharma 1, Natasha Ghambir 2, Nidhi Gupta 2, Rashi Singh

Year of collaboration: 2021-22

Nature of the activity: Research

S. No: 50

FULL TEXT LINKS

Int J Clin Pediatr Dent. 2022 May-Jun;15(3):362-365. doi: 10.5005/jp-journals-10005-2385.

Comparative Evaluation of Different Varnishes and Pit and Fissure Sealants on *Streptococcus mutans* Count in Saliva of Children

Rachna Sharma ¹, Natasha Ghambir ², Nidhi Gupta ², Rashi Singh ²

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PMID: 35991797 PMCID: [PMC9357540](#) DOI: [10.5005/jp-journals-10005-2385](#)

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Abstract

Aim: This study aims to evaluate and compare the effect of different varnishes: 3M ESPE Clinpro and Voco Profluorid and fissure sealants- 3M ESPE ClinPro and Ivoclar Vivadent Helioseal-F on the *S. mutans* count in the saliva of children.

Materials and methods: Eighty children of 6-12 years of age with no incidence of caries were selected and saliva samples were collected by drooling method after oral prophylaxis. The children were divided randomly into four groups and materials were applied accordingly. Saliva samples were obtained immediately after the procedure as well as 1-month, 3-months and 6-months posttreatment. Saliva samples were inoculated on Mitis salivarius agar and colony counts of *S. mutans* were obtained.

Results: This study showed that both the varnishes and pit and fissure sealants were equally effective in reducing the salivary *S. mutans* count in children in a time period of 6-months however pit and fissure sealants were more effective in preventing caries.

Conclusion: Both varnishes and pit and fissure sealants are equally effective in reducing *S. mutans* count in saliva.

How to cite this article: Sharma R, Ghambir N, Gupta N, *et al.* Comparative Evaluation of Different Varnishes and Pit and Fissure Sealants on *Streptococcus mutans* Count in Saliva of Children. Int J Clin Pediatr Dent 2022;15(3):362-365.

Keywords: Pit and fissures; *S. mutans*; Sealant; Varnish.

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S. No: 51

Title of the Collaborative activity: Ameloblastoma Or Dentigerous

Cyst-A Diagnostic Quandary

Name of the collaborator: 1. Shalini Dixit FMS International Dental

Clinic, Hyderabad, 2Private Practitioner

Name of the participants: Shalini Dixit¹, Binita Srivastava², Nidhi

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Year of collaboration: 2021-22

Nature of the activity: Research

Ameloblastoma Or Dentigerous Cyst- A Diagnostic Quandary

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DOI: 10.47750/pnr.2022.13.S04.233

Abstract

Orofacial swellings are a major concern these days as they are first interrogated by a pediatric dentist in younger age group. The range of swelling varies from orofacial infections to tumors. Ameloblastoma is rare to be seen in younger age group but still plays an important role in pediatric dentistry. Ameloblastoma is benign and odontogenic and nature most importantly they are recurrent in nature. Unicystic ameloblastoma is majorly confused with keratocyst, due to which it becomes a quandary in diagnosis. It mostly effects mandible and female predilection is higher. In this case report, we present a unicystic ameloblastoma with mural proliferation in 8 years old child.

Keywords: Ameloblastoma, recurrent, Quandary.

INTRODUCTION

Orofacial swellings are the major health care problems in young adults. Generally, it is very easy to focus strictly on the chief complaint and remain oblivious to other oral findings. We as pediatric dentist holds the responsibility to care and maintain the dento – cranial system of a growing child. Common intra-oral swellings are generally diagnosed in pediatric patients are Odontomes, dentigerous cyst, eruption cyst odontogenic keratocyst, ameloblastoma and cysts or swellings of non-odontogenic origin. According to the studies ameloblastomas are commonly benign and odontogenic in nature. It has a very high tendency of recurrence rate.^{1,2} In this report, we describe 8 years old girl who was diagnosed with unicystic ameloblastoma with mural proliferation.

GENERAL CHARACTERISTICS OF UNICYSTIC AMELOBLASTOMA

ETIOLOGY

Unicystic ameloblastoma seems to appear mostly from remaining primitive dental lamina which is present in not fully erupted, gingiva, alveolar bone, and teeth apices. Term ameloblastoma in 1934 was first used by Churchill.³Falkson in 1879 gave a descriptive variant and divided into four variants-

1. Classic solid/multicystic ameloblastoma
2. Unicystic ameloblastoma
3. Peripheral ameloblastoma
4. Desmoplastic ameloblastoma including the so-called hybrid lesion

INCIDENCE AND PREDILECTION

S. No: 52

Title of the Collaborative activity: Comparative Evaluation Of Clinical Performance Of Giomer Based And Hydrophilic Resin Based Pit And Fissure Sealant In Primary Molars: ASplit Mouth Clinical Trial

Name of the collaborator: 1. Manvi Malik Professor, Department of Pediatric and Preventive Dentistry, ITS-CDSR, Muradnagar, Ghaziabad

Name of the participants: Divya Singh*, Manvi Malik**, Shivani Mathu

Year of collaboration: 2021-22

Nature of the activity: Research

Comparative Evaluation Of Clinical Performance Of Giomer Based And Hydrophilic Resin Based Pit And Fissure Sealant In Primary Molars: A Split Mouth Clinical Trial

Divya Singh*, Manvi Malik**, Shivani Mathur***

*Assistant Professor, Department of Pediatric and Preventive Dentistry, Santosh Deemed to be University, Santosh Dental College and Hospital, Ghaziabad

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DOI: 10.47750/pnr.2022.13.S04.229

Abstract

Aim: The current in vivo study is done to compare the retention, marginal staining, marginal integrity, and development of new carious lesions between a hydrophilic resin-based sealant and a giomer-based pit and fissure sealant on primary molars. **Study Design:** 180 primary molars from 45 participants are taken into consideration in this randomised clinical investigation. 90 primary molars were sealed with Beautisealant (Group 1) and the other 90 primary molars were sealed with Embrace Wet Bond sealant (Group 2). To evaluate the clinical performance Modified USPHS criteria will be used and applied immediately following sealant application, at 3, 6, and 12 months. The entire set of data was gathered, entered into MS Excel, and examined with SPSS 16.0. The parameters of clinical evaluation were compared using the Fisher's exact test and the Pearson Chi-Square test. **Result:** At the end of 12 months, 75.9% of group 2 primary molars still had sealants in place, compared to 26.2 percent of group 1, which is statistically significant (p.001). **Conclusion:** Hydrophilic sealants may be employed as efficient fissure sealants, particularly in children who are at high risk for tooth decay, overly salivate, are physically and intellectually challenged, have partially erupted molars, and for children enrolled in community care programs.

Keywords: Children Dentistry, Primary molars, Pits and Fissures, Hydrophobic sealants, Hydrophilic sealants, Retention.

Introduction

Pits and fissures are regarded as the one factor that contributes the most to the development of occlusal caries.¹ Children's high prevalence and quick development of occlusal caries are most likely caused by several factors, including the deep pits and fissures to house bacteria and nutrients as well as the near proximity of their bases to the dentinoenamel junction. Due to surface tension, salivary access to the fissures is restricted, thus inhibiting remineralization and decreasing the efficacy of fluoride, contributing to the high incidence of occlusal caries.² Pit and fissure sealants are materials that are placed in the occlusal pits and fissures of teeth that are prone to dental caries. These materials produce a micromechanically bonded barrier coating, preventing caries-causing bacteria from accessing their source of nutrients.³ Various factors determine the effectiveness of sealants for caries prevention such as child's cooperation (moisture control), timing of sealant placement and long term retention.⁴ Retention depends upon morphology of pit and fissures, adequate isolation, conditioning of enamel, application techniques, particular material characteristics like adequate adhesion.⁵ The properties required for an ideal fissure sealant include biocompatibility, anticariogenicity, adequate bond strength, good marginal integrity, resistance to abrasion and wear and cost effectiveness.⁶

S. No: 53

Title of the Collaborative activity: Pattern of Associated Injuries in
Maxillofacial Trauma-A Retrospective Study

Name of the collaborator: 1. Dr. Ashish Sharma Professor and Head,
Department of Oral and Maxillofacial Surgery, ITS Dental College Greater
Noida

Name of the participants: Dr. Anupam Bhardwaj¹, Dr. Ashish Sharma²,
Dr. Bharti Dua³, Dr. Amit B. Lall⁴, Dr. Mayank Singhal⁵, Dr. Sanjeev Tomar

Year of collaboration: 2021-22

Nature of the activity: Research

Pattern Of Associated Injuries In Maxillofacial Trauma- A Retrospective Study

Dr. Anupam Bhardwaj¹, Dr. Ashish Sharma², Dr. Bharti Dua³, Dr. Amit B. Lall⁴, Dr. Mayank Singhal⁵, Dr. Sanjeev Tomar⁶

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Institution Santosh Dental College, Santosh Deemed To Be University Ghaziabad

DOI: 10.47750/pnr.2022.13.S04.224

Abstract

Objective- The primary objective of this study was to determine the pattern of associated injuries along with the maxillofacial trauma.

Methodology- Data collection was done retrospectively from the previous records of 10 years for patients affected with facial trauma along with associated injuries. Age, gender, cause, type of injury and fractures elsewhere in the body was also recorded.

Results- Total out of 750 patients 110 patients were included in the study on meeting the inclusion and exclusion criteria. Most common associated injuries in maxillofacial trauma were head injury (51.82%) followed by orthopaedic injury (44.54%).

Conclusion- Head is in close proximity and also the most prominent part to the maxillofacial region therefore it is most susceptible to injury along with maxillofacial injury.

Keywords: Associated injuries, Facial trauma, Road traffic accident.

INTRODUCTION

Injuries to the Upper and lower limb, hip bone and chest occur due to high and low force of impacts arising from road traffic accidents (RTA), assaults, gunshot wounds, blasts, sports, falls etc. Mostly all age groups are affected. More than 1 million people die and around 15 to 20 million people are affected in road traffic accidents (RTA) annually according to the statistics of World Health Organization (WHO). The initial assessment of a person who is injured significantly from poly-trauma is a challenging task and each minute makes a difference between life and death. So immediate diagnosis and intelligent

S. No: 54

Title of the Collaborative activity: Effect of Neurodynamic

Mobilisation plus Core Stability on Pain and Motor Nerve Conduction

Velocity in Athletes with Lumba

Name of the collaborator: 1) Dept of Pediatrics, JNMC AMU, India

Name of the participants: 1) Raj Kumar Sharma

Year of collaboration: 2021-22

Nature of the activity: Research

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 only (CS). NDS plus CS underwent neural mobilisation of the tibial nerve and core stability exercises, while CS group performed core stability for a total of 14 sessions on alternate days. The outcome measures of motor nerve conduction velocity (m NCV) of the tibial 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.** Baseline scores of pain and m NCV (NDS plus CS: 6.75 ± 0.62 , 38.10 ± 7.21 and CS: 6.58 ± 0.79 , 38.92 ± 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 main effects for group on pain level ($F(2, 5.34) = 0.89$, $p < 0.001$) and m NCV ($F(2, 5.21) = 0.40$, $p < 0.03$). 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 tibial nerve in athletes with lumbar radiculopathy.

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

Introduction

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 [1]. Lumbar radiculopathy (LR) is a common debilitating condition of lumbar 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 61% [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 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 herniation has a favorable natural history in the vast majority of patients. As per research, around 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 [11]. Considering that it is not completely self-limiting in significant percentage of patients, the importance of intervention in athletes becomes even more pertinent [1]. Pain and decrease in the motor nerve conduction velocity (m NCV) are commonly seen findings in those afflicted with LR. 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 (L4-L5 and L5-S1). 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 LR [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-

S. No: 55

Title of the Collaborative activity: Study of histological changes of placenta in pregnancy-induced hypertension in poorvanchal region of Uttar Pradesh, India

Name of the collaborator: 1) Department Pathology, Government Medical College and Superfacility Hospital, Azamgarh, Uttar Pradesh, India

Name of the participants: 1) Vishram Singh, 2) Rashi Singh, 3) Yogesh Yadav, 4) Kumud Ranjan

Year of collaboration: 2021-22

Nature of the activity: Research

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Study of histological changes of placenta in pregnancy-induced hypertension in poorvanchal region of Uttar Pradesh, India

Singh, Vishram^a; Ranjan, Kumud^b ; Tewarson S.^c; Singh, Rashi^a; Yadav, Yogesh^a

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Abstract

Introduction: The placenta is a fetomaternal organ. It is a connection of the fetus with the uterine wall of mother. Through the placenta, exchange of gases and nutrient supply takes place. Through the placenta, fetal blood tissue comes in direct contact with the maternal blood without any rejection. It is a special transient organ of pregnancy. In our study, we carried out the microscopic examination of the placenta in pregnancy-induced hypertension, i.e., syncytial knot, cytotrophoblastic cellular proliferation, fibrinoid necrosis, endothelial proliferation, and calcified villous spot. **Material and Methods:** One hundred and fifty-two placentas of full-term pregnancy were collected from the labor room/operation theater of the Gynecology and Obstetrics Department of the Government Medical College and Superfacility Hospital Azamgarh. Out of one hundred and fifty-two placentas, 76 cases were controls from mothers with no known history of preexisting hypertension and 76 were collected from mothers with pregnancy-induced hypertension. Placentas were kept in 10% formalin for 24 h for

S. No: 56

Title of the Collaborative activity: Assessment of C-reactive protein, procalcitonin and interleukin-6 as diagnostic aid for neonatal infections at a tertiary care center

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

Institute of Medical Sciences, Uttar Pradesh, Gorakhpur, 273008, India;

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Name of the participants: 1) Jayesh Pandey, 2) Dakshina Bisht

Year of collaboration: 2021-22

Nature of the activity: Research



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Assessment of C-reactive protein, procalcitonin and interlukin-6 as diagnostic aid for neonatal infections at a tertiary care center

Pandey, Jayesh^a; Bisht, Dakshina^a ; Mittal, Mahima^b; Singh, Amresh Kumar^c

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^a Department of Microbiology, Santosh Medical College, Santosh Deemed to be University, Uttar Pradesh, Ghaziabad, 201009, India

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Abstract

Introduction and Aim: Neonatal infections are the leading cause of mortality among neonates after prematurity. The importance determining biological markers to be used as a diagnostic test to detect neonatal infections in the early stage of the disease is a challenge. The purpose of this study was to evaluate the usefulness & sensitivity of various serological markers such as serum Procalcitonin, C-reactive protein and chemokine IL-6 for diagnosis of neonatal infections leading to sepsis in newborn infants. **Materials and Methods:** This cross-sectional study was carried out among newborns admitted in neonatal intensive care unit (NICU) and meeting the selection criteria. Samples were collected for

S. No: 57

Title of the Collaborative activity: Evaluation of Antibiotic Prescribing Practices and Antimicrobial Sensitivity Patterns in Urinary Tract Related Infectious Diseases in Pediatric Patients

Name of the collaborator: 1) Department of Clinical Pharmacy, College of Pharmacy, King Khalid University, Abha, Saudi Arabia;

Name of the participants: 1) Fauzia Tabassum

Year of collaboration: 2021-22

Nature of the activity: Research



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Evaluation of Antibiotic Prescribing Practices and Antimicrobial Sensitivity Patterns in Urinary Tract Related Infectious Diseases in Pediatric Patients

Alavudeen, Sirajudeen S.^a; Asiri, Anas Ali^a; Fageeh, Shatha Abdulrahman^a; Aljarie, Ahmed Abdoh^b; Iqbal, Mir Javid^c; Khan, Noohu Abdulla^a; Tabassum, Fauzia^d; Rahamathulla, Mohamed^e; Hani, Umme^e;

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Abstract

Complications of urinary tract infections (UTIs) like kidney failure and septicemia develop once infections spread from the upper urinary tract to other parts of the body by haematogenous dissemination and they pose great health and economic burden to the countries. This retrospective study

S. No: 58

Title of the Collaborative activity: Impact of polycystic ovary syndrome on quality of life of women in correlation to age, basal metabolic index, education and marriage

Name of the collaborator: 1) Department of Gynecology and Obstetrics, All India Institute of Medical Sciences, Patna, Bihar, India;
2) College of Pharmacy, King Khalid University, Abha, Saudi Arabia

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

Year of collaboration: 2021-22

Nature of the activity: Research



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10.1371/journal.pone.0247486

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Impact of polycystic ovary syndrome on quality of life of women in correlation to age, basal metabolic index, education and marriage

Tabassum, Fauzia^a; Jyoti, Chandra^b; Sinha, Hemali Heidi^b; Dhar, Kavita^a ; Akhtar, Md Sayeed^c

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^a Department of Pharmacology, Santosh Medical College, Santosh University, Ghaziabad, Uttar-Pradesh, India

^b Department of Gynecology and Obstetrics, All India Institute of Medical Sciences, Patna, Bihar, India

^c College of Pharmacy, King Khalid University, Abha, Saudi Arabia

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Abstract

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Abstract

Polycystic ovary syndrome (PCOS) is the major endocrine related disorder in young age women. Physical appearance, menstrual irregularity as well as infertility are considered as a sole cause of mental distress affecting health-related quality of life (HRQOL). This prospective case-control study was conducted among 100 PCOS and 200 healthy control cases attending tertiary care set up of AIIMS, Patna during year 2017 and 2018. Pre-validated questionnaires like Short Form Health survey-36 were used for evaluating impact of PCOS in women. Multivariate analysis was applied for statistical analysis. In PCOS cases, socioeconomic status was comparable in comparison to healthy control. But, PCOS cases showed significantly decreased HRQOL. The higher age of menarche, irregular/delayed menstrual history, absence of child, were significantly altered in PCOS cases than control. Number of child, frequency of pregnancy, and miscarriage were also observed higher in PCOS cases. Furthermore, in various category of age, BMI, educational status and marital status, significant differences were observed in the different domain of SF-36 between PCOS and healthy control. Altogether, increased

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Trait emotional intelligence and quality of life in women with polycystic ovary syndrome: Dymorphic concerns and general distress as mediators

Barberis, N. , Calaresi, D. , Cannavò, M. (2023) *Comprehensive Psychiatry*

A comparison of patient-reported outcomes among Canadian women having hysterectomies

Saleeb, M. , Mohtashami, F. , Gadermann, A. (2023) *Quality of Life Research*

Exercise to Combat the Effect of Insulin Resistance in PCOS: A Narrative Review

Anwar, S. , Shikalgar, N. , Ashraf, N. (2023) *Current Women's Health Reviews*

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The Reliability and Validity of the Malay Version of Polycystic Ovarian Syndrome Health-Related Quality of Life Questionnaire

Mei, L.L. , Abu, M.A. , Chew, K.T. (2022) *Frontiers in Endocrinology*

Polycystic ovary syndrome and its impact on Iranian women's quality of life: A population-based study

Behboodi Moghadam, Z. , Fereidooni, B. , Saffari, M. (2018) *BMC Women's Health*

Quality of Life in Infertile Women with Polycystic Ovary Syndrome: a Comparative Study

Naumova, I. , Castelo-Branco, C. , Kasterina, I. (2021) *Reproductive Sciences*

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S. No: 59

Title of the Collaborative activity: Myasthenia Gravis Following

Excision of a Large Thymoma

Name of the collaborator: 1)Surgical Oncology, FMRI, Gurugram, India;

Medical Oncology, AIIMS, Rishikesh, India

Name of the participants: 1) Gyanendra Swaroop Mittal

Year of collaboration: 2021-22

Nature of the activity: Research

S. No: 59

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Indexed keywords

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Sustainable Development Goals 2022

Indian Journal of Surgical Oncology • Open Access • Volume 12, Issue 2, Pages 446 - 449 • June 2021

Chemicals and CAS Registry Numbers

Document type

Article • Green Open Access

Metrics

Source type

Journal

ISSN

09757651

DOI

10.1007/s13193-021-01326-4

View more

Myasthenia Gravis Following Excision of a Large Thymoma

Mittal, Gyanendra Swaroop^a ; Naik, B. Niranjana^b ; Sundriyal, Deepak^c

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^a Surgery, Santosh Medical College and Hospitals, Ghaziabad, UP, India

^b Surgical Oncology, FMRI, Gurugram, India

^c Medical Oncology, AIIMS, Rishikesh, India

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Paraneoplastic myasthenia gravis: Immunological and clinical aspects

Skeie, G.O. , Romi, F. (2008) *European Journal of Neurology*

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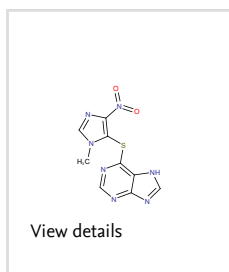
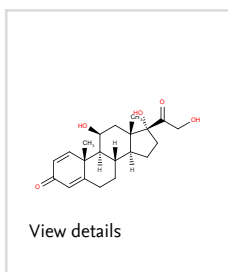
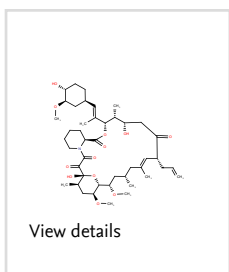
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S. No: 60

Title of the Collaborative activity: Cancer-Associated Venous

Thromboembolism in Ambulatory Solid Organ Malignancy Patients:

Experience from a Cancer Research Institute

Name of the collaborator: Department of Medical Oncology,

1) Hematology, All India Institute of Medical Sciences, Rishikesh,

Uttarakhand, India

Name of the participants: 1) Gyanendra Swaroop Mittal

Year of collaboration: 2021-22

Nature of the activity: Research



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[Indian Journal of Surgical Oncology](#) • [Open Access](#) • Volume 12, Issue 2, Pages 246 - 250 • June 2021
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Journal

ISSN

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DOI

10.1007/s13193-021-01303-x

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Cancer-Associated Venous Thromboembolism in Ambulatory Solid Organ Malignancy Patients: Experience from a Cancer Research Institute

[Sehrawat, Amit^a](#) ; [Mittal, Gyanendra Swaroop^b](#) ; [Sundriyal, Deepak^a](#) ;

[Chaturvedi, Anushree^c](#) ; [Gupta, Deni^d](#)
[Save all to author list](#)^a [Department of Medical Oncology, Hematology, All India Institute of Medical Sciences, Rishikesh, Uttarakhand, India](#)^b [Department of Surgery, Santosh Medical College & Hospital, Ghaziabad, Uttar Pradesh, India](#)^c [Department of Medical Oncology, SMS Medical College, Jaipur, India](#)^d [Department of Medical Oncology, Dharamshila Narayana Superspeciality Hospital, New Delhi, India](#)
[Loading PDF](#) [Full text options](#) [Export](#)
Abstract[Author keywords](#)[Indexed keywords](#)[SciVal Topics](#)**Abstract**

Cancer-associated deep venous thrombosis (DVT) and venous thromboembolism (VTE) are exceedingly common in patients with cancer. One-fifth of DVT events occur in patients with cancer and it is the second leading cause of death in patients with cancer after cancer itself. Data on DVT in cancer patients on medical therapy, especially from Indian experiences, are sparse. Here, we present our experience in ambulatory patients with solid organ cancer. The purpose of the study was to study the incidence of DVT in cancer patients on medical therapy and to analyze probable DVT risk factors. This study was a hospital-based single-arm retrospective collection and analysis of hospital records from patients receiving medical therapy on an outpatient and short-stay basis. From January 2016 to February 2017, adult solid organ cancer patients attending the medical oncology outpatient department (OPD), receiving active anticancer treatment, either oral or injectable, were included. The data was retrieved from the medical records department and the department of radiology. Descriptive statistics were used to analyze the data. Twenty-nine out of 1190 patients were documented to have developed DVT during the study period. The incidence of DVT in the outpatient settings was 2.4%, and DVT associated with venous access device in situ was seen in 4.05% (20/493) of the patients. Gynecological, breast, and

S. No: 61

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) Oral and maxillofacial surgeon, Sant Parmanand Hospital, Delhi, India;

Name of the participants: 1) Manoj Goyal

Year of collaboration: 2021-22

Nature of the activity: Research



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Journal of Oral Biology and Craniofacial Research • Open Access • Volume 11, Issue 2, Pages 219 - 224 • 1 April 2021

Document type

Article • Green Open Access

Source type

Journal

ISSN

22124268

DOI

10.1016/j.jobcr.2021.02.006

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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

Rajagopal, Athreya^a ; Goyal, Manoj^b ; Shukla, Sagrika^c ; Mittal, Neeti^d

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^a Oral and maxillofacial surgeon, Sant Parmanand Hospital, Delhi, India

^b Oral and maxillofacial surgery, Santosh University, Gaziabad, India

^c Department of Dentistry, All India Institute of Medical Sciences (AIIMS), Rishikesh, 249203, India

^d Santosh University, Gaziabad, India

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Abstract

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SciVal Topics

Metrics

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 than 5 mm and more than 5 mm of gingival show group the results remain

Cited by 6 documents

Non-Surgical Management of the Gingival Smile with Botulinum Toxin A—A Systematic Review and Meta-Analysis

Rojo-Sanchis, C. , Montiel-Company, J.M. , Tarazona-Álvarez, B. (2023) *Journal of Clinical Medicine*

Precisely specifying which botulinum toxin products are used for aesthetic treatments is essential

Pickett, A. (2022) *Journal of Oral Biology and Craniofacial Research*

Orthognathic Surgery for Management of Gummy Smile

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Gummy smile: A contemporary and multidisciplinary overview

Oliveira, M.T. , Molina, G.O. , Furtado, A. (2013) *Dental Hypotheses*

Myotomy of the levator labii superioris muscle and lip repositioning: A combined approach for the correction of gummy smile

Ishida, L.H. , Ishida, L.C. , Ishida, J. (2010) *Plastic and Reconstructive Surgery*

Treatment of the Patient with Gummy Smile in Conjunction with Digital Smile Approach

Arias, D.M. , Trushkowsky, R.D. , Brea, L.M. (2015) *Dental Clinics of North America*

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S. No: 62

Title of the Collaborative activity: Regenerative potential of stem cells derived from human exfoliated deciduous (Shed) teeth during engineering of human body tissues

Name of the collaborator: 1)Faculty of Pharmacy, AIMST University, Kedah Darul Aman, 08100, Malaysia; 2)Department of Pharmacology, Girijananda Chowdhury Institute of Pharmaceutical Sciences, Guwahati, 17, India;

Name of the participants: 1) Sameep Singh

Year of collaboration: 2021-22

Nature of the activity: Research



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Current Stem Cell Research and Therapy • Volume 16, Issue 5, Pages 507 - 517 • July 2021

Document type

Short Survey

Source type

Journal

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10.2174/1574888X16999201231213206

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Regenerative potential of stem cells derived from human exfoliated deciduous (Shed) teeth during engineering of human body tissues

Fuloria, Shivkanya^a; Jain, Ajay^b; Singh, Sameep^c; Hazarika, Isward^d; Salile, Samson^e;

Fuloria, Neeraj K.^a

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^a Faculty of Pharmacy, AIMST University, Kedah Darul Aman, 08100, Malaysia

^b Faculty of Dentistry, AIMST University, Kedah Darul Aman, 08100, Malaysia

^c Santosh Dental College and Hospital, Ghaziabad, Uttar Pradesh, 201009, India

^d Department of Pharmacology, Girijananda Chowdhury Institute of Pharmaceutical Sciences, Guwahati, 17, India

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Abstract

Author keywords

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Sustainable Development Goals 2022

SciVal Topics

Chemicals and CAS Registry Numbers

Metrics

Funding details

Abstract

The current decade witnesses the regenerative potential of Stem Cells (SCs) based lifesaving therapies for the treatment of various disease conditions. Human teeth act as a reservoir for SCs that exist in high abundance in baby, wisdom, and permanent teeth. The collection of Stem cells from Human Exfoliated

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Effect of Biodentine on Odonto/Osteogenic Differentiation of Human Dental Pulp Stem Cells

Wang, X. , Cai, Y. , Zhang, M. (2023) *Bioengineering*

Response Of New Terpene Derivative And Cymbopogon Citratus Leaves Extract Against Periodontitis Causing Pathogens

Chie, L.S. , Subramaniam, A. , Shanmugavelu, S. (2022) *Journal of Pharmaceutical Negative Results*

Stem cells from human exfoliated deciduous teeth attenuate trigeminal neuralgia in rats by inhibiting endoplasmic reticulum stress

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Therapeutic potential of stem cells from human exfoliated deciduous teeth(Shed)-a review

Obuli Ganesh Kishore, S. , Don, K.R. , Jothi Priya, A. (2020) *Indian Journal of Forensic Medicine and Toxicology*

Multi-lineage differentiation and clinical application of stem cells from exfoliated deciduous teeth

Xie, F. , He, J. , Chen, Y. (2020) *Human Cell*

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S. No: 63

Title of the Collaborative activity: Serum biomarkers as an alternative to vibration controlled transient elastography in liver fibrosis staging in chronic hepatitis c

Name of the collaborator: 1) Department of Gastroenterology, T.N.M.C & B.Y.L Nair Charitable Hospital, Mumbai, India;

Name of the participants: 1) A. Singh

Year of collaboration: 2021-22

Nature of the activity: Research



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Acta Gastro-Enterologica Belgica • Volume 84, Issue 1, Pages 43 - 50 • January-March 2021**Document type**

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ISSN

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Serum biomarkers as an alternative to vibration controlled transient elastography in liver fibrosis staging in chronic hepatitis c

Debnath, Prasanta^a ; Nair S.^a; Rathi P.^a; Junare P.^a; Jain S.^a; Chandnani S.^a; Singh A.^b;Contractor Q.^a

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^a Department of Gastroenterology, T.N.M.C & B.Y.L Nair Charitable Hospital, Mumbai, India^b Department of Medicine, Santosh Medical College, Ghaziabad, India2 51th percentile
Citations in Scopus0.43
FWCI 8
Views count [View all metrics >](#)[View PDF](#) [Full text options](#) [Export](#) **Abstract**

Author keywords

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Sustainable Development Goals 2022

SciVal Topics

Chemicals and CAS Registry Numbers

Metrics

Abstract

Background: Assessment of liver disease severity in chronic Hepatitis C (CHC) is essential both in pre-treatment and post-treatment period. We assessed the impact of direct-acting antiviral therapy on liver stiffness regression measured by Vibration Controlled Transient Elastography (VCTE) in patients with CHC and evaluated the diagnostic performance of the APRI and FIB-4 scores compared to VCTE in detecting advanced fibrosis and cirrhosis (F3/F4). **Methodology:** Retrospective analysis of consecutive patients with CHC who underwent VCTE before and after DAA therapy was done. APRI and FIB-4 scores were compared to VCTE. **Results:** 88 (56.78%) patients-12 (F3) and 76 (F4) according to VCTE, had advanced fibrosis pre-treatment, which reduced to 69 (44.52%)-10 (F3) and 59 (F4) after 12 weeks DAA therapy. Significant reduction in VCTE value from 14.08 ± 9.05 KPa to 11.84 ± 8.31 KPa ($p=0.002$) was noted. There is significant reduction in APRI, FIB-4 and GUCI score post-treatment which was not the case with Lok score and Bonacini score. Before therapy, FIB-4 performed better than other tests to predict advanced

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Glycomics-based serum markers as reliable tool for assessment of viral response after treatment with direct-acting antiviral drugs in hepatitis C virus infection

Somers, N. , Vandekerckhove, E. , Geerts, A.
(2023) *Acta Clinica Belgica: International Journal of Clinical and Laboratory Medicine*

Serum serotonin as a non-invasive marker of portal hypertensive gastropathy in Egyptian patients with HCV-related liver cirrhosis

Gamaleldin, A.M. , Ellakany, I.W. , Saad, A.M.
(2022) *Acta Gastro-Enterologica Belgica*

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S. No: 64

Title of the Collaborative activity: To Evaluate the Implementation and Impact of an Antimicrobial Stewardship at a Tertiary Care Teaching Hospital in India

Name of the collaborator: 1) Department of Pharmacology, School of Medical Sciences and Research, Sharda Hospital, Sharda University, Uttar Pradesh, Greater Noida, India;

Name of the participants: 1) Sweta Kumari

Year of collaboration: 2021-22

Nature of the activity: Research



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International Journal of Nutrition, Pharmacology, Neurological Diseases • Volume 11, Issue 3, Pages 211 - 219 • July-September 2021

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To Evaluate the Implementation and Impact of an Antimicrobial Stewardship at a Tertiary Care Teaching Hospital in India

Kumari, Sweta^a; Bagati, Kavita^b ; Sadasivam, Bala^c; Babu, Gudise^d[Save all to author list](#)^a Department of Pharmacology, Santosh Medical College, Uttar Pradesh, Ghaziabad, India^b Department of Pharmacology, School of Medical Sciences and Research, Sharda Hospital, Sharda University, Uttar Pradesh, Greater Noida, India^c Department of Pharmacology, All Institute of Medical Sciences, Bhopal, India^d JNU Hospital and Medical College, Jagatpura, Rajasthan, Jaipur, India [Loading PDF](#) [Full text options](#) [Export](#) **Abstract**[Author keywords](#)[SciVal Topics](#)[Funding details](#)**Abstract**

Background: Antimicrobial stewardship programs refer to antibiotic policies, antibiotic management programs, and antibiotic control programs. According to the Centers for Disease Control and Prevention (CDC) Project ICARE, all hospitals reported having an antibiotic formulary, and 91% used at least one other antimicrobial control strategy. **Materials and Methods:** The present study is a retrospective and observational study. All information was noted and surveyed sporadically. Any deviations from the agreed criteria were communicated, discussed, and documented. Antibiotic stewardship started from an inpatient setting. In the first phase, the patient pool from inpatient was addressed. For the prospective audit, two components had been recognized to have an evidence level 1. These were multidisciplinary rounds of infectious diseases patients and the use of antimicrobials. **Result:** In Medicine ward, the most common class of drugs was beta-lactam; in beta-lactam, a combination of piperacillin/tazobactam, amoxicillin/clavulanic acid, and macrolides was used with a mean dose of 1408.18 g. While in orthopedics, most common drugs for prophylaxis use were found to be cephalosporins (cefazolin first generation) with a mean dose of 937.07 ± 741.81 g to reduce surgical site infections. Prophylactic use of beta-lactam (amoxicillin/clavulanic acid) was prescribed for the most of

S. No: 65

Title of the Collaborative activity: Role of laparoscopic-assisted transversus abdominis plane block during elective laparoscopic cholecystectomy

Name of the collaborator: 1) Department of Medicine (Division of Nephrology), UCMS and GTB Hospital, Delhi, India;

Name of the participants: 1) Apoorv Goel, 2) Prakhar Garg

Year of collaboration: 2021-22

Nature of the activity: Research



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[Download](#) [Print](#) [Save to PDF](#) [Add to List](#) [Create bibliography](#)[World Journal of Laparoscopic Surgery](#) • [Open Access](#) • Volume 14, Issue 2, Pages 87 - 89 • May-August 2021**Document type**Article • [Bronze Open Access](#)**Source type**

Journal

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Role of laparoscopic-assisted transversus abdominis plane block during elective laparoscopic cholecystectomy

Goel, Apoorv^a ; Bansal, Roli^b; Garg, Prakhar^a; Kothari, Shyam^c[Save all to author list](#)^a Department of General Surgery, Santosh Medical College and Hospital, Santosh University, Ghaziabad, Uttar Pradesh, India^b Department of Medicine (Division of Nephrology), UCMS and GTB Hospital, Delhi, India^c Department of Surgery, St Joseph Hospital, Ghaziabad, Uttar Pradesh, India [Loading PDF](#) [Full text options](#) [Export](#) **Abstract**[Author keywords](#)[Indexed keywords](#)[SciVal Topics](#)[Chemicals and CAS Registry Numbers](#)**Abstract**

Background: In today's era of minimally invasive surgery, early postoperative pain reduction, early recovery, and return to normal activities are also important aspects. This study has been designed to analyze and compare the effect of laparoscopically administered transversus abdominis plane (TAP) block with port-site infiltration of long-acting local anesthetic agent (0.25% bupivacaine) in cases of elective laparoscopic cholecystectomy. **Materials and methods:** This is a comparative study carried out at St Joseph Hospital, Ghaziabad, from September 2019 to March 2020 on 154 patients who underwent standard four-port laparoscopic cholecystectomy. Seventy-seven patients in group I received TAP block with 0.25% bupivacaine and seventy-seven patients in group II received 20 mL of 0.25% bupivacaine infiltration over port sites, including 10 mL each at epigastric and umbilical port and 5 mL each at midclavicular line and anterior axillary line ports, respectively. Various parameters were assessed during the intraoperative and postoperative periods. The pain was analyzed using visual analog scoring (VAS) for the first 24 hours at an interval of 3, 6, 12, and 24 hours. A note was made of any additional analgesic requirement. **Results:** Postoperative pain at 3, 6, and 12 hours was significantly reduced in group I who received TAP block as compared to those who received port-site infiltration. Hospital stay duration was significantly shorter in group I. **Conclusion:** Laparoscopic-assisted TAP block significantly

S. No: 66

Title of the Collaborative activity: Medical research and publication:

Concerns and way forward

Name of the collaborator: 1) Department of Anatomy, Kasturba

Medical College, Manipal Academy of Higher Education, Karnataka,

Manipal, India;

Name of the participants: 1) Rashi Singh

Year of collaboration: 2021-22

Nature of the activity: Research



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Journal of the Anatomical Society of India • Volume 70, Issue 4, Pages 195 - 196 • October-December 2021

Document type

Editorial

Source type

Journal

ISSN

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DOI

10.4103/jasi.jasi_199_21

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Medical research and publication: Concerns and way forward

Singh, Vishram^a ; Reddy, Krishna^b; Singh, Rashi^c

Save all to author list

^a Department of Anatomy, Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Karnataka, Manipal, India

^b Department of Anatomy, Kamineni Academy of Medical Sciences and Research Centre, Telangana, Hyderabad, India

^c Department of Paediatric and Preventive Dentistry, Santosh Dental College and Hospital, Uttar Pradesh, Ghaziabad, India

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(2018) *Human Reproduction*, 33 (5), pp. 770-776. Cited 29 times.
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S. No: 67

Title of the Collaborative activity: Evolving trends in anatomy

teaching across the globe: A new perspective

Name of the collaborator: 1) Department of Anatomy, Kasturba

Medical College, Mangalore, Manipal Academy of Higher Education,

Karnataka, Manipal, India;

Name of the participants: 1) Rashi Singh

Year of collaboration: 2021-22

Nature of the activity: Research



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10.4103/jasi.jasi_156_21

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Evolving trends in anatomy teaching across the globe: A new perspective

Singh, Vishram^a ; Singh, Rashi^b

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Name of the collaborator: 1) Department of Chest and Tuberculosis Shaheed Hasan Khan Mewati Government Medical College, Nalhar, Haryana, 122107, India;

Name of the participants: 1) Deepika Agrawal

Year of collaboration: 2021-22

Nature of the activity: Research



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Background: Cooking smoke is a known risk factor for a number of respiratory diseases. It is essential to delineate the role of these environmental factors in the etiology and epidemiology of Tuberculosis (TB). Aim and Objectives: The present study was conducted with an aim to assess the association of TB among the study subjects using biomass fuels for cooking or exposed to Second Hand Smoke (SHS). Material and Methods: The present case control study was conducted in the Department of Chest and TB for a duration of one-year and included 100 cases (new pulmonary TB) subjects and 300 controls as non-TB subjects who attended outpatient clinic. Data were collected as a structured questionnaire. Categorical data were presented as percentages (%) and bivariate logistic regression analysis was done

S. No: 69

Title of the Collaborative activity: Quality and effectiveness of online medical education during COVID-19 outbreak: Perception of medical students in Delhi NCR region

Name of the collaborator: 1)Department of Anatomy, Noida Institute of Medical Science, Uttar Pradesh, Noida, India;

Name of the participants: 1) Jyotsna Sharma, 2) Deepika Aggarwal, 3)

Yogesh Yadav

Year of collaboration: 2021-22

Nature of the activity: Research



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Quality and effectiveness of online medical education during COVID-19 outbreak: Perception of medical students in Delhi NCR region

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Introduction: Necessity is the mother of invention, is not only an English language proverb but it has been proved several times in several ways, and recently it has been proved during this COVID-19 outbreak that online medical education has erupted as one of the inventions during these stressful situations as a necessity. In these difficult situations, universities seek to deliver medical education through various new methods or modalities, to ensure the continuous learning of medical students. Novel ways of online teaching should be considered in new medical curriculum development, as well as methods of delivering lectures and practical skills for medical students. In this pandemic situations, medical faculty administrators also had to improvise to make an adjustment, from the formerly class-based lecture to online lecture. This study aimed to measure the perception of medical students regarding the quality and effectiveness of online medical education during COVID-19 Pandemic.

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