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2nd INTERNATIONAL e-CONFERENCE 2021

25th - 27th November

Departments of Anatomy, Biochemistry, Physiology & Centre for Biomedical Research

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2nd International e-Conference on

"Exploring the Newer Modalities in Teaching - Learning and Research in Basic Medical Sciences during COVID Era"

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Brief about Basic Medical Sciences e-Conference 2021 (BMS e-CON-2021)

2nd International e-conference, BMS e-CON-2021 on **"Exploring the Newer Modalities in Teaching - Learning and Research in Basic Medical Sciences during COVID-19 Era"** was organized by the Departments of Anatomy, Biochemistry, Physiology and Centre for Biomedical Research of Aarupadai Veedu Medical College, Pondicherry (Vinayaka Missions Research Foundation) from 25th-27th November 2021. The conference had 890 confirmed registrations which includes the delegates from states all over India and a few foreign countries. There were 137 papers for oral and 29 for Young Research Scholar Award presentations in Faculty, PhD, Postgraduate and Undergraduate categories. E-posters competition was also held for undergraduates. There were 14 eminent national and international speakers who made the conference a scientific feast by sharing their experiences and knowledge on various topics pertaining to the theme of the conference.

The theme of the conference: "Exploring the Newer Modalities in Teaching - Learning and Research in Basic Medical Sciences during COVID-19 Era" was chosen because of the unprecedented situation that arouse after the outbreak of COVID-19 leading to digitalisation of most of the events related to education like teaching, learning and to some extent research. COVID-19 pandemic has made everyone feel the need to adopt the online teaching–learning methodology to serve the dual purposes of continuation of education while discontinuation of the chain of transmission of the virus to a number of people. Basic research in molecular biology, immunology and cell biology provides an infinite amount of data and knowledge. Applied research uses that information to understand the pathophysiology of diseases of patients. Research demands critical thinking, logical reasoning and creative application by exploring newer approaches, techniques and methods. So, the health professionals should be aware of the latest research advances. The next generation professionals should be aware of the latest research advances and have to be assertive in their practices which should be evidence based for efficient and effective patient care.

Focus of this conference was on: Exploring newer modalities in teaching - learning and research in basic medical sciences during COVID-19 era with special emphasis on:

1. Newer technology in teaching and learning and experience sharing.
2. Research Ethics and challenges during COVID-19 Era.
3. Development of vaccines and diagnostic kits using newer molecular based technologies.
4. Myths and facts related to COVID-19
5. Laboratory Medicine in MBBS curriculum

Regional Variation of Human Pancreatic Islets Dimension and its Impact on Beta Cells in Indian Population

Abstract-1

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Introduction: Islet of Langerhans, the endocrine pancreas plays a significant role in glucose metabolism. Obesity and insulin resistance are the major factors responsible for beta-cell dysfunction. Whereas Asian Indian population has increased susceptibility to diabetes despite having lower BMI. The morphology of islets plays a significant role in beta-cell function.

Aims: To study the regional variation and microarchitecture of the islets including beta-cell proportion in the pancreas of non-diabetic Indian population.

Materials and Methods: Authors observed islet morphology and beta-cell area proportion by Large-scale computer-assisted analysis in 20 adult human pancreases in the non-diabetic Indian population. Immunohistochemical staining with anti-synaptophysin and anti-insulin antibodies were used to detect islet and beta cells, respectively. Whole slide images were analysed using ImageJ software.

Results: Endocrine proportions were heterogeneously increasing from head to tail with maximum distribution in the tail region. Even though larger islets were predominately confined to the tail region, which is 30 to 45 % less than the American population. The islets in the Indian population were relatively smaller in size, but they have more beta cells (20%) when compared to the American population.

Conclusion: The beta cells of larger islets are functionally more active than the smaller islets via the paracrine effect. Despite having more beta cells in Indians, there are functionally less active in smaller islets. Thus, a reduction in the number of larger islets may be one of the probable reasons for the increased susceptibility of Indians to diabetes even at lower BMI.

Abstract-2

Cytogenetic Effects of Formalin Exposure on Buccal Mucosa: A Cross-sectional Observational Study

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Introduction: Oral cancer constantly ranks as one of the top ten cancers globally. Many gene alterations have been implicated in the development and progression of oral squamous cell carcinomas. The substantiation for the genotoxic potential of Formaldehyde (FA) in humans is insufficient and conflicting. DNA damage leads to various nuclear abnormalities like Micronucleus (MN), multinucleation, nuclear budding, karyorrhexis & karyolysis formation.

Aim: This study was conducted to identify the effect of formalin exposure to various nuclear abnormalities like Micronucleus (MN), multinucleation, nuclear budding, karyolysis and karyorrhexis on buccal mucosa.

Material & Methods: The present study was undertaken on 100 individuals, including medical students, faculty members and staff members of the Department of Anatomy, All India Institute of Medical Sciences (AIIMS) Rishikesh. Twenty individuals (age range: 25-55 yrs.) like faculties and staff members who had more than five years of formalin exposure were included in the present study. Forty (Group A) 1st year MBBS students (age 17-19 yrs.) on the verge of completion of the academic year with formalin exposure of one year, during dissection practical, were selected. Further, forty newly admitted 1st year MBBS students without any exposure to formalin were selected as a control group. From all the study participants, buccal mucosa specimens from the site were collected by gently scraping with a wooden spatula. Slides were prepared following the protocol given by Halder et al. (2004).

Results: Nuclear variations were found more in the group with more than five years of formalin exposure. The mean value was 56.80. The frequency of nuclear variations was significant within groups as well as between groups also.

Conclusion: The genotoxic effect of formalin was confirmed by the increase in the nuclear variations in the formalin-exposed group.

Abstract-3

Association of Sperm DNA Fragmentation with Serum Lipid Profile among Males with Abnormal Semen Parameters

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Shree Rekha, Department of Pathology, JIPMER, Puducherry, India.

Introduction: Serum lipids and sperm DNA fragmentation were indirectly associated with seminal parameters. A possible correlation between the two was traced in this study, which can be used to evaluate male infertility, especially before the application of assisted reproduction technology and in bringing about lifestyle modifications.

Aim: This study aimed to measure the proportion of DNA fragmentation and to determine the correlation of sperm DNA fragmentation with levels of total cholesterol, triglycerides, VLDL, LDL and HDL among males with abnormal semen parameters.

Materials & Methods: Male partners of infertile couples (n=106), attending the infertility clinic JIPMER, with abnormal semen analysis as per WHO criteria (2010) were recruited for the study. The unused semen samples after semen analysis were subjected to comet assay for sperm DNA fragmentation or preserved at -700 degree C for future sperm DNA fragmentation analysis within 4 hours. In the subsequent visit, serum fasting lipid profile was analyzed with the spectrophotometric kit in the auto analyzer.

Results: 52% of men with abnormal semen parameters had sperm DNA fragmentation. Modest positive correlation was observed between sperm DNA fragmentation (percentage of DNA in comet tail) and serum lipid values (serum triglycerides, serum LDL and serum VLDL). Modest negative correlation was observed between sperm DNA fragmentation (percentage of DNA in comet head) and serum lipid values (serum triglycerides, serum LDL and serum VLDL). No correlation was observed between sperm DNA fragmentation (total comet length, head diameter and tail length) and serum lipid values (serum total cholesterol and serum HDL).

Conclusion: This is the only study that observed modest correlation between serum lipids and sperm DNA fragmentation. Further studies are recommended to evaluate whether percentage of sperm DNA fragmentation is significantly affected by abnormal lipid parameters.

Abstract-4

Embryological and Clinico-anatomical Perspective of Ilioinguinal Nerve Variations in Inguinal Region

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Introduction: Surgical, anesthetic and laparoscopic intervention in inguinal region carries the risk of damage to ilioinguinal nerve in presence of unusual branching pattern leading to chronic postoperative pain.

Aim: To the branching pattern of ilioinguinal nerve in inguinal region.

Materials and methods: Branching pattern of ilioinguinal nerve was studied in inguinal region in 10 embalmed cadavers. Bilateral inguinal region dissection was carried out as part of routine undergraduate teaching.

Results: Unusual unilateral branching pattern of ilioinguinal nerve was found in left inguinal region in approximately 55 years old female cadaver. Ilioinguinal nerve pierced the internal obliquus muscle by two branches; one passing through superficial inguinal ring and other one giving two branches to internal obliquus muscle and then traversing through the external obliquus abdominis aponeurosis to innervate skin of upper part of thigh.

Discussion: Defective migration of myotomes related to ilioinguinal nerve could be the cause of unusual branching pattern. Ilioinguinal nerve is generally at risk of injury in surgeries like herniorrhaphy, pfannenstiel incision, laparoscopic surgeries. Also, entrapment of this nerve can arise from fibrosis and postoperative scar tissue formation. This cause chronic post-operative pain and discomfort.

Conclusion: Knowledge about variation of ilioinguinal nerve in inguinal region is imperative to prevent iatrogenic injuries and also helpful in planning preoperative nerve blocks for anesthesia and preventing/managing postoperative pain by either sacrifice of nerve intraoperatively or by postoperative pain management.

Abstract-5

Student Involved Fun Activities- A Novel Strategy to Teach Functional Correlation of Brain in Anatomy Lectures

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Introduction: Medical educators often use clinical cases and narratives to make the neuroanatomy lectures interactive for the learners. Making the learner to do activities followed by explaining the neuroanatomical correlation is an unexplored area of research.

Aims: The aim of the study is to compare the test score among students exposed to student involved activities with conventional teaching during a neuroanatomy lecture, and to assess the students perception of neuroanatomy teaching among students exposed to student involved activities with conventional teaching using a validated feedback questionnaire.

Materials and methods: The study participants included 125 first-year medical undergraduate students. The student's prior knowledge was assessed using 20 clinical scenario based multiple-choice questions on the topic "functional areas of brain", two weeks prior to the lecture. The students were divided into two groups based on their roll number. The control group attended two sessions of didactic lecture and the interventional group attended two sessions of lecture with activities. In an activity, the instructor gives a set of task and rules to the learner, followed by functional correlation and clinical correlation. The post-test and feedback questionnaire were given one week after the completion of the lectures. The students who have attended the lecture sessions and completed both pre-test and post-test were included for analysis.

Results: The score improvement was significantly higher in the activity group as compared to the didactic group. The perception score on

Conclusion: Activity based teaching is an effective and engaging strategy to teach functional neuroanatomy in lectures. The carefully planned student activities have the ability to promote active participation, improved understanding and better application of the subject content.

Abstract-6

Anti-Hyperglycemic Acitivity of Ethonalic Extract of Stem of Cissus Quadrangularis in Streptozotocin Induced Experimental Diabetic Rats- Blood Parameters

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Introduction: Cissus quadrangularis is a popularly known traditionally used medicinal plant from ancient times. The common name of cissus quadrangularis in tamil 'pirantai'. This plant has been consumed as a vegetable and easily available plant. The plant is used to heal the many sorts of diseases including stroke, epilepsy, bone related diseases, skin infections, constipation, piles, anemia, burns, wounds and diabetes also.

Objective: The present study was hypothesized to evaluate the effects of anti-hyperglycemic activity of stem cissus quadrangularis on Streptozotocin induced diabetic rats.

Materials and methods: The animals were divided into five groups, each group contain six animals. Group I- control. Group II- STZ induced negative control. Group III- STZ induced rats treated with metformin. Group IV and V -STZ induced rats treated with (200 and 400 mg/kg) ethanol extract. After overnight fasting, a single dose of STZ (60 mg/kg) were given by intraperitoneally. After confirmation of diabetes the ethanolic extract of cissusquadrangularis 200 mg and mg 400 were given orally.

Results: This study reveals that cissus quadrangularis have more effects in reducing blood sugar level in diabetic rats. The results shows that 400 mg/kg/bw CQ have significant effects then with 200 mg/kg/bw. The entire study concluded diabetic patients are prone to wound and related diseases.

Conclusion: Conception of cissus quadrangularis are more effective drug to reduce the blood sugar levels and also heal diabetic wounds.

Abstract-7

Attitude and Response of First Year Medical Students Towards Cadaveric Dissection in Medical Colleges of South Karnataka

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Introduction: Study of human anatomy is the most important subject in the medical education. Dissection is the corner stone in studying and understanding the anatomy. Cadaveric dissection helps the medical students in learning anatomy better than any other methods as the students will have a three-dimensional view and hands on experience when they dissect themselves.

Aims: To estimate the attitude and response of the 1st year medical students to understand their views towards cadaveric dissection for the first time and also regarding alternative modalities for dissection.

Materials and methods: Present study was a structured questionnaire based descriptive cross-sectional study which was conducted among the first-year medical students. All the first-year medical students who were willing to participate in the study were included in this study. Students who were absent and refused to give consent were excluded from the study.

Results: In the present study 97.1% of the students were excited at first visit to the dissection hall and about 98.6% students considered that the cadaver dissection is an important and indispensable part in learning anatomy. Irritation of eyes due to formaldehyde was the common physical symptom seen in 52.1% of the students. About 47.4% of the students were not performing the dissection due to smell of formaldehyde and 30.1% students were not performing dissection due to lack of cadavers.

Conclusion: Dissection of cadaver remains the most preferred way of learning and understanding the concepts of anatomy. Students preferred cadaveric dissection than the virtual dissection and computer assisted learning. Students also experienced physical symptoms and psychological symptoms during dissection. These can be overcome by adequate counselling of the students before entering the dissection hall by the staff members and they should be encouraged to perform the dissection.

Abstract-8

Unilateral Ectopic Pelvic Kidney- A Rare Case

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Introduction: Kidney is a pair of beans shaped reddish organs which is located at the posterior abdominal wall from T12 to L3 vertebral level on either side of the vertebral column. Development of kidney occurs at the stage of 6 to 8 weeks of intrauterine life. Usually, kidney ascends from the pelvic region to the lumbar level. Failure of ascent of kidney results in Ectopic kidney. An ectopic kidney is a birth defect in which a kidney is located in an abnormal position. In most cases, people with an ectopic kidney have no complaints. In other cases, the ectopic kidney may create urinary problems, such as urine blockage, infection, or urinary stones. Researchers estimate that ectopic kidney occurs once in every 1,000 births.

Case Description: A 55-years old male comes to the emergency department with clinical history of fever,abdominal pain with persistent vomiting. Investigation revealed various abnormal findings. MRI abdomen revealed liver abcess, right kidney seen to lie in normal location in the right renal fossa – measuring about 11* 5 cms. malrotation of the right kidney is noted. Absence of left kidney in the left renal fossa. Instead, presence of ectopic kidney is noted, which is present in the left side of pelvis. This ectopic kidney measures about 9x4 cms. Adrenal gland appears normal, No evidence of hydrouretronephrosis.

Discussion: From the above case history and investigation, the patient was found to be a rare case of unilateral ectopic left pelvic kidney.

Conclusion: This case report was presented in order to explain this case as a rare case scenario and to enumerate the incidence of the ectopic kidney.

Abstract-9

Renal Hilar Nutcracker Phenomenon: A Case Report

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Introduction: Variations in vascular supply of kidney is known and has clinical implications owing to the routinely performed various radiodiagnostic and surgical interventions in the region, including minimally invasive procedures and renal transplant. A precise and through anatomical knowledge of the normal peri-hilar anatomy and associated variations are prerequisite for achieving fruitful diagnostic and therapeutic goal.

Case Report: During routine dissection of the posterior abdominal wall of a 67 year old male cadaver an uncommon variation was noted in the peri-hilar renal vessels arrangement. Both the kidneys were supplied by renal arteries arising at L1-L2 level which almost immediately divided into anterior and posterior branches. The anterior branches further took an arched course anterior to the respective renal veins, and then divided a gain to gain entry to both the hila anterior to the renal veins. Posterior arterial branches were related posterior to renal vein at entry point at hila which make renal vein more prone to compression. Also the left renal vein was seen to be formed outside the renal hilum by two tributaries.

Conclusions: This type of aberrant vessels may be present due to derangement in embryological development of permanent renal vessels which need regression of many renal vessels during ascent of kidney. This type of variations named as hilar nutcracker phenomenon may compress renal vein. Hence, it is important to have anatomical insight of such variant vascular anatomy at renal hila for the surgeons and physicians, especially in view of the increasingly practiced laparoscopic renal surgeries.

Abstract-10

Anatomical Study of Kugel's Artery Using Luminal Plastination Technique

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Introduction: The Kugel's artery or "arteria anastomotica auricularis magna" was first described by Kugel in 1927. The Kugel's artery commonly arises from the left coronary artery and traverses in the inter atrial septum to form an anastomotic circle with the right coronary artery. The use of luminal plastination technique to study the Kugel's artery has not been found in the previous literature hence we opine that this was the first time we have used the silicon luminal casts to study the Kugel's artery.

Aims: The aim is to determine the existence of Kugel's artery among the Mysore population of Karnataka state and to interpret its clinical significance using low cost innovative luminal cast technique.

Material and method: In the present study 110 adult human cadaveric hearts (90 males and 20 females) were utilized from JSS Medical College and Mysore Medical College mortuaries, for a period of 3 years. The plastinate material was injected into each coronary artery. The luminal cast was then carefully removed. The existence and pattern of the Kugel's artery was observed in each of the luminal cast obtained.

Result: Out of 110 hearts the Kugel's artery was found in 25 arterial casts (22.7% of cases).It was seen arising from the proximal segment of the left circumflex artery, it had larger diameter compared to the other atrial branches from the circumflex artery. The mean diameter of the Kugel's artery was 4.48±0.75 mm.

Conclusion: Knowledge of the existence of Kugel's artery will help the cardiologist and cardiac surgeons to evaluate and plan treatment of patients with valvulitis and commissural lesions of the heart among the Mysore population. This is a new innovative technique wherein plastinate material known as silicon is being used to study the vascular pattern, silicon was found to have more advantages than resins.

Abstract-11

Harlequin Ichthyosis: A Folklore of Demon

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Introduction: Harlequin ichthyosis is a severe and rare autosomal recessive congenital ichthyosis, characterized by severe hyperkeratosis, extensive fissuring and massive, diamond-shaped scales which limit the child's movements. The term harlequin comes from the baby's facial expression and diamond-shaped pattern of the scales like the 17th century entertainers, harlequins. The underlying genetic abnormality has been identified as a mutation in the lipid-transporter gene ABCA 12 on chromosome

Aim: To provide a comprehensive knowledge of severe form of congenital ichthyosis, the harlequin ichthyosis and abolish the superstitious notion regarding the appearance of the neonate.

Case Report: The present report is case of premature female baby delivered at MIMS, Mandya. The neonate presented plaques of rigid fixed skin, separated by deep red fissures, facial features were obliterated by thickened skin, undeveloped nose and pinna, severe ectropion and eclabium. Intensive care was given and survival was prolonged by systemic retinoids. The neonate succumbed to respiratory failure few days later.

Conclusion: The present study gives a comprehensive knowledge of harlequin ichthyosis and provides emphasis on sensitization of the disease to prevent any misconception or superstition. Also lays emphasis on genetic counselling of the couple to prevent further occurrences.

Abstract-12

Perceptions of Phase-1 Medical Undergraduate Students on the Prospects of Open Book Assessment in Enhancing Higher Order Thinking Skills (HOTS)

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Introduction: Present generation medical educators are keen on maximizing the utility of every academic activity which enhances active learning in medical students. Over a period, it has been observed that open book assessments have fulfilled both the requirements of an assessment tool and a student -centered approach to medical education. It is generally accepted that open book assessments enhance the higher order thinking skills in students, hence, avoiding the tendency of mugging up loads of information. Many quantitative parameters have been measured and compared with traditional assessment tools in previous studies specifying a particular objective on open book assessments.

Aims: To explore the perceptions of phase-1 MBBS students on open book assessment and to analyze its prospectus for enhancing higher order thinking skills.

Material and methods: An onsite sit-down open book assessment was conducted in the subject of Anatomy for the phase-1 MBBS students. The feedback was collected in the form of pre-validated questionnaire and focus group discussions were conducted to analyze the perceptions of students qualitatively.

Results: One hundred and twenty-three students participated in the assessment.78.8% of the students scored above fifty percentage and 21.1% below. Focus group discussions generated rich themes which included active learning experience with engagement, reduced levels of stress and anxiety, exploring information and bridging knowledge gaps and problem solving.

Conclusions: Present study suggests incorporation of open book assessment in regular curriculum of medical students right from initial years of their course to potentiate the method as a great learning tool, enhancing ability of students in critical thinking and problem-solving skills, which are indeed a pre-requisite for safe clinical practice in further years.

Abstract-13

Revisiting the Surgical Approaches to Decompression in Quadrilateral Space Syndrome: A Cadaveric Study

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Introduction: Quadrangular space syndrome involves compression of the axillary nerve and posterior circumflex humeral artery and its management in few cases, requires surgical decompression.

Aim: The current study studies the surgical approaches used in the decompression of neurovascular structures and presents our reflections and recommendations.

Material and method: Four human cadavers, in the Department of Anatomy were used for dissection of the Axillae and the Scapular region by the senior residents of the Department of Anatomy and Department of Orthopedics, who dissected quadrangular space in the eight upper limbs, using anterior and posterior surgical approaches.

Results: Posterior approach to identify the quadrangular space and secure its contents was recognized as the easier and much quicker method by both the Anatomy and Orthopedic residents, but it may result in increased postoperative morbidity. Whereas the anterior (Delto-pectoral) approach involves more skill but reduces postoperative morbidity.

Conclusions: Anterior (Delto-pectoral) approach with suggested modifications can prove as an effective method in surgical decompression of quadrangular space syndrome. The authors suggest more cadaveric studies to facilitate anatomists and surgeons with the opportunities to practice and evaluate older and newer surgical approaches.

Abstract-14

Male Infertility: Y Chromosome Microdeletion Test by EAA Markers and Non EAA Markers in Chhattisgarh

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Introduction: Male infertility in India is relatively less evaluated. In India 15-20 million couples are suffering from infertility. Incidence of male infertility is 50% of total infertility. After Klinefelter syndrome, Yq microdeletion is most common genetic cause of male infertility. For Yq microdeletion, European academy of andrology has recommended six markers to test. But few cases would be missed if we screen cases only with these markers. Few additional markers are required to screen male cases of infertility.

Materials and method: After semanogram, azoospermic cases andoligozoospermic cases were enrolled for yq microdeletion test by using both markers by EAA and Non-EAA. Primers were designed for EAA markers; sY86, sY 127, sY254, sY84, sY 134, sY255 and Non-EAA markers; sY746, sY182, sY121, sY128, sY130, sY143, sY145, sY160. Singleplex and Multiplex PCR were done and analysed in gel-doc.

Result: It was found that frequency of Yq microdeletion was 27%. Detail will be discussed during presentation.

Conclusion: Clinician should advice Yq microdeletion test. Chances of missing of infertility cases can happen by using only EAA markers. This test is a very significant to screen in the male who is opting assisted reproductive techniques as it may be transmitted in offspring.

Abstract-15

Effect of Systematic Periodic Physiology Seminars on Academic Performance among First Year Nursing Professional Students

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Aims: To evaluate the effect of systematic periodic Physiology seminars on academic performance among first year nursing professional students.

Materials and Methods: The study protocol and study design was approved by the Institutional Review Board [IRB]. The study target population was first year nursing professional students in the Physiology discipline. All the universal principles of bioethics were adhered while carrying out this research project. The eligible study participants gave their voluntary written informed consent and were explained in detail about the study protocol. The core thematic areas in the Physiology discipline were identified in correlational with the university curriculum and were standardized. The study participants were randomized into two groups based on the random numbers. The one group exposed to the intervention) Systematic Seminars on core thematic areas in Physiology Discipline) and other group (Control) had traditional/conventional way of teaching and learning methodologie(s). The assignment scores were compared among both the groups and were analyzed using statistical test at p value significance of less than 0.05. The recorded data was represented in the form of descriptive statistics and Mean/Median±SE.

Results: The study results revealed that, the assignment scores were on raising trends as well as higher in the interventional group (Exposure to systematic seminars on core thematic areas in Physiology Discipline) than compared to the control group (Which had exposure to traditional/conventional way of teaching and learning methodologie(s)) with $p<0.001$. It was also revealed that, retention of memory/facts were for longer duration among interventional group (Exposure to systematic seminars on core thematic areas in Physiology Discipline) than compared to the control group (Which had exposure to traditional/conventional way of teaching and learning methodologie(s)) with $p<0.001$.

Conclusion: Systematic periodic Physiology seminars significantly improved the scoring and retention of memory among first year nursing professional students.

Abstract-16

Conducting of Serial Tutorials Classes in First Year Medical Students Significantly Improves the Academic Scores in Physiology Discipline

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Aims: To evaluate the effect of conducting serial tutorial classes among first year medical students on academic scores in Physiology discipline.

Materials And Methods: The research proposal got its approval from the Institutional Human Ethics Committee [IHEC]. After obtaining the approval from the IHEC, the study participants were explained about the nature of the study and were enrolled with their prior written informed consent. The identity of every study participants were irreversibly coded with strict maintenance of their privacy and confidentiality throughout the study period.The eligible study participants were randomized either into the two groups based on random number table. The one group (Experimental/ Intervention) received periodic and serial tutorial classes and other group (Control) had conventional/traditional way of teaching and learning.The periodic serial assignment(s) were conducted and compared in both the groups and the obtained data was recorded and analyzed by using appropriate parametric and non-parametric tests of statistical significance. The data was expressed in Mean/ Median±SE. The p value of less than 0.05 was considered as statistically significant.

Results: The scores among interventional group (Exposure to Tutorials) was higher than when compared to the control group (Conventional/Traditional Teaching and Learning) and it was found to be statistically significant ($p<0.001$). The scores among interventional group (Exposure to Tutorials) was higher in all the periodic assignments and it was persistent throughout the study period when compare to the control group (Conventional/Traditional Teaching & Learning) with $p<0.01$.The study participants opined with a very positive note on the intervention and with a feedback to inculcate the tutorial classes in every discipline of medical subject to increase their interest in the teaching and learning process.

Conclusion: Conducting of serial tutorials classes in first year medical students significantly improved the academic scores in physiology discipline

Abstract-17

A Comparison of Self-Directed Learning and Didactic Lectures for Teaching Embryology among First Year Medical Students

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Introduction: Embryology teaching seems to be an important aspect of the medical education. It helps undergraduates to understand the developmental process and appreciate the birth defects. In health care professional studies, Self-Directed Learning (SDL) is considered an indispensable learning parameter. Numerous attempts have been made to compare the didactic lectures with alternative forms of self-directed learning.

Aim:1.To compares the effectiveness of self-directed learning with didactic lectures in learning embryology among first year medical students 2.To assess the perception of students towards self-directed learning.

Materials and Methods: This was a comparative study conducted on 80 Phase I MBBS students of private medical college in Telangana. Students were divided into two batches (Batch A and B) of 40 each. On the first day, batch A was given a didactic lecture, while batch B underwent a self-directed learning session with all the study materials provided. A pre and post-test questionnaire was administered. On the second day, the batches were reversed and another similar topic was dealt with. Perception towards self-directed learning was collected using a pre-validated questionnaire.

Results: The mean score of the students in SDL method was more than the lecture method and was statistically significant ($p\leq0.05$).

Conclusion: Students choose self-directed learning as it improves the understanding of the subject and helps to clear the doubts. Embryology should be taught by different methods at the right level and context.

Abstract-18

Correlating the Duration of Formalin Exposure and the Frequency of Nuclear Abnormalities in Formalin Exposed Individuals- A Cross-sectional Study

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Introduction: Formalin can induce nuclear and cytoplasmic changes in the living cell. Micronucleus assay is the most simple, inexpensive method to find out the nuclear abnormalities at an early stage. Authors wanted to correlate the duration and the frequency of nuclear abnormalities among formalin exposed individuals.

Aim: To correlate the frequency of nuclear abnormalities and duration of formalin exposure in formalin exposed individuals. To find the frequency of micronucleus in all groups, To find the frequency of metanuclear abnormalities (KL, KR, BN) in all groups.Compare the frequency of nuclear abnormalitiesand the duration of exposure among all groups

Materials and methods: Faculty and non-teaching staff working in the Department of Anatomy, first-year students were included in this study. Study sample consists of 50 subjects and was divided into five groups according to the years of exposure. By scraping with the wooden spatula in the buccal mucosa oral squamous cells were collected and smeared on the slides. The smeared slides were fixed with methanol glutaraldehyde fixative and stained with giemsa, maygrunwald stain. After air drying 1000 cells were screened for Micronucleus (MN) and other nuclear abnormalities.

Results: The mean MN and metanuclear abnormalities were more in individuals had more than 15 years of exposure.

Conclusion: Mean MN frequency was group with more than 15 year of exposure.

Abstract-19

A Profile of Renal Anomalies among Stillborn Fetuses in a Tertiary Care Hospital

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Introduction: Renal anomalies refer to the structural or functional abnormalities of the kidney which occur during the intrauterine developmental process.

Aims: The objective of this study is to determine the pattern of distribution of renal anomalies among stillborn fetuses through an autopsy study. To find out the association between congenital anomalies and maternal factors as well as fetal factors.

Materials and Methods: This descriptive, cross-sectional study consists of 50 stillborn fetuses. The fetuses were collected from the Department of Obstetrics and Gynecology, JSS Hospital, Mysuru. The fetus was fixed in 10% formalin and formalin was injected into the thoracic cavity, abdominal cavity, and cranial cavity for fixation of the organs. The autopsies were performed as per standard fetal autopsy protocol.

Results: Out of the total 50 stillborns studied, renal anomalies were present in five cases (10%). Among the five fetuses, two were male and three were female and the ratio of male to female is 2: 3. The infantile polycystic kidney disease was the most common anomaly observed. The other anomalies were renal cystic dysplasia, renal agenesis, and Meckel Gruber syndrome.

Conclusion: This study confirms the utility of fetal autopsy in identifying the cause of fetal loss which will help in counseling the couple for future family planning. When the couple face a fetal demise, there are always apprehensions about the cause of death and its recurrence risk. The fetal autopsy is the gold standard in the investigation of the cause of fetal death.

Abstract-20

Dissection Demonstration Videos in Anatomy Education during COVID-19: An Effective Teaching Tool

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Introduction: COVID-19 created unparalleled challenges to anatomy education. In response to the mandatory stay-at-home orders educators were forced to rapidly transform their teaching to a distance education format. All teaching modalities were re-designed in a more effective way to meet the need for remote education. A multimodal anatomy education approach was introduced by employing the communication advances. Dissection demonstration videos was one of the effective teaching tool introduced in anatomy during COVID-19.

Aims: The current questionnaire-based study aims to evaluate the students perspective about efficacy of the pre-recorded dissection demonstration videos in comparison to live dissection.

Materials and Methods: The adequacy of the pre-recorded dissection demonstration videos was measured employing an online questionnaire. The study was conducted on 150 1st MBBS students.

Results : Upto 70 % of the students disagreed with the permanent replacement of the "classroom-based" by the "online" lectures. Combined teaching tools were the most preferred resources. A total of 92 % of the students stated that the dissection labs cancellation negatively affected their education, and 85 % supported the permanent addition of the pre-recorded dissection demonstration videos in the lectures.

Conclusions: COVID-19 pandemic created the temporary need for pure remote education. During lockdown, the use of self teaching tools has significantly increased. A novel teaching modality, dissection demonstration videos presented in the study, can be used both as educational material and as a self teaching tool.

Abstract-21

Food Color Additive Induced Liver Damage: Histopathological Study

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Introduction: These days, food products industry involves addition of food colors, which comprises of many food dyes, including caramel colors. 4-Methylimidazole is a component of various caramel-colored food products such as bakery, beer, soft drinks, coffee and sauces, which are consumed daily.

Aims: To study the histomorphometry in liver of 4-Methylimidazole treated albino rats with special reference to the size of hepatocytes and their nuclei.

Materials and Methods: Adult male Wistar albino rats were procured and divided into control and experimental groups. The experimental animals were given 4-Methylimidazole at a dose of 250 mg/kg body weight daily for one month, while the control animals received distilled water. At the end of experiment, animals were euthanized and histopathological processing of liver was done.

Results: The histomorphometric observations of liver in experimental rats revealed significant increase in sinusoidal width indicative of sinusoidal dilatation. Significant increase in the size of hepatocytes while a decrease in the size of their nuclei was noted, suggestive of ballooning degeneration.

Conclusion: The study findings suggest hepatocellular damage caused by ingestion of 4-methylimidazole found in caramel food additives.

Abstract-22

Mastoid Canals and Grooves in Adult Human Skulls

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Introduction: The mastoid canals and mastoid grooves are formed within the mastoid part of temporal bones of skull, these are present on the external surface of mastoid region, anterior to the occipitomastoid suture, behind and parallel to the petrosquamous suture and anteroinferior to the asterion.

Aims: The study was conducted to observe the incidence of mastoid canals and grooves in dry adult human skulls.

Material and method: Total of 120 dry adult human skulls consisting of 80 male and 40 female were examined to determine the incidence of mastoid canals and grooves. The mastoid parts of both sides were examined for the presence of mastoid canals and grooves. Then length of mastoid canals was measured.

Results: Out of the total of 120 skulls, mastoid canals were observed in 8.75% of skulls. The incidence of mastoid canals was 10% in females and 8.12% in males. The incidence of mastoid grooves was 10.42% of total skulls. It was 11.88 % in male skulls and in female skulls, it was 7.55%.

Conclusion: The knowledge of mastoid canals and grooves of the temporal bones is very useful to the neurosurgeons and ENT surgeons while doing surgery to avoid severe bleeding.

Abstract-23

Efficacy of Flipped Classroom in Human Embryology for First Year Medical Undergraduates

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Introduction: A flipped classroom is one such blended learning method that delivers an online content outside the classroom where students can learn in their own pace, place and time. Hence, incorporating flipped classrooms with active learning strategies may enhance student's understanding of human embryology and may also improves their performance during their assessments.

Aim: The aim of this study is to evaluate the efficacy of flipped classrooms in human embryology for I MBBS students and compare it with traditional didactic lectures in embryology. 1. To implement flipped classroom teaching method in human embryology for first year MBBS. 2. To evaluate the efficacy of flipped classroom teaching method and compare it with traditional teaching methods.

Methods and materials: This study will be conducted with 250 I MBBS students of Sri Ramachandra Medical College and Research Institute, Porur, and Chennai. The students will be divided into two groups: a test group and a control group by using a randomization software. Embryology topics of general embryology will be used for traditional didactic lectures for 125 students. Embryology topics of general embryology will be used for flipped classroom sessions which will be uploaded to the e-learning site of the college for another 125 students. Informed consent consent was taken from the students before starting the study. Embryology topics of General embryology will be taken via traditional didactic lectures for 125 students (Batch-A) followed by an objective type assessment test. Embryology topics of General embryology were taken as Flipped classroom sessions as another 125 students (Batch-B) were accessing to the online course contents prior to attending classes. Online course content will be in the form of PowerPoint presentation with embedded audio narration and varying degrees of user interactivity. During the classroom sessions, the topic were discussed in small group by the teachers stressing importance on clinical aspects and an objective type assessment test was be conducted. Test answer scripts were evaluated by same set of examiners and the results of both tests were statistically reviewed. Feedback will be taken for evaluating the efficacy of the study statistically.

Conclusion: Blended learning is a term used to describe different teaching methods that blends both face to face and online delivery methods. A flipped classroom is one such blended learning method. The classroom time can be used to focus on active learning activities like concept discussion sessions to clarify any doubts or to stress the importance of some concepts and also to have collaborative work to enhance student teacher interactions. Embryology is one of the disciplines in Anatomy which is the study of human development from conception till birth. Clinical Embryology is one of the newly emerging fields gaining importance because of successful artificial reproductive therapies. Hence, knowledge of basic embryology becomes crucial for medical undergraduates and it also helps to understand congenital anomalies and its complications. In spite of its clinical importance embryology carries less weightage during examinations. Since, a majority of students focus on an exam oriented approach to their learning, they tend to give less importance to understand the concepts of embryology. It is challenging to engage student's

attention during traditional didactic lectures on embryology. Changes in medical education with decrease in time allocation for basic medical sciences and also increase in the number of students have challenged the ability of teachers in delivering effectively the medical knowledge to students. Hence, flipped classrooms session with active learning may help student's understanding of human embryology and may also improves their performance during their assessments.

Interpretation of Abnormal Breast Tissue in Mammogram

Abstract-24

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Introduction: Breast is made up of tissues with different consistency like fat, connective tissue and glands. Menstrual cycle causes physiological changes in its consistency but pathological changes are of great concern. Breast lumps are common and most of the times they are benign especially in young women but breast cancer is the most often diagnosed cancer and the most frequent cause for cancer-related deaths in women worldwide. In India, breast cancer has surpassed cancers of the cervix and the oral cavity to be the most common cancer and the leading cause of cancer deaths. Any newer approach in the diagnosis the breast cancer is of greater significance, owing to the gravity of the disease.

Aims: To interpret the abnormal mammogram using image processing technique like pattern matching.

Materials and methods: Mammograms were analysed using following methods, data set collection, mammogram image capturing, processing of mammogram images and data set images to extract required data.

Results: Differentiation of normal and abnormal tissue in the mammogram is interpreted.

Conclusion: Successful attempt is made to interpret the abnormal breast tissue in the mammogram which can aid in automation of diagnosis of breast cancer and thereby helping in immediate treatment.

Lung Involvement in COVID-19 Patients Correlated with Biochemical Parameter- A Retrospective Study

Abstract-25

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introduction: COVID-19 is very contagious respiratory disease. Its common symptoms include fever, cough, shortness of breath, loss of taste or smell, while its complication includes pneumonia, viral sepsis, acute respiratory syndrome, kidney failure and cytokine release syndrome indicating as multi-organ failure in a body, thus emerging as a serious disease. Standard method of diagnosis is Reverse Transcription Polymerase Chain Reaction (RT-PCR) supported by chest CT scan and chest X-Ray. Other available laboratory diagnostics include serum biomarkers.

Aim: To study the segmental lung involvement in COVID-19 patients in CT thorax and to correlate it with the biochemical parameters.

Materials and methods: The study was done at SRIHER, Porur, Chennai, in which CT thorax images and Biochemical parameters of 50 subjects of age above 18 years who were tested COVID-19 positive with lung involvement were utilised for detailed analysis.

Results: There was a correlation between radiological abnormalities in chest CT and serum biochemical parameter abnormalities.

Conclusion: The biochemical markers act as indicators and might support clinical decisions to identify high fatality cases.

Abstract-26

Evaluation of Early Clinical Exposure Modules

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Introduction: In the year 2019, a Competency-Based Medical Education curriculum was implemented in the medical curriculum by National Medical Commission for medical students. The curriculum for first-year medical students mandates the introduction of six basic science correlation sessions and four clinical visits of Early Clinical Exposure (ECE) for each of the preclinical disciplines as part of the student doctor learning programme.

Aims: We aimed at evaluation of conduct of ECE sessions. Our objectives were to analyse perceptions of hundred first year medical students about ECE modules and to compare the methodology for 2019 and 2020 batch of students.

Materials and Methods: Author the 2019 batch, six basic science correlation ECE sessions were held in the physical modality, and six identical modules were held online for the 2020 batch. To get input, both batches were given a cross-sectional survey utilising a semi-structured questionnaire.

Results: The sessions were rated as fascinating by 97 percent of 2019 batch students and 100 percent of 2020 batch students. Both groups of students were eager to learn the material presented in ECE sessions.

Conclusion: The majority of students agreed that ECE sessions improved their understanding of clinical anatomy connection. Students were equally accepting both the physical and online modes of conducting sessions of ECE. Sessions in both the physical and online modes take the same amount of time, however the online version has the advantage of having more E-resources. At the time of presentation, the inhibitory variables for session conduct will be discussed.

Abstract-27

A Rare Anatomical Variant of Bilateral Lateral Position of External Carotid Artery: A Case Report

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Introduction: Many variations in the origin, position and branches of external carotid artery have been reported in the literature. A knowledge of the variations in the position of external carotid artery is essential during surgical procedures in the head and neck region.

Case Report : During routine dissection of neck region, a rare anatomical variation of external carotid artery was observed in a male cadaver. The external carotid artery was located lateral to the internal carotid artery and medial to internal jugular vein on both sides.

Discussion: The external carotid artery is one of the terminal branches of common carotid artery. At the origin, the external carotid artery usually lies anteromedial to the internal carotid artery. As the artery ascends, it lies lateral to the internal carotid artery. In this case the origin of external carotid artery was found to be at the level of upper border of thyroid cartilage and it was located lateral to the internal carotid artery at the bifurcation of common carotid artery on both sides. In a study by Anangwe et al., external carotid artery was anterolateral in position in 30% cases.

Conclusion: An accurate knowledge of the anatomical variations in position of the external carotid artery is crucial for identifying the artery in the surgeries of head, face and neck.

Abstract-28

Epoxy Resin as Mounting Medium- A Novel Method for Teaching and Learning

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Introduction: Anatomy Museum is an indispensable part of a medical college since it gives complete knowledge of the human body in its four walls. It not just displays meticulously and painstakingly prepared prosections of different body parts and organs but also includes many other teaching aids.

Aim: The aim of the study is to use epoxy resin to mount specimens for anatomy museum and also to overcome the difficulty in traditional mounting methods.

Materials and Methods: Epoxy resin mixture with hardener, fresh goat kidney, and liver plastic mould and Perspex/glass jar was used. The fresh specimens were mounted using epoxy resin and allowed for curing.

Result: The result obtained was a crystal-clear epoxy resin mounted specimen. The demonstrator as well as the students may feel comfortable and easy to handle as well as to teach and learn.

Conclusion: The greatest advantage of this technique was it can be stored and maintained for a long time in the museum without forming any discolouration and dusting of the mounted specimens.

Abstract-29

Merits and Demerits of Virtual Learning among Paramedical Students during COVID-19 Pandemic

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Introduction: In 2019, COVID-19 originated from China and rapid spread throughout globe. Transmission of SARS-CoV-2 is high as a result; WHO and countries worldwide have imposed rigorous public health concern, such as lockdown and social distancing. This results the closure of educational institutes globally. Since the outbreak of COVID-19, paramedical institutes have sought ways to shift from traditional teaching to virtual teaching.

Aim: The aim of this study was to determine the perception of 1st year paramedical students and to analyze the merits and demerits of virtual learning during the COVID-19 pandemic.

Materials and Methods: A descriptive cross-sectional study was conducted at Sri Ramachandra Medical College and Research Institute, Chennai for Paramedical courses Microbiology, BSc sports science and BSc Speech therapy courses. Phase –I students participated in this study with a sample size of 400. A self-designed questionnaire was prepared, after the validation of questionnaire from various field experts, the questionnaire was shared through whats aap application and mail to the participants. The data obtained were analyzed statistically through Microsoft excel.

Results: Total of 400 responses were received out of which there were 172 males and 228 females. Overall, 60% of students had negative perception towards E-learning. A total of 54.76% of the students used mobile device for their virtual learning. Out of which 52% had eye problems, sleep disturbances and neck pain.

Conclusion: In the initial phase of COVID-19 lockdown the students appreciated the virtual E- learning classes but they were not interested in continuing the same after the COVID-19 pandemic. They also felt that face to face teaching was more effective than virtual learning.

Abstract-30

Effect of Pyrethroid Pesticides on Behaviour of Adult Mice

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Introduction: Pesticides are described as chemical substances that are used for the eradication of rodents, insects, weeds and unwanted organisms. Since before 2000 BC, humans have utilized pesticides to protect their crops. A pyrethroid is an organic compound similar to the natural pyrethrins produced by the flowers of pyrethrums. Pyrethroids constitute the majority of commercial household insecticides. However, owing to their very nature, that is, to disable and/or kill, they still pose a threat to the nontarget species.

Aims: Aim of the present study is to elicit the effect of commonly used pyrethroid pesticide on the behavior of the non-target species.

Material and methods: Adults wiss albino mice weighing 20-25 gm (average age of 80-100 days) were used after approval of institutional ethical committee. Drug used was 2nd generation pyrethroid pesticide – Cypermethrin.

Result: On performing open field exploratory and elevated plus maze test on mice, behavioural changes such as anxiety and depression were observed.

Conclusion: Pesticides should be used with care and in recommended dose.

Abstract-31

Student's Perception about Teaching Learning Methods in Anatomy

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Introduction: Teaching learning methods are challenging in medical education for both the teachers and students.

Aims and objectives: The present study has been taken to see the students perception regarding the different teaching methods.

Materials: Input from the students were collected from the 250 MBBS students of 2020-2021 batch who completed first year MBBS. It was done by using a specially designed questionnaire related to teaching methodology. The analysis has been done to see the results.

Results: According to the survey, the power point presentations (44.7) was found to be the best teaching method which is better for understanding the subjects. The group discussion was found to be time consuming method.

Conclusion: The opinion of the students were reasonable, justifiable and needs to be taken for consideration in teaching.

Abstract-32

Study of Adults Femoral Neck-Shaft Angle in Population of Darbhanga, Bihar

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Introduction: The femoral neck-shaft angle is between the long axis of the vertical shaft and the long axis of the obliquely oriented femur neck. Therefore, the measurement of a femoral neck-shaft angle is an essential parameter for evaluating biomechanics of the hip joint. The neck-shaft angle varies with different ages, sex, and race. The normal range of neck-shaft angle varies from 120 degrees to 145 degrees with an average of 135 degrees.

Aims: The aim of this study was to find out the neck-shaft angle of the femur concerning both sexes in the population of Darbhanga, Bihar, and correlates with previous studies.

Material And Methods: The present study was conducted on 50 dry adult femoral bones of both sex at Darbhanga Medical college, Laheriasarai, Darbhanga, Bihar, from March 2020 to October 2021. The bone was held in the anatomical position on an osteometric

board. In addition, a handheld 360-degree goniometer measured the neck-shaft angle. The sex was determined by morphology and with the help of records. The statistical analysis was conducted on Microsoft Excel 2013, and descriptive statistics were computed. Further, the Unpaired T-test was applied to observe the gender and laterality differences.

Results: The average angle found in 30 dry femurs of males was 130.5±5.5 degrees and 129.5±4 degrees in females. The minimum angle measured in all femurs was 120 degrees, and in maximum was 138 degrees. Thus, the difference between the two sex is 1 degree, which is negligible (p-value>0.05).

Conclusion: There is not much difference in the angle of male and female, being slightly more in male. The present study is helpful for orthopaedic surgeons in the diagnosis and treatment of fractures and diseases in and around the neck and trochanteric region of the femur. The neck-shaft angle of the femur is increased in Poliomyelitis, Congenital dislocation and or subluxation of the femoral head, and in decreased congenital coxa Vera.

Sub Hepatic Caecum with its Clinico-Embryological Significance: A Case Report

Abstract-33

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Introduction: Most cases of sub hepatic caecum and appendix are asymptomatic and hence remain unnoticed. Inflammation in sub hepatic located appendix may mimic hepatobiliary or gastric pathology clinically. This may lead to delayed diagnosis and results in many surgical complications. It is a rare congenital anomaly and results due to anomalies of midgut rotation.

Case Report: During routine dissection for undergraduate teaching in Anatomy Department, SGT medical college, variations were noticed in the position of caecum and appendix in a 60 years old male cadaver. The caecum and appendix were sub hepatic in position. The right iliac fossa was empty. The ascending colon was absent. The vermiform appendix was attached to its posterior wall and sub-caecal in position. The terminal part of ileum and caecum were supplied by right colic artery a branch of superior mesenteric artery instead of ileocolic artery.

Discussion: The subhepatic caecum is a rare abnormality of midgut rotation. The caecum fails to elongate and descend into the right iliac fossa. Atypical anatomical location of caecum may influence pattern of clinical manifestation of acute appendicitis and surgical outcomes.

Conclusion: This type of developmental error along with appendicitis can pose a significant challenge in its diagnosis and surgical management. Knowledge of such embryological variations are of paramount importance to surgeons and radiologists to prevent surgical complications.

An Online Undergraduate Medical Examination Conducted Using the Learning Management System- Moodle 3.9

Abstract-34

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Introduction: With the advent of the coronavirus pandemic, Higher Education Organizations (HEOs), including medical schools, started using online education to effectively teach, and evaluate students' performances. An increasingly popular contemporary modality offered by the digital e-learning market is a Learning Management System (LMS).

Aims: The aim is to assess Moodle v. 3.9 as a tool to conduct online medical examinations. The objectives are: 1. To collect student feedback 2. To discuss technical aspects with Moodle experts 3. To implement necessary changes based on the feedback and discussion.

Material and Methods: A short-term longitudinal observational study was conducted at the Symbiosis Medical College for Women, Pune, India to collect feedback from 143 students with regards to their online exam experience with Moodle and the technical difficulties they faced were noted. In collaboration with software experts, certain technical changes pertaining to bandwidth requirements were implemented.

Results: Authors observed that the students require extra time as compared to the online exam scenario for conversion of their answer sheets into PDFs, and this technical consideration needs to be taken into account while designing such exams. Authors also established the server band width that is essential for an uninterrupted online exam experience at the institute level. Lastly, student feedback suggested that the online examination environment is perceived as more stressful, compared to its live counterpart.

Conclusion: Authors concluded that cost-effectiveness, user-friendly interface, and a multitude of assessment-related features make Moodle an efficient tool for conducting online medical examinations at the undergraduate level.

Abstract-35

Reasons of Disinterest in Classroom Studies of Medical Students

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Introduction: National Medical Commission has made the mandate of 75% class attendance as eligibility criteria to appear in professional university examinations. Which has given the importance to class attendance, through which the student can improve his academic performance and score good marks in exams also. As per CBME Classroom lectures and small group discussions is necessary to develop self-confidence in cognitive domains.

Aims: The purpose of the present study was to analyze the causes of disinterest in lectures.

Material And Methods: This descriptive, cross-sectional study was conducted on 580 students from phase I to phase III MBBS students of Saraswati Medical College Unnao, India. The response was collected through a structured, pretested questionnaire. Result was concluded on Likert scale and SPSS 22 software.

Result: The results showed that major reasons for student disinterest were long class room study hours (mean 3.95), target based post graduate studies (mean 3.78), teaching ability of faculty (mean 3.72), social media (3.58), you-tube and online studies (mean 3.39), ill health (mean 2.57), over confidence (mean 2.81), other factors (mean 2.23).

Conclusion: Due to different reasons students do not attends the lectures. So it mandatory to increase the positive bonding between mentor and mentee. Faculty must be trained commonly the first professional faculty members. Otherwise, the student will face the problems later on in professional life.

Abstract-36

Role of a Digital Human Anatomy Museum in Teaching- Learning during the COVID-19 Era

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Introduction: The museum of human Anatomy plays a prominent role in exploring the structural organization of the human body. However, in the current pandemic era, it has been observed that the entry to Anatomy museum was restricted. The students rarely visit the museum and prefer to browse the internet for learning videos and explanations of the dissected human specimens.

Aim: The present project was undertaken to develop the Anatomy museum as an innovative online educational tool through the digitalization of human body specimens.

Materials and Methods: High-resolution pictures of 100 core specimens were captured, categorized according to the organ systems, and stored in a database along with the relevant explanation and voiceovers. A database of the digitalized anatomy exhibits and the online management platform was then built as a website. The website was made accessible to the student community and the public.

Results: The efforts of digitalizing the human specimens of the Anatomy Museum were well appreciated and encouraged by the students and the public alike. The reflections recorded from the students were subjected to thematic analysis and theme were identified.

Conclusion: The study concludes by stating that the digitalized human Anatomy museum is an excellent educational tool for teaching and learning Anatomy. The students from various streams of Health and Allied Sciences will be immensely benefitted from the digitalized Anatomy Museum, especially in these pandemic times.

Abstract-37

Analysis of a Tool for Online Formative Assessment

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Introduction: With the changing trends of teaching methodologies in COVID-19 pandemic era, medical teachers need to adapt to the advancing technologies available for teaching as well as assessment. The present study, an online Anatomy quiz was conducted for MBBS first year students from different Medical Colleges of Punjab and Chandigarh with the help of an app called 'Mentimeter' as a part of 'The World Anatomy day' celebrations.

Aims: 1.To assess the efficacy of the mentimeter app as a teaching aid for assessments. 2.To objectively assess the quality of MCQs.

Material and Methods: An Multiple Choice Question (MCQ) quiz of gross Anatomy was prepared on Mentimeter app. Through a google form link shared with the students of Medical Colleges of Punjab and GMCH Chandigarh, the students registered for the quiz. Quiz was conducted through an online quiz app "Mentimeter" on 11th October 2021. Students' feedback was analyzed using Microsoft excel.

Results: The result was immediately displayed on the screen. An excel sheet was obtained later, on the registered email from the software used and the results were then analyzed objectively to see the difficulty level and discrimination score of the MCQs. Overall, the difficulty level was perceived as moderate by majority of the students subjectively.

Conclusion: Although having few limitations, this study proved that the tool used for quiz was quite useful in quick assessment of students.

Abstract-38

Effect of Mobile Phone Radiations on Semen Quality and Fertility among the Males of Frequent Mobile Phone Users

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Introduction: Mobile phones when used for prolonged periods can cause genotoxicity. Although according to the SAR values most of the mobile phones emit radiofrequency radiation within safety limit, long-term use of mobile phones shows definite signs of DNA damage.

Aims: To study the effect of mobile phone radiations on semen quality and fertility among the males of frequent mobile phone users.

Materials and Methods: A total of 75 participants between the age group of 20-40 years (50 high mobile users, 50 moderate mobile users and 50 mild mobile phone users) were selected for the study in and around Salem, Tamil Nadu. Before sample collection informed written consent from each participant will be collected. A structured, valid and reliable questionnaire will be completed through a personal interview from each subject at the beginning of the study. The sperm parameters including volume, liquefaction time, pH, viscosity, sperm concentration, motility and morphology was analysed.

Results: Many studies proved that the mobile phone radiations affect male fertility by enhancing irretrievable changes in semen parameters. Some studies also disprove the above. The current study showed the adverse decrease in male fertilizing potential of spermatozoa. Sperm morphology also showed changes.

Conclusion: This study will help to detect the fertility induced in mobile phone users by semen analysis. Awareness can be created towards the genotoxic response from frequent mobile phone usage and needed precautions can be suggested by using biosensors that can detect the radiations and give a warning to the frequent mobile phone users.

Abstract-39

Aortic Knuckle and its Contribution to Left Heart Border: A Radiographic Study

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Introduction: The chest radiograph remains the most important method of chest imaging, providing an easily accessible, cheap, and effective diagnostic tool. Aortic knuckle and aortic nipple are an important finding in chest radiograph. Aortic knuckle enlargement suggests underlying cardiovascular co-morbidity including hypertension.

Aims: To analyze the contribution of aortic knuckle to left heart border in normal population in chest radiograph, identify the presence of aortic nipple and its significance.

Materials and methods: Postero-anterior (PA) chest radiographs of 108 individuals between the ages of 18 to 75 years were evaluated. Curved length of Aortic Knuckle (AKC), total length of Left Heart Border (LHBT) and Aortic Knuckle Index (AKI) were measured. Statistical analysis was carried out with the help of IBM-SPSS (IBM Corporation) and Microsoft Excel.

Results: AKC and AKI were measured,and correlated with total lenght of LHBT. A positive correlation between AKC, AKI and LHBT was noted.

Conclusion: Simple measurement of aortic knob in PA chest x-ray may help in predicting cardiovascular disorder.

Abstract-40

Effectiveness of Virtual Therapeutic Exercises in Improving the Physical and Mental Health among the Patients Recovering from COVID-19

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Introduction: A novel coronavirus (COVID-19), caused a series of acute atypical respiratory syndrome termed as SARS CoV-2. It has a varying degrees of symptoms like headache, high fever, dizziness, generalized weakness, diarrhoea and vomiting. But primarily it affects the respiratory system causing breathlessness and sometimes may be fatal. People recovered from the illness had variety of physical and mental illness.

Aims: To find the effectiveness of virtual therapeutic exercises and mindfulness programme among the subjects recovering from COVID-19.

Materials and methods: A total number of 32 male subjects aged between (55 – 70) years were included in this study. The subjects were included based on the prescription of a medical officer/ pulmonologist. The duration of the study was eight weeks. Fitness assessment scale, hamilton stress anxiety scale and modified respiratory assessment scale was used. The study was conducted in the Symbiosis Medical College for Women, Pune.

Results: The statistical analyses were done using the SPSS software version 18 executed at a 95% confidence interval. A paired t-test was done to find the effectiveness of the therapeutic exercises. The level of significance in all tests was set to $p < 0.05$. Positive changes were observed in health-related fitness among the subjects.

Conclusion: This study reports about finding that virtual therapeutic training also provides the best results in physical and mental health among the patients recovering from COVID-19.

Abstract-41

Topographical Landmarks for the Identification of Lateral Calcaneal Artery over the Ankle and Foot- A Descriptive Cadaveric Study

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Introduction: India is on the top of the global map in diabetes with 72 million cases and a prevalence of 7.3% The lifetime risk of a diabetic patient for foot ulcer is as high as 25% Lateral Calcaneal Artery (LCA) flap is used for treating skin defects of the foot.

Aim: The study aimed to find the relationship between the LCA and the Lateral Malleolus (LM) to delineate the topographical landmarks for identifying LCA while designing the LCA flap surgery. 1.To study the course and topographical landmarks for identification of LCA in the ankle and foot.2.To compare the luminal diameter of LCA at 3 different points.3.To define a safe zone for incision of LCA flap surgery.

Materials And Methods: The foot was dissected to identify LCA in 32 formalin-fixed lower limbs. The LCA was identified and separated from the superficial fascia of the foot. Measurements such as the point of emergence of LCA from the deep fascia, the distance between the LCA and LM was taken in (a) horizontal plane (b) 45° oblique plane passing (c) vertical plane from the most prominent point on LM. The luminal diameter of LCA was noted using micrometry with LCA tissue blocks.

Results: The distance between the point of emergence of the LCA from the deep fascia and the lateral border of the foot was found to be 61.40±6.36 mm.In the horizontal plane, the LCA was present at a mean distance of 24.56±5.2 mm from the LM. In the 45° oblique plane, LCA was present at a mean distance of 29.10±6.12 mm from the LM. In the vertical plane, the LCA was not found to be present in all the cadavers. The mean internal diameter of the LCA was found to be1.02±0.37 mm using micrometry.

Conclusion: LCA was present in the horizontal plane and 45° oblique plane and was absent in the vertical plane in relation to LM, hence the LCA flap should not extend beyond the 45° oblique plane and the internal diameter of LCA should not be less than 1.02 mm.

Abstract-42

Relationship of Patency of Accessory Pancreatic Duct and Inter-Papillary Distance in Duodenal Mucosa

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Introduction: Pancreas is perhaps the most unforgiving organ in human body, leading most surgeons to avoid even palpating it unless necessary. A wide spectrum of anomalies of the pancreas, pancreatic ductal system and biliary tree are commonly encountered of radiological evolution.

Aim: This is a cadaveric study, performed to know the potency of Accessory Pancreatic Duct (APD) is related to distance between major and minor duodenal papilla (interpapillary distance) or not.

Material and Method: This study was performed in 26 cadavers, C-loop of duodenum along with pancreas was removed from the body, APD was explored and dye was injected into it, appearance of dye in duodenal mucosa showed that the APD was patent. Inter-papillary distance was measured in cm through vernier-calliper.

Results: The mean inter-papillary distance in cases of patent APD was 2.29±0.2 cm and in cases of not patent APD was 1.85±0.25 cm. In male, this distance in patent APD was 2.3±0.22 cm and in nonpatent APD was 1.85±0.40 cm. In female, this distance in patent APD was 2.28±0.16 cm and in nonpatent APD was 1.82±0.57 cm.

Conclusion: Statistical analysis confirmed that the mean inter-papillary distance of patent APD was more than that of non-patent APD.

Abstract-43

Calculation of Difficulty Index of Soft Tissue Spotters in Anatomy: An Advance, Novel Method of Assessment in University Examination, A Cross-sectional Study at GMC Jagdalpur Chhattisgarh

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Examination is an official test that shows the knowledge and ability in a particular subject. Spotting method of soft tissue of first MBBS student seems to be better than viva form of practical examination. This method of assessment is very easy, simple, less time consuming and an effective method in both formative as well as summative assessment of first MBBS students. This study was conducted on spotting answers of first MBBS 2013-14 batch pre university examination in dept. of Anatomy at LSBRKM Govt. Medical College Jagdalpur (C.G.) 50 students of 1st MBBS and 40 spotting questions were selected. Every day 20 questions were kept region wise like extremities-6, Abdomen-5, Thorax-4 and HNF-5 i.e. 20 Questions= 20 marks. Each questions consists of two component. First component of question was concerned with identification (Knowledge) and other component was related with skill and clinical correlate. After using appropriate formulas and software difficulty index were calculated for each questions and their component. Spotting answers >70% correct were easy, <30% correct were difficult. Questions were ranging from Difficult, Good and Easy i.e.00-0.33, 0.34-0.67 and 0.68 to 1.00 respectively. After final calculation it has been found that 16 questions were difficult, 15 questions were good and 09 questions were easy i.e. Most of the items were of acceptable (Good) difficulty index (45% to 50%). Easy spotting questions were in reasonable amount (15% to20%) but difficult questions were also there around 40% to 45%. There were 5% to 10% questions of poor quality which can be improved or should be deleted from question bank.

Abstract-44

E-Professionalism as a New Prototype of Medical Education in the Era of Social Networking

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Introduction: The rapid development in the field of digital technology can pose lot of risks to the professional practice and health education. E-professionalism includes online information that reflects the professional identity and values. Emerging issues related to web application have raised new questions on student professionalism. These questions are challenging and difficult to answer without a frame work.

Aims: The aim of the present study was to discuss appropriate use of social media and to characterize resilience in e- professionalism with emphasis on medical education. This review can also define and create a new construct of e professionalism, how e professionalism will interfere with the traditional framework of professionalism, the attitudes, behaviours in personal digital settings.

Material and methods: Concept review was investigated by reviewing all available texts on professionalism through all search engines from 2008 to 2021.

Results: 258 articles were checked in the review. 18 articles were chosen for this study. Articles were categorized into definition and importance of social media and perception and role of virtual environment in defining medical professionalism.

Conclusion: E-Professionalism should be the part of curriculum in teaching, learning and also evaluated. Curricula should focus on appropriate use of social media by upholding the core elements of medical professionalism.

Abstract-45

Integration of Innovative Educational Technologies in Anatomy Teaching- New Normal in Anatomy Education

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COVID-19 pandemic has created a lot of turmoil in medical teaching, the magnitude of impact is many folds in the subject of anatomy, as it is practical based. A major challenge for anatomy teachers is to replicate the experience of practical exposures. These exposures range from cadaveric dissection to demonstration of bones, museum specimens, and histology slides, where they will have interactive communication with students, and thus, help in the enhancement of communication and clinical skills among them. In recent days, anatomy teachers throughout the globe started using various advanced technology to make the teaching-learning session more interesting. In pre-pandemic era, usage of such advancements in information and communication technology was a 'choice'. But pandemic has changed the situation drastically, what was a 'choice' earlier is now an 'obligation'. Presently although, infection rate is low, vaccination rate is high, most of the medical schools re-opened for usual offline teaching, still body donation is all time low making the situation 'back to square one'. Keeping such unprecedented situations in mind, we need to incorporate various innovative educational technologies in day-to-day teaching- learning methodologies.

Abstract-46

Effect of Body Weight on Arches of Foot- A Correlative Study between BMI and Arch Index

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Introduction: The arches of the feet are important in protecting the internal structures of the body from impact forces while it mainly helps in transferring the internal forces to the ground and are also involved in lifting the body weight and mainly shock absorption With respect to the medial longitudinal arch some prominent deformities can be observed - high arch i.e., Cavus foot and low arch i.e., flat foot also known as Pes planus. The deformities are responsible for inefficient transmission of forces leading to foot diseases.

Aim: The present study is an attempt to know the effect of body mass index on plantar arches. This is useful in creating awareness about the plantar arch deformities and the cause for the deformity. The parameters used in measuring the plantar arch height are Staheli's plantar arch index and arch angle.

Material and method: Over the course of two months study was conducted on 106 subjects within the age group of 18-22 years. Body Mass Index of the subjects are calculated using height and weight of the subject. Plantar arch index and arch angle were classified under One Way ANOVA test and chi-square test. Measurement of the plantar arch index is done by using Staheli's arch index and arch angle will be done by using foot print method.

Conclusion: In this study it is shown that BMI is significantly associated with Arch index and Arch angle. Arch index is significantly higher in obese and overweight subjects than underweight and normal subjects. Arch angle is significantly higher in underweight and normal subjects than obese and overweight subjects.

Conclusion: In the present study by comparing overweight and obese subjects with underweight and normal subjects, the obese and overweight subjects are more prone to have flatfoot.

Abstract-47

Immunohistochemical Study on Distribution of CD1a Dendritic Cell Density in Normal and Pathological Lesions of Human Uterus

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Introduction: Dendritic cells (DCs) are specialized antigen presenting cells in our body that are principally responsible for modulation of our immune responses. DCs identify foreign antigens and stimulate the lymphoid tissue to initiate adaptive and innate immune responses. The knowledge of the DC population of the uterus may help us to understand the various benign and malignant pathologies of uterus.

Aims: To study the distribution and morphology of CD1a (immature) Dendritic cells (DC) in the body of the uterus using various Immunohistochemical (IHC) techniques and to determine the effects of dysplastic and neoplastic cells on the dendritic cell density in pathological lesions of the body of uterus using IHC modalities.

Materials and methods: This is a prospective immunohistochemical study on 40 uterine specimens in a Medical College in South India to which the author was earlier associated with. Uterine tissue samples were collected from women undergoing hysterectomy for various benign and malignant conditions of uterus. All tissues were processed subjected for 3µm sections. DCs were identified and counted per 20 High Power Fields (HPF).

Results: Most patients had fibroid uterus (n=16). Maximum DCs of 44 per HPF were observed in fibroid uterus with secretory endometrium. The mean DC in benign tissues was 15.95 and that in the malignant tissues were 1.375 per 20 HPF (p=0.004). The mean DCs per HPF in the proliferative and secretory endometrium were 0.88 and 0.7 respectively.

Conclusions: The present Immunohistochemistry study demonstrated the distribution of DCs in the benign and malignant conditions of the uterus. A decrease in number of DCs was noted in uterus with malignancy.

Abstract-48

Assessment of Anti-microbial Protein Profile in Psoriasis

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Introduction: Psoriasis is a chronic inflammatory immune mediated disease characterized by abnormal activation of T cells and plasmacytoid dendritic (pDC) cells. pDC cells produce IFNs, which stimulates autoreactive T cells resulting in the secretion of anti-microbial proteins (AMPs) in psoriasis. AMPs promote and sustain inflammation in psoriasis.

Aims: Authors undertook this study with the following aims and objectives: 1. To assess the AMP expression in skin and circulation in patients with psoriasis, and to compare with controls. 2. To identify the association of AMP expression with disease severity and severity of inflammation in psoriasis. 3. To study the effect of standard systemic methotrexate on AMP profile in psoriasis.

Materials and methods: This cohort study involved psoriasis patients (n=30) and controls (n=30). Skin tissue and blood sample was collected from cases at baseline and at 12 weeks post-therapy with systemic methotrexate and at baseline in controls. AMPs and IL-17 expression in skin were assessed by qPCR and circulatory levels of AMPs and IL-17 were assayed by ELISA.

Results: Authors observed upregulation in circulatory levels and enhanced mRNA expression of AMPs such as HBD-2, HBD-3, LL-37, S100A7 and IL-17 in psoriasis, as compared to controls. Further, authors observed that skin expression and circulatory levels of AMPs and IL-17 were lowered at 12 weeks post therapy. Authors found that there was positive correlation between AMPs and IL-17 in cases at baseline. Authors also found an increasing trend of AMP and IL-17 expression in both skin and circulation, with increasing disease severity.

Conclusions: Authors found an immune mediated pathology in psoriasis leading to activated Th1/Th17 cells which secretes pro-inflammatory cytokines which in turns results in increased secretion of AMPs and markers of systemic inflammation such as IL-17 in the course of the progression of disease. Methotrexate helps in decreasing pro-inflammatory cytokines such as IFN-γ and IL-17 which in turn suppresses secretion of AMPs in psoriasis. Hence methotrexate significantly reduces inflammation in psoriasis, thus limiting associated co-morbidities in psoriasis.

Abstract-49

Anticancer, Antioxidant and Apoptotic Role of *Enicostemma axillare* in Human Breast Cancer Cells

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Introduction: Breast cancer is the most common cancer and the leading cause of cancer death in female population worldwide. Various treatment modalities are available- chemotherapy, radiotherapy. These lines of treatment do not decrease mortality but to a certain extent reduce morbidity. *Enicostemma axillare (E.axillare)* found in India, exhibit anticancer effects against various cancers.

Aims and objectives: The present study was designed to investigate the anticancer, antioxidant and apoptotic role of *E.axillare* on MCF-7 breast cancer cell line.

Materials and Methods: Cell viability was assayed by MTT with different concentration of ethanol extract of E.axillare and doxorubicin for 24 hours on MCF-7 cell line. Antioxidant activity of E.axillare was assessed by standard kit method by spectrophotometry. Protein expression of Bax, Bad, Bcl-2, Caspase-3, 8 and 9 were analyzed by western blotting. Data were expressed as mean±SEM, statistical analysis were done using one-way ANOVA. A p-value <0.05 was considered significant.

Results: *E.axillare* and doxorubicin decreases the cell viability. *E.axillare* increases the antioxidant levels and decreases the free radical levels in MCF-7 cell line. *E.axillare* increases the expression of proapoptotic proteins Bad, Bax and decreases the expression of antiapoptotic protein Bcl-2. The expression of Caspase-3, 8 and 9 were increased in *E.axillare* and doxorubicin treated cells.

Conclusion: The present study proves that *E.axillare* has anticancer effect. It has potent antioxidant activity. It induces apoptotic proteins and suppresses anti-apoptotic proteins. It induces both extrinsic and intrinsic pathway mediated apoptosis. Thus, *E.axillare*could be a potential natural therapeutic agent for breast cancer in future.

Abstract-50

Ascorbic Acid- Role in the Treatment of Osteoporosis

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Aim: To study the management and regulation of ROS and TNF-α activation in osteoporosis patient monocytes cultured under osteoclastogenic medium by co-culturing with natural antioxidant, ascorbic acid (rich in citrus fruits).

Methods and materials: Effects of ascorbic acid were evaluated in the treatment of osteoporosis by employing cell culture study, ELISA, GPx activity determination and GSH assay.

Results: Findings of the study showed marked suppression in GPx activity in osteoporosis patients (n=30; p<0.001) thereby showing impaired free radical neutralizing mechanism. Intramonocyte GSH levels were also significantly altered, indicative of weak antioxidant system. Lipid peroxidation by-product malondialdehyde (MDA) was high in monocytes culture of osteoporosis patients, thus confirming high oxidative stress in patients. Ascorbic acid increased GSH levels and GPx activity dose dependently to near normal values. Moreover, TNF-α and IL-1β levels in 24 hours monocyte culture supernatants were down regulated dose depending (0-100µg/ml) on patients.

Conclusion: Ascorbic acid thus has an important role in quenching free radicals the main cause of osteoporosis and thus helpful in the management of osteoporosis.

Abstract-51

Evaluation of Early Clinical Exposure through Vertical Integration- First Year MBBS Student's Perception

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Introduction: Traditional medical curriculum has developed an insurmountable barrier between preclinical and clinical subjects, undermining the significance of basic sciences in clinical contexts. Early Clinical Exposure (ECE) is one such innovative vertical integrated teaching tool which breaks the barrier between basic science learning in preclinical traditional class room and clinical setting.

Aims: To assess usefulness to the ECE through vertical integration among medical undergraduate first year MBBS students. To evaluate the perceptions of the medical undergraduate students about the ECE through vertical integration as effective tool of memory retention and skill communication development.

Materials and method: It was interventional cross-sectional study in which 250 first year MBBS students had enrolled after taking informed consent, on topic acid base balance and imbalance as basic science correlation conducted in Department of Biochemistry in collaboration with Clinical Departments of General Medicine, Emergency Medicine and Paediatrics. Usefulness of ECE as vertical integration assessed by providing pre-test after traditional class room teaching. Post-test was conducted after ECE session. A validated questionnaire was administered through Google form link among phase I medical students of batch 2019 to 2020 after ECE session. Post session feedback from the students was taken by questionnaire graded on likert's scale.

Results: The difference between the mean value of the marks obtained by the pre-test compared with post-test using the MCQ assessment tools was found to be statistically significant (p value being <0.05). One hundred and eighty eight students out of the two hundred and fifty answered the questionnaire (97.6%). The dependability of the scale was 0.50 (Cronbach's alpha -0.5). 98.8% students agreed that ECE as an integrated teaching helped in the retention and acquisition of skill /communication of the basic science knowledge to health and disease. Vertical integration was strongly agreed upon as the best method of teaching and learning by 97.6 % on likert scale.

Conclusion: Thus, ECE through vertical integration showed efficient new teaching learning method which had positive influence in retaining knowledge and simultaneous gaining of skills. This method will be very useful in its practical implementation during online classes for ECE module in the threat of COVID-19 situation as well.

Abstract-52

A Cross-sectional Study to Assess the Different Parameters in Patients with Newly Diagnosed Type 2 Diabetes Mellitus

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Introduction: Over the past three decades, the number of people with diabetes mellitus has more than doubled globally, making it one of the most important public health challenges to all nations.

Aims: The present study was undertaken to compare the levels of HbA1c, serum calcium, serum magnesium, serum phosphate, serum uric acid and microalbuminuria in patients with newly diagnosed type 2 diabetes mellitus with normal healthy individuals.

Material and Methods: This is a cross-sectional study and was undertaken in the Department of Biochemistry, SKIMS-Medical College & Hospital, Bemina, Srinagar. Total 300 subjects included in this study were divided into 2 groups. Group I: included 150 normal healthy individuals, who were in the age group 30-80 years, of either sex. Group II: included 150 newly diagnosed patients of type 2 diabetes mellitus in the same age group.

Results: Mean serum levels of FBS, HbA1c, calcium, magnesium, phosphate, uric acid were 89.71±9.22, 4.68±0.47, 9.61±0.84, 2.23±0.41, 3.45±0.46, 4.21±1.04 in controls (group-I) and 145.57±76.61, 8.94±2.38, 8.09±0.18, 1.92±0.27, 2.82±0.68, 7.01±0.27 in cases (group-II) respectively (<0.001). Microalbuminuria showed significant mean difference between cases and controls 35.01±41.30 and 15.35±2.60 (<0.001).

Conclusion: There is decrease in serum calcium, magnesium and phosphate levels, all these plays an important role in the regulation of glucose level in the blood. Hence, oral supplementation of all these ions other than diet is recommended. Increased serum uric acid and microalbuminuria was seen with reduced glucose tolerance hence early estimation of both the parameters should be done while monitoring case of type 2 diabetes and thus will help to decrease the incidence of renal complications.

Abstract-53

A Study of Serum Visfatin Levels, Atherogenic Index and Body Fat Distribution In Young Obese Adults

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Aim: The aim of this study was to evaluate serum visfatin levels in young obese adults compared with non-obese controls. The association between serum visfatin levels and atherogenic index, lipid parameters and anthropometric indices were also assessed.

Materials and method: A cross-sectional study involving 60 obese adults (19-35 yrs) and 30 age and sex matched non-obese controls. Obesity is defined by Asian cut-off of BMI 25 kg/m^2. Serum visfatin, anthropometric indices (Body mass index (BMI), waist circumference (WC), waist–hip ratio (WHR), lipid parameters and atherogenic index (log TG/ HDL-C) were assessed in obese group and compared with the control group.

Results: Serum Visfatin levels was significantly higher than the control group (p<01). The obese study group had significantly higher BMI, WC, WHR, TG, LDL - C with p-value<0.05. The atherogenic index was also significantly higher in cases than controls (p<0.016). Among the obese group, serum visfatin levels was positively correlated with BMI (r : 0.927 p:0.00) , WC (r : 0.725 p:0.00), WHR (r : 0.659 P:0.00), TG (r : 0.32 P:0.04), LDL-C(r : 0.911 p:0.00) and atherogenic index (r : 0.599 P:0.00). There was also positive correlation between BMI and atherogenic index (r : 0.568 p:0.01). Serum visfatin levels among the obese study group showed inverse correlation with HDL-C (r : -0.568 p:0.00).

Conclusion: These observational data implies that this adipokine, visfatin is more pronounced in the visceral adipocytes. The body fat distribution (subcutaneous or visceral) assessed by waist-hip ratio in this study proves to be an important marker for assessing the metabolic risks of an obese individual. The higher atherogenic index in obese subjects reveals the impact of visceral fat in the initiation of atherosclerosis even in young adults.

Abstract-54

Analysis of PROGIN Gene Single Nucleotide Polymorphism in Patients with Uterine Fibroid

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Introduction: Uterine leiomyoma commonly called as uterine fibroids are the commonest smooth muscle tumors that originate from the uterine muscular tissue. Several factors are involved in the pathogenesis like the reproductive hormones-estrogen and progesterone, age, family history, parity, race etc. The prevalence rate is 20-50% in women in the reproductive age group.

Aims: To analyze the biochemical parameters, vitamin D, oxidative stress marker, Malondialdehyde (MDA) and genetic analysis of PROGIN gene for Single Nucleotide Polymorphism (SNP) in uterine fibroid cases and to compare the same with healthy study subjects.

Materials and methods: 103 uterine fibroid cases and 85 age matched controls were studied for their biochemical parameters including lipid profile, liver function tests, vitamin D, serum calcium, phosphorus, complete blood count, and plasma MDA and DNA analysis for SNP of PROGIN gene.

Results: Patients with uterine fibroids had earlier age of menarche and first child birth when compared to normal subjects. They were anaemic with low hemoglobin Hb (gm %) 8.93±1.86 against controls 11.3 ± 0.59 and their HDL (mg/dl) was low with mean value 41.8±5.6 compared to control (49.4±3.8). In liver function tests, alkaline phosphatase (IU/L) was significantly elevated 156.7±64.22 IU/L in comparison with controls with mean value of 83.2±15.11 IU/L. Vitamin D and calcium levels were significantly showed down surge in the cases than the controls. Uterine fibroid patients have increased oxidative stress level than their counterparts. Serum uterine hormones estrogen and testosterone were significantly elevated in UF whereas no difference was found in serum progesterone levels.

Conclusion: Uterine fibroids are more common in the reproductive age group especially in women between 30-50 years of age. Most of the patients were anemic, hypocalcaemic with significant low vitamin D level and increased oxidative stress when compared to the controls. PROGIN gene polymorphism was not associated with the incidence of UF among the population studied.

Abstract-55

Study of Biochemical Parameters and Chest CT Score for Diagnosis and Prognosis of COVID-19 Pneumonia Patients

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Introduction: COVID-19 pneumonia is a recently discovered, rapidly spreading acute respiratory syndrome. Chest CT has a 97% sensitivity for the diagnosis of COVID-19 pneumonia after a mean interval of 5 days. The typical chest CT findings in COVID-19 pneumonia are bilateral, peripheral, and basal predominant GGOs with or without consolidation and Broncho vascular thickening. The chest CT severity score of lung inflammation and clinical parameter analysis can assess COVID-19 disease and its severity.

Aims: Authors evaluated correlation of biochemical parameters with Chest CT Score for diagnosis and prognosis of COVID-19 pneumonia patients.

Materials and Methods: A total of 350 Patients diagnosed with COVID-19 pneumonia were included in the present study. We collected clinical and laboratory data for analysis, derived from an electronic medical record system, from June 2020 to July 2021 of patients who were diagnosed with COVID-19 infection by RT – PCR as well as chest HRCT scan. All the patients D-Dimer, LDH, Procalcitonin and ferritin levels were also collected. The statistical analysis was performed by using SPSS 21.0.

Results: A significantly elevated levels of D-Dimer (1346±124.60), LDH (768±58.74), Procalcitonin (9.89± 0.97) and Ferritin (567±47.19) observed in all the subjects. The D-Dimer, LDH, Procalcitonin and ferritin was found to be positively correlated with CT severity score ($p<0.0001^{**}$).

Conclusion: This study concluded that chest CT severity score can aid in predicting COVID-19 disease outcome, when CT Score is correlated with laboratory investigations useful for diagnosis as well as prognosis of COVID-19 pneumonia.

Abstract-56

Study of the Association of the Cardiac Risk Indices and High Sensitive C-Reactive Protein (hs-CRP) in Type 2 Diabetes Patients

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Introduction: Diabetes Mellitus is a metabolic disorder with hyperglycemia. Dyslipidemia associated with DM patient and contributing to atherovascular events and increases the likelihood of CVD in future. Measurement of inflammatory marker like hs-CRP will improve the prediction of the risk of these events.

Aim: This study it is aimed to assess the Cardiac risk indices and determine their association with hs-CRP in diabetic patients.

Material and Method: This study included 106 type 2 diabetic patients. The anthropometric parameters (BMI, WHR) and blood parameters like fasting glucose, HbA1c, lipid profile (Total cholesterol, TGL, HDL, LDL) and hsCRP, were measured. Cardiac risk indices calculated from lipid profile.

Results: High Cardiac risk indices were observed in diabetic subjects. The Cardiac risk indices were shows significant positive correlation with BMI, fasting sugar, HbA1c, total cholesterol, TGL and LDL. hsCRP showed significant positive correlation with cardiac risk indices in type 2 dm patients.

Conclusions: The increased values of cardiac risk indices in diabetic patients shows increasing the susceptibility of CVD in these patients in future. The correlation of indices values with hs CRP (inflammatory marker) shows the direct association of inflammation with CVD risks in type 2 DM patients. Screening of these indices among diabetic patients will help the propensity of future development of CVD can be arrested by encouragement of healthy lifestyle.

Abstract-57

Evaluation of Virtual Learning Platform-MOODLE for Medical Teaching

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Introduction: The conventional teaching-learning methods used in medical education presently do not meet the expectations and needs of a medical student. There is need to explore innovative methods and newer Teaching-Learning (TL) tools specially in this challenging time during COVID-19 pandemic.

Aims and objectives: The study was planned to evaluate and compare the effectiveness of online teaching through MOODLE (virtual learning platform) with classroom teaching. It also aimed at analysing the perception of students regarding use of online teaching through MOODLE.

Materials and methods: It is a cross-sectional comparative study involving first year undergraduate medical students studying in medical college. The study sample consisted of 150 students randomly divided into two groups, group-A and group-B. A common topic was taught using conventional classroom teaching method to group-A and simultaneously to group-B online-via MOODLE. Afterwards, a different topic was taught online to group-A and same topic through classroom teaching to group-B. MCQ based assessment was conducted for both groups following each session and the scores were compared. The final assessment score of the participants served as the primary comparative factor in assessing performance differences between online and classroom teaching.

Results: No significant difference in student performance between online and classroom teaching with respect to assessment score were found. Evaluation of students' feedback demonstrated that, almost 85 % of the students were satisfied with use of MOODLE as an online teaching tool.

Conclusion: Both online and classroom teaching were found equally effective for student learning and a virtual learning platform like MOODLE can offer an alternative viable solution for medical teaching.

Abstract-58

Self-Directed Learning (SDL) is an Effective Online Learning Tool: Perceptions of Medical Students during the COVID-19 Pandemic

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Introduction: The outbreak of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS CoV-2)), also known as 2019 novel Coronavirus (COVID-19), was reported in China around late 2019 and was subsequently declared as a pandemic on March 11, 2020. The first COVID-19 positive case was detected in India on January 30, 2020. The nationwide lockdown which started on March 24, 2020 with restrictions to control the spread of disease and 'flatten the curve' have impacted all aspects of life inevitably, medical education has also been affected, with the halting of face-to-face lectures, clinical discussion and practical examinations. As a result of these efforts, there has been a change in direction in teaching strategies toward online classes through platforms such as Zoom forming the primary source of medical education and enabling students to continue to learn remotely. National Medical Commission came with Module on Online learning and assessment 2020. Objectives to assess the positive (benefits) and negative (barriers) perceptions of medical students on the role of online teaching during the COVID-19 pandemic compared with offline class.

Materials and method: For Cross-sectional study, 250 medical students were enrolled. Students were divided into small groups, assigned to one teacher for better interaction. Teaching sessions were arranged in such a way that specific learning objective of the topic shared one day before scheduled online teaching. Many chapters were given as self-directed learning topics to create interest in topic. During classes clinical conditions, case studies highlighted, end of the classes problem-based case studies shared, and discussion focused on most confusing area in next session. Liberal use of videos showed. Practical session recorded steps of experiments shown by using Zoom platforms. Question bank prepared, validated, and shared. At the end of the class, formative assessment conducted and evaluated.

Results: The greatest perceived benefits of online teaching platforms included their flexibility. More than 80% showed SDL benefited them in enhanced learning followed by go formative assessment with 75%, whereas the commonly perceived barriers to using online teaching platforms included less face-to-face interaction, continues sitting (48%) family distraction (25%) and poor internet connection (12%).

Conclusion: SDL as online teaching had very positive impact on continuation of medical education during these unprecedented times. Use of SDL as online teaching platforms allowed students to go beyond topic explore and retain information in their own time as self-reflection. This also allowed students to constructively discuss SDL material with peers. Component of SDL include clarification of learning objectives, periodic tutor driven discussions with students, the formation of small groups, found very effective in terms of achieving learning outcomes. Beyond COVID-19, we recommended SDL as an effective mode of online learning /teaching methods within traditional medical education

Abstract-59

Student Centric Real-time Reflection Augmented by Gamification as an Effective Teaching-Learning-Assessment Tool

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Inotoduction: In order to improve student's learning skill, digital instructional approaches such as gamification are used in routine practice.

Aim: To assess the feasibility of Kahoot app, when utilized in addition to traditional classroom education as a real-time reflection for students as TLA tool.

Material and Method: This prospective study conducted at Department of Biochemistry, MNR Medical College & Hospital during the year January to February 2020. The students included were of phase I MBBS students, dental students and physiotherapy students. The students were taught with four different topics and after completion groups were switched. Before switching groups, they were given with the MCQs of two topics. The MCQ test was of total 50 marks. The satisfaction survey in Google form was collected.

Results: Among 344 students, 64.2% were MBBS students, 23% were dental and 12.8% were physiotherapy 1st year students. There was significant higher mean test scores in group A (Kahoot based MCQ) compared to group B (traditional paper based MCQ) and group D (Kahoot based MCQ) from group C (traditional paper based MCQ). Students strongly agreed that Kahoot help to retain the knowledge (60.5%), simplifies complex subject (41.9%), learning was fun (74.4%), enhance the understanding of subjects (53.5%), and 90.7% responded they want the Kahoot based learning frequently.

Conclusion: The study showed the utility of game based learning apps like Kahoot use in competency based medical education as real-time TLA assessment tool. Improvement in the learning ability and simplifying the complex subjects was the perception of the students.

Abstract-60

Prostate Specific Antigen in Women with PCOS and its Correlation with Total Testosterone

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Introduction: Polycystic Ovarian Syndrome (PCOS) manifested by amenorrhea, hirsutism, and obesity associated with enlarged ovaries. Its frequency in world is 5-10% and in India it is 9.13%. Prostate Specific Antigen (PSA) synthesized and secreted by prostate gland and several non-prostatic tissues and body fluids of males as well as females.

Aim: a) To estimate serum PSA and LH, FSH, LH/FSH ratio, total testosterone, and insulin in patients diagnosed with PCOS and controls. b) To study the association of serum PSA with total testosterone in patients with PCOS and controls.

Materials and Methods: A total of 60 female PCOS cases (in the age group of 20 to 35 years) and 60 female control (healthy subjects) were selected. Serum PSA along with LH, FSH, LH/FSH ratio, total testosterone, and insulin was estimated using Chemiluminenescence immune assay access 2 analyzer.

Results: Mean serum PSA in PCOS cases and controls (0.219±0.538 and 0.0165±0.029 ng/mL respectively) were found to be significantly different with p-value ($p<0.0001$) serum PSA was significantly increased in polycystic ovarian syndrome, and significantly linked to total testosterone.

Conclusion: Serum PSA was significantly increased in polycystic ovarian syndrome, and significantly linked to total testosterone, when compared to healthy individuals

Abstract-61

Technique for Tackling Problem Solving Skills in Medical Education

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Introduction: Problem solving skills are of utmost importance to medical students who in the future would depend on them for diagnosing a case. However, there are very few avenues to develop problem solving skills in the preclinical years. Generally, case scenarios are used by medical schools to develop these skills during Problem Based Learning (PBL) or Case Based Learning (CBL) sessions.

Aims: To build problem-solving skills by using analysis, reasoning and application. The experiment tests a novel digital mode to achieve these objectives.

Materials and Methods: A prospective cross-sectional study, conducted at MNR Medical College and Hospital, Sangareddy, Telangana, India for duration of four months (March to June 2021). MBBS students (n=150), in the first year of their curriculum, took part in the activity. Six case scenarios were designed using PowerPoint. Each case scenario was divided into case title, case history, clinical findings, investigations and treatment. The content and construct validity of the case scenarios was carried out by a clinician and changes were affected accordingly. The slides were placed in random order and presented to the students through online Microsoft teams platform. They were asked to sort the slides and give a diagnosis for each case. Using google forms a questionnaire was prepared and it was used to collect feedback from students.

Results: Total number of participants who could complete the activity within the stipulated time were 132. Majority of students (85%) scored more than 80% marks in the activity. It is important to note that all students who got the diagnosis right had full marks in arranging the slides. Response to feedback questionnaire is as follows: The activity was interesting (63.64%). The activity promoted active learning (65.15%). The activity made us to correlate the different aspects of case scenario and give a diagnosis (69.7%). Helped to build problem based skills and activate prior knowledge (71.21%). Improved clinical orientation to the curriculum (65.15%). Exposed to aspects of the disease not dealt with in the class room (40.91%). Require such techniques in future (68.18%). Though, most of the time they succeeded in bringing order to the presentation, their success in achieving 'percipience' was limited, which can be improved by indulgence in such innovative techniques.

Conclusion: This innovative learning technique for tackling case scenarios on a digital platform offers many possibilities for testing and building skills essential for clinical practice. The fact that the activity was much appreciated by students, boosts the faculty's resolve to plan many more such techniques that can be applied to every topic and specialty of medical education.

Abstract-62

Effectiveness of Team Based Learning as a Revision Tool for Reinforcing Concepts in Undergraduate Medical Students

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Introduction: With the constantly evolving medical education and implementation of the latest curriculum for MBBS students, the focus of teaching has shifted now towards objectively structured, competency-based active learning methods from traditional lectures. Educators prefer active teaching methods over passive didactic lectures because it allows the educator to engage more dynamically with the students. Team based learning (TBL) is a small group active learning method in which students are guided to apply conceptual knowledge through a recurring sequence of activities that involve individual work, teamwork, and immediate feedback. This helps the students in all aspects of their learning domains and helps in better retention and cognition.

Aims: The aim of the study was to study the efficacy of team-based learning as a revision tool in reinforcing concepts in Biochemistry in undergraduate medical students, when compared to regular tutorials following a series of traditional lectures.

Materials & Methods: A total of 150 consenting students of first year MBBS, in the Department of Biochemistry, JIPMER, Puducherry were included in the study and were divided into two groups of 75 each. Group 1 was exposed to a traditional tutorial session, whereas group 2 was exposed to TBL model. The exercise was repeated a week for another topic of similar level of difficulty in which, group 2 did traditional tutorials and group 1 did TBL. The performance of the two groups were assessed to see the efficacy of team based activity.

Results: An active learning method like TBL was an effective tool to increase the engagement of the students, especially the low achievers. It helped the students to recollect the contents better and increased their general performance and improved their learning outcome.

Conclusion: Active learning methods like TBL would be an effective strategy to increase the learners' engagement and would also help to inculcate the value of working in a team based environment which is very essential in their future career.

Abstract-63

Serum Ferritin, the Most Sensitive Marker to Predict Renal Dysfunction in Diabetic Subjects

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Inotroduction: Diabetic nephropathy (DN) is the major cause of end-stage renal disease (ESRD), delay in identification of nephropathy in T2DM and better management of diabetic nephropathy may cause development of ESRD.

Aims: The study intended to assess whether serum ferritin is an independent marker to predict early renal dysfunction in type 2 diabetic subjects.

Materials and Methods: This is a retrospective study with 81 type 2 diabetic subjects with and without nephropathy. These subjects were categorized into two groups, 46 subjects without nephropathy and remaining 35 subjects with nephropathy. The clinical and biochemical parameters such as blood glucose, urea, creatinine, iron, ferritin, transferrin, Total Iron Binding Capacity (TIBC), and haemoglobin were measured by standard methods. Statistical analysis was done by using Sigma Plot 13 (Systat software USA).

Results: Significant change in the level of serum ferritin was observed between the study groups. Elevated level of serum ferritin was found along with urea and creatinine in type 2 diabetic subjects with nephropathy and it shows the incidences of CKD in individuals with type 2 diabetes. A significant positive correlation of serum ferritin with creatinine was found in study subjects and it indicates that ferritin may play an important role to predict renal dysfunction in early stage.

Conclusion: The present study has found that serum ferritin has significant role to forecast renal dysfunction in type 2 diabetic subjects.

Abstract-64

Study of Fetuin-A Levels in Different Stages of Diabetic Nephropathy (DN)

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Introduction: Fetuin-A synthesized in liver, known as α-2 HS glycoprotein, act as a protective inhibitor of vascular calcification in CKD patients and ESRD, decreases in acute inflammation. This protein is associated with obesity, DM, liver diseases, inflammation and metabolic syndrome.

Objectives: To estimate and correlate Fetuin-A levels and renal parameters in diabetic subjects with and without diabetic nephropathy in all stages.

Materials and methods: The study was conducted at SNMC, Bagalkot, inclusion criteria, The subjects with diabetes age of 35-65 years. Exclusion criteria, Age < 35 years, thyroid disorder, CVD, pregnancy, malignancy.

Results: In this study serum Fetuin-A levels were significant with FBS, microalbuminuria. Fetuin-A levels in DN (mild, moderate, severe) compared to controls p (0.001, 0.00 and 0.012). There is strong correlation observed between microalbuminuria & Fetuin-A levels in cases with DN(r=0.95). The p-value of creatinine, FBS and microalbuminuria were significant whereas urea, uric acid are nonsignificant in DN stages compared to diabetes.

Conclusion: High levels of Fetuin-A helps in the prediction and diagnosis of diseases like Diabetes, Atherosclerosis etc. The results suggests higher levels of Fetuin-A is associated with DN. Fetuin-A may be used as a marker for microvascular complications in T2DM, especially the DN group.

Abstract-65

Teaching and Learning Biochemistry in the Pre-clerkship Phase during COVID-19 Pandemic at a Private University in Malaysia

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The COVID-19 pandemic imposed the implementation of global emergence, and education moved online. Exploring the newer modalities in teaching-learning of biochemistry in the pre-clerkship phase during the COVID-19 era was challenging. I am sharing our experiences on T-L sessions of biochemistry in the Pre-Clerkship Phase during COVID-19 Pandemic, how we adopted and adapted strategies. Setting the online sessions for biochemistry in the Preclerkship phase is not a transcriptional process but a translational one. Within a digital learning environment, the online organization of the resources became another facet involving the delivery of the content is clearly defined weekly sections, indicating what needs doing, by when, and which aspects. Delivering laboratory content of biochemistry for the pre-clerkship phase via online modalities was also quite challenging. Live and recorded practical sessions, small group discussions with case-based scenarios were used to facilitate understanding the integration of biochemistry into systems. The students demonstrated good acceptance of the online T-L biochemistry sessions through small group discussions. Case-based discussions enhanced the quality of the learning biochemistry and facilitated understanding of the topics. Feedback during mentor-mentee sessions, reflective portfolio submissions, and end of the module responses showed that students gained greater insight and promote self-learning. Online learning of biochemistry involving scenario-based learning using various online tools has developed active learning among pre-clerkship students leading to active participation and engagement. This has also worked well as the students discussed and clarified queries through an online discussion board, surpassing passively consuming a theoretical lecture. This type of online learning has helped students build a more robust understanding of the core content, improves knowledge retention, and exercises critical thinking and problem-solving skills.

Abstract-66

Impact of Socioeconomic Status on Oxidative DNA Damage in HIV Positive Patients

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Inotoduction: Few studies have demonstrated the effect of socioeconomic inequalities in the prognosis of chronic diseases such as AIDS, cancer, heart disease and kidney disease. Even with ART, HIV-positive population experience more chronic inflammation than HIV negative population. An increased inflammation can cause mutation in genes. These mutations can be the consequence of the accumulation of DNA damage in HIV positive patients.

Aims: In this study, authors aimed to explore the association of socioeconomic status with oxidative DNA damage marker 8-OH-2dG in HIV-positive patients and compared it with controls.

Materials and methods: After getting Informed consent, authors collected data and blood from recruited participants aged 18 years or older HIV-positive and HIV-negative controls with different socioeconomical status from ART center and outpatient department of Sir JJ Hospital in the India between January 1, 2014, and June 30, 2015. 8-OHdG was measured with the highly sensitive 8-OH.2dG check enzyme-linked immunosorbent assay (ELISA) kit (Stress Xpress ELA Kit). Socioeconomic status was measured according to the modified Kuppuswamy scale.

Result: In this case-control study we used total 600 subjects (450 HIV positive and 450 HIV negative). The cases and controls are further divided into three groups (Lower, Upper lower and middle) according to Socioeconomic status. In a linear regression analysis, lower Socioeconomic status was positively associated with the increased DNA damage (odds ratio: 3.052, 95% confidence interval: 2.595-3.509) P<0.001.

Conclusion: Lower socioeconomic status was positively associated with increased oxidative DNA damage in HIV positive patients.

Abstract-67

Laboratory Biomarker Variability in Diagnostic and Prognostic Outcome of Neuropsychiatric Disorders in ICU Admitted COVID-19 Patients

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Introduction: There is growing evidence of neuropsychiatric presentations in patients of COVID-19, but literature is scarce on laboratory biomarkers for its objectivity as diagnostic or prognostic purpose and how they are impacted in clinical course of systemic outcome in COVID-19 infection.

Materials and methods: Authors screened 430 ICU patients admitted to our tertiary care hospitals, out of whom 67 were diagnosed positively with definitive neuropsychiatric sequalae and receive psychotropic interventions during their hospital stay. Authors compared their D-dimer levels, C-reactive proteins, serum ferritin levels, serum procalcitonin and Vitamin D levels and further analyzed CORADS severity score with psychiatric severity and outcome.

Results: Among the clinical laboratory biomarkers only D-dimer levels were found to be significantly impacting the variability among various psychiatric diagnosis (F=2.479, p <0.033). while serum ferritin levels were just marginally close to significance (F= 2.221, p=0.053). We observed that serum CRP, vitamin D levels and serum procalcitonin levels were not significantly variable between seven domains of psychiatric disorders. These laboratory biomarkers were considered to be useful not only for early suspicion of neuropsychiatric disorders and identifying high risk cohorts but also rationalizing therapies, predicting outcome and framing ICU admissions.

Conclusions: The present study has found significant association of elevated levels of D-dimer variability but not the other laboratory biomarkers among various neuropsychiatric comorbid sequalae in ICU admitted COVID-19 patients. This particular observation might have potential for serum D-dimer levels to be possibly used as an early biomarker to screen or suspect for comorbid neuropsychiatric presentations and their prognosis.

Abstract-68

Distance Learning- Bane or Boon for Medical Students? A Cross-sectional Survey among Medical Students

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Introduction: Teaching and learning is an evolutionary process, it never ends. The emerging of information and communication technology had made teaching and learning activity a very dynamic process. It has evolved from classroom dependent stage to an online environment. Conventional chalk and talk method is being replaced by E-learning. With emergence of COVID-19 pandemic, medical schools started using distance teaching-learning platform to train their students.

Aim: This study was conducted to evaluate effectiveness of distance learning among medical students.

Materials and Materials: A cross-sectional survey was conducted among medical students using a structured and validated questionnaire designed by subject experts incorporating statements related to advantages and challenges associated with distance learning and suggestions to address the same. Questionnaire was administered through google forms and responses collected. Descriptive statistics was used to analyses responses.

Results: A total 83% of students expressed face to face interaction was missing in distance learning, 90% opined there was no disciplined way of learning, 76% lacked motivation, for 84% learning was passive, 78% felt monitoring by faculty was missing, 94% expressed practical sessions were ineffective, 88% missed critical thinking exercises of class room sessions, 98% missed social interaction with their friends, 90% missed competitiveness, 73% perceived that overall learning experience was poor with distance learning, 76% had issues with connectivity, 82% missed real time feedback form staff, 73% experienced psychological disturbance, 68% suffered from headache, visual disturbance, 78% opined there was a feeling of isolation. However, 90% enjoyed learning at their own pace, 95% opined that E-assessments provided immediate feedback and 84%

expressed there was flexibility in distance learning. 90% opined to the use of blended learning format with class room learning for practical sessions and distance learning for theoretical part.

Conclusion: Effectives of distance learning varied among students depending on their perception. Most of the students missed collaborative learning environment of classroom and hands-on practical sessions whereas they enjoyed the flexibility during distance learning. Blended learning approach was suggested by students to compliment class room learning and distance learning.

Abstract-69

Analysis of Design of Free Online Animations in Biochemistry based on Multimedia Learning Principles

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Introduction: MBBS first professional students are expected to learn concepts in Biochemistry (under Biochemistry subject) that will help them in diagnosis and management of diseases. Medical students have been shown to access free online animations to aid learning. Richard E Mayer proposed multimedia learning principles that could be used to design animations to maximise learning. To the best of our knowledge, there are no studies that have evaluated the design of online freely available animations based on Mayer's Multimedia learning principles that foster generative processing.

Aim and Objectives: In this study, our objective was to evaluate the online animations in Biochemistry based on criteria of Multimedia Learning Principles (that foster generative processing) proposed by Mayer.

Materials and Methods: A total of 102 animations belonging to various topics in Biochemistry relevant to MBBS first year students, as per the curriculum suggested by NMC were shortlisted through online search using Google and YouTube. These animations were then scored based on their compliance with Mayer's Principles for Multimedia learning-principles that foster generative processing.

Results: Personalisation principle was violated in 96% of animations. Image principle was complied with in 100% of the animations.

Conclusions: Majority of online free animations in Biochemistry that we assessed do not fully follow the design principles of Multimedia learning. Creators of online animations should use the Mayer's Multimedia learning principles that encourage generative processing, while designing the animations in order to maximise their potential use for learning by MBBS students.

Abstract-70

Enrichment Analysis Revealed "Increased Cytosolic Calcium Levels and Associated Calcium-mediated Necroptosis" by the Ala8,13,18-Magainin II Amide (AMA)- In-vitro action of Modified Cationic Antimicrobial Peptide (CAMP) on Placental Cytotrophoblasts Cell Line BeWo

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Introduction: The unique mode of action and functional selectivity by specific Cationic Antimicrobial Peptides (CAMPs) make them possible candidates for a new class of antibiotics. Magainin is one such cationic peptide isolated from African clawed frog, Xenopus

laevis. These peptides target cytotrophoblasts (CTBs) transitionally externalizing negative charge during syncytiallization. Authors reported previously that AMA affects cellular homeostasis in primary human placental villous cytotrophoblasts.

Materials and Methods: In the present study, after 24 hr AMA exposure in BeWo cells whole-genome expression microarray was performed using RNA samples passing quality check and data were analyzed using GeneSpring v14.9.1 software followed by real time calcium measurement in BeWo cells.

Results: Our results demonstrated several genes involved in the necroptosis pathway displaying differential expression in BeWo cells exposed to AMA. Pathway analysis revealed Toll-like receptor 4 (TLR4) induced TICAM1-specific signalling pathway, which plays an essential role in innate immunity and induction of necroptosis and Granzyme A signalling, known to activate a novel programmed cell death pathway. The present study also measured calcium levels in BeWo cells by Fluorescence Live-Cell Imaging Microscopy. Calcium imaging revealed a significant rise in cytosolic calcium levels in BeWo cells after administration of AMA, indicating mobilization of calcium from intracellular stores to initiate the apoptotic and necroptosis pathways as revealed by enrichment analysis.

Conclusion: Our results infer that exposure of AMA adversely affects cellular processes in BeWo cells by increasing intracellular calcium levels followed by altered expression of genes associated with apoptosis and necrotic inflammation resulting in abnormal cellular homeostasis.

Abstract-71

Association of Vitamin D Status with Cardiovascular Autonomic Function, Oxidative Stress and Inflammatory Markers in Newly Diagnosed Type 2 Diabetes Mellitus

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Introduction: Vitamin D is linked to the prevalence and severity of cardiac autonomic neuropathy in Type 2 diabetes mellitus(T2DM). Vitamin D deficiency is reported to be associated with inflammatory markers and oxidative stress in T2DM. However, the associations in newly diagnosed T2DM have not been established.

Aim: To study the relationship between vitamin D status and cardiovascular autonomic function, oxidative stress and inflammatory markers in newly diagnosed T2DM.

Materials and Methods: Participants (n=47) of 18 – 45 years were recruited based on American Diabetes Association (ADA) criteria. Anthropometric measurements, basal heart rate, systolic blood pressure, diastolic blood pressure, Baroreflex Sensitivity (BRS), Heart Rate Variability (HRV), conventional autonomic function tests, fasting plasma glucose, fasting insulin, vitamin D, adiponectin, Fibroblast Growth Factor-21 (FGF-21), Interleukin-6 (IL-6), Tumour Necrosis Factor-α (TNF- α), high sensitivity C-reactive protein (hs-CRP), Total Antioxidant Capacity (TAC), Malondialdehyde (MDA) were measured.

Results: Vitamin D level was positively associated with BRS and negatively correlated with basal HR. There was a significant negative association of vitamin D with LFnu and LF:HF ratio; and a positive correlation with HFnu and TP. Vitamin D level was negatively correlated with IL-6 and MDA.

Conclusion: A decrease in vitamin D levels in all subjects and its strong association with markers of sympathovagal imbalance, inflammation and oxidative stress suggested the increase in cardiovascular risk in them. Vitamin D deficiency is a treatable condition which if treated earlier, can show improvement in sympathovagal imbalance, inflammatory and oxidative stress states, and decrease in cardiovascular risk in newly diagnosed T2DM subjects.

Abstract-72

Serum Brain-Derived Neurotrophic Factor Levels and Central Obesity: A Potential Biomarker for Assessing the Risk of Cardiovascular Health

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Introduction: Obesity, a multifactorial inflammatory disorder with altered metabolism resulting in excess fat deposition. Recent studies have reported that BDNF levels are altered in obese individuals with increasing the risk of cardiovascular disease.

Aims: The current study aimed to assess the baroreflex sensitivity and its possible association with various parameters (serum BDNF levels, lipid profile, bio-impedance analysis, and skin fold thickness) altered in obesity.

Materials and methods: A cross-sectional comparative study was conducted on 85 obese (BMI: 21.19±1.48 kg/m2) and 85 non-obese (BMI: 27.13±1.64 kg/m2) age-gender-matched participants. The body composition was analysed by Bio-impedance, and BRS was recorded using Finometer v1.22a. Central obesity was assessed by measuring skinfold thickness at the lateral abdomen and supra illiac areas. Biochemical parameters such as serum BDNF levels and lipid profile were measured. Group comparisons were done by independent student's t-test, whereas the association between the parameters was done by Spearman's correlation using SPSS 20v. A p-value<0.05 was considered statistically significant.

Results: BDNF, HDL and BRS were significantly lower (p<0.0001) in obese group. The parameters assessed for central obesity and lipid profile were significantly higher (p<0.0001) in obese group. BRS had a positive correlation with BDNF (r=0.3; p<0.000) whereas a negative correlation with parameters assessed for central obesity and lipid profile.

Conclusion: Lower BDNF with higher fat content indicate the possible risk for atherosclerosis. Also, lower BRS has revealed that obese individuals are at more risk for cardiovascular diseases. Hence, the study suggests that multimodal approach is crucial to prevent the cardiovascular risk at the early stages of obesity.

Abstract-73

Transgender Health; Do Our Doctors know Enough

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Introduction: Transgender health is a relatively new area of medicine that hasn't been explored until the past few decades. A section of doctors in India are mostly unaware of the subject and that affects the availability of medical services/health care to transgender population.

Aims: To assess the awareness regarding transgender health and related issues among medical professionals

Materials & Methods: 126 volunteers responded to a questionnaire containing 40 questions, to assess the awareness regarding social and medical issues related to Transgender health. Afterwards a medical conference on transgender health was conducted and 58 of the volunteers participated in the same. A post assessment using similar questionnaire was done to assess the improvement in knowledge regarding transgender health. The data was analysed as percentage score.

Results: For 126 volunteers, Shapiro –Wilk test showed normal distribution. The mean percentage score was 51.58. Among the 58 who attended the conference mean percentage score pre-conference was 51.33 and post-conference was 61.67 showing significant increase in awareness.

Conclusion: The study shows that there is a huge deficit in awareness on transgender health among medical professionals. But timely interventions such as medical conferences awareness seminars and sensitization programmes can improve the level of awareness with regards to knowledge and perception significantly. There is need for large scale awareness programs among medical professionals to improve general understanding of transgender health issues.

Abstract-74

Assessment of Alertness and Decision-Making Ability Using Reaction Time Analyser in Young Adults with Parental History of Hypertension

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Introduction: High sympathetic activity causes atherosclerotic changes and neuropathy, high arousal & anxiety levels. This in long run cause early mental exhaustion. Genetic predisposition with parental hypertension and professional stressor, unhealthy lifestyle can hasten the disease process. Reaction time analyzer assess the speed of response to a given stimuli. It is reliable, non-invasive modality to assess alertness, arousal level and quickness decision-making. The medical students have to be alert and quick in decision making in both academics & in hospital setup while dealing with the emergency situations. These genetically susceptible individuals need to be evaluated at the earliest and help them to adapt to healthy life style.

Aims: Assessment of alertness and decision-making ability using reaction time analyzer in young adults with parental history of hypertension.

Materials and methods:120 students were included in this cross-sectional study,60 students with parental history of hypertension in study group and 60 in control group were with no parental history of hypertension. Institutional ethical clearance and students informed obtained. The students with any chronic illnesses and drug intake for same, any cardiovascular, neurological, endocrinal, psychiatric illness and students with history of smoking and alcohol were excluded from study. Audio visual reaction time was assessed using portable research reaction timer analyzer.

Result: Both ART and VRT were prolonged in study group and the ART delay was statistically significant.

Conclusion: Genetic predisposition with sympathetic dominance could be the cause for high arousal levels and mental exhaustion over long run. Though the alertness and decision making in the form of response time to a stimulus is shorter in the study group, moderate arousal is good for better performance and decision making. The generalization of study finding need large sample population.

Abstract-75

Association of Cognitive Functions with Arterial Stiffness in Patients with Moderate to Severe Psoriasis

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Introduction: The neuroinflammation in psoriasis leads to various co-morbidities including cognitive deficits. The elevated cytokines in psoriasis have potential to cause endothelial dysfunction that promotes atherosclerosis. The Stiffened artery can cause arterial walls to rupture resulting in the development of microinfarcts in the brain.

Aim: 1. To compare the cognitive functions between patients with moderate to severe Psoriasis and healthy volunteers. 2.To compare arterial stiffness between two groups using brachial pulse wave velocity. 3. To correlate cognitive functions with arterial stiffness in patients with Psoriasis.

Materials and Methods: This was a cross-sectional study with two groups (i.e.) patients with moderate to severe psoriasis and healthy controls with 40 in each group. Cognitive assessment was done by recording P300 ERP and Montreal Cognitive assessment (MoCA). Arterial stiffness was assessed by measuring pulse wave velocity, augmentation index and Ankle brachial pulse wave index. Data were analyzed using SPSS version 20.0. The p-value of < 0.05 was considered to be statistically significant.

Results: The latency of P300 was 360±36.4 ms in psoriasis patients and 300.8± 20.6 ms in controls ($p< 0.000$). The mean brachial pulse wave velocity was 17.4±6.9 m/s and 14.2±3.6 m/s in patients with psoriasis and control group respectively ($p<0.05$). On correlation, we found a positive correlation ($r=0.56$, $p<0.05$) between P300 latency and brachial pulse wave velocity in psoriasis group.

Conclusion: Establishing correlation between cognitive functions and arterial stiffness would pave way for future therapeutic research in preventing arterial stiffness and improving quality of life.

Abstract-76

Correlation of Emotional Intelligence with Perceived Stress and Sleep Quality among Female Resident Doctors in Bangalore

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Introduction: Emotional Intelligence (EI) is the ability to perceive, assess, and manage emotions of one's self, and others. Stress in today's world is inevitable. Studies have shown that professionals are into more job stress especially female resident doctors due to continuous duties and lack of proper sleep resulting in physiological disturbances, emotional unhappiness and strained relationship with others. A good emotional intelligence is essential for productive work efficiency and to maintain healthy doctor – patient relationship. The current study is done to correlate emotional intelligence with perceived stress and sleep quality among female resident doctors.

Aim: In this study we aimed to correlate emotional intelligence with perceived stress and sleep quality among residents assigned with 24 hours continuous duty twice a week.

Materials & methods: Study was done on 60 unmarried female resident doctors in age group of 25-30 years from Victoria hospital, BMCRI. Subjects in premenstrual/menstrual phase, known neurological/emotional disturbances, troubled childhood/broken family were excluded. After ethical clearance and consent, emotional intelligence, stress and sleep quality was assessed using Schutte Self-report Emotional Intelligence Test (SSEIT), Perceived Stress Scale (PSS) and the Pittsburgh Sleep Quality (PQLI) respectively. Pearson's Correlation was used to correlate emotional intelligence with perceived stress and sleep quality for statistical analysis.

Results: Emotional intelligence was negatively correlated with perceived stress (r=-0.4, p=0.003) and sleep score - PSQI (r=-0.3, p=0.003).

Conclusion: With decreased emotional intelligence there is increase in perceived stress and poor sleep quality.

Abstract-77

Google Form- An Assessment Tool during Online Classes for Self-Directed Learning

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Introduction: Undergraduate medical education regulations in 2019 have laid down emphasis on self-directed learning. Self-directed learning tools are easy to adopt by a student, but its assessment and monitoring by teachers becomes challenging.

Aim: The objective of the study was to know the efficacy of online google form quiz in assessing self-directed learning.

Materials and Methods: During the online small group tutorials for I MBBS, consisting of 40 students,10 MCQs (multiple choice questions) were employed to students in google form before the discussion of the allotted topic for that day. After the end of the discussion, once again the same MCQs were posed to the same students but the questions were shuffled. The google form acted like pretest and posttest. The result of the test was immediately shown to the students as soon as they submitted the form. Online feedback from the students were collected after the end of the session regarding such a type of assessment in google form. The feedback was analyzed using statistics such as descriptive and proportions.

Results: The response rate was for 97.5%. A good proportion (77%) of students were in the opinion that online google form helped them in knowing where they stand in their studies for the assigned tutorial and 92% of them considered this as appropriate tool for online assessment.97% of the students told that such a type of assessment motivates them to attend online classes.

Conclusion: Easy to adopt and employ-Google form as an online assessment is an efficient tool of feedback for the students and could act like assessment of self- learning.

Abstract-78

Assessment of Heart Rate Variability in South Indian Pregnant Women with Anaemia

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Introduction: Anaemia is one of the most commonly encountered medical disorders during pregnancy. Anaemia in pregnancy affects both the mother and the fetus. Pregnancy is associated with various adaptive cardiovascular changes and autonomic dysfunction. Pregnant women with anaemia are prone to increased cardiovascular risks. Heart rate variability is a non invasive technique to evaluate the cardiovascular risks and assess the autonomic functions.

Aims: Authors have assessed the cardiovascular autonomic functions using the short-term heart rate variability analysis in South Indian pregnant woman with anemia.

Materials and methods: Forty pregnant women with anaemia were matched with forty normal pregnant women as controls. Anthropometric measurements were done. Lead II ECG was recorded with subject in left lateral position and spectral analysis of heart rate variability (HRV) was done.

Results: Though there was a decrease in the time domain indices namely SDNN, RMSSD, and PNN50 in both normal pregnant woman and pregnant woman with anemia, the decrease in time domain indices was significant only in pregnant woman with anaemia. Similarly, among frequency indices, though there was a decrease in Total power and increase in LF-HF ratio in both the groups, the decrease in total power and increase in LF-HF ratio was significant ($P<0.001$) in pregnant woman with anaemia.

Conclusion: Pregnancy is associated with an altered autonomic tone. This alteration in the autonomic tone is exaggerated in pregnant woman with anaemia., Hence, pregnant woman with anemia are prone for increased cardiovascular risks and autonomic dysfunctions.

Abstract-79

Evaluation of Online Classes Versus Traditional Classroom Teaching among First Year MBBS Students during COVID-19 Pandemic in GMC Jammu

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Introduction: The COVID-19 era has caused shifting of medical teaching into online podium. This has provided us an opportunity to recognize MBBS- students preferences of these online classes which otherwise was not a part of the traditional medical teaching. So, current study was conducted to assess and analyze the preference of first year MBBS students between online classes and traditional classroom teaching.

Aims and Objectives: To evaluate the predilection of first year MBBS students between online classes and traditional classroom teaching.

Materials & Methods: An institution based descriptive cross-sectional study was performed on 180 MBBS students of GMC Jammu after receiving Institutional ethics committee (IEC) clearance, who have attended online classes for minimum of 1 hour per day or 6 hour per week for 1 month duration using zoom or other video-based learning platform. A pre-designed feedback questionnaire-based study was conducted after obtaining written consent from the first year MBBS students. We designed 24 question items related to their preferences for theory & practical classes with multiple choice options.

Results: In our study, we spotted that 61.11% of MBBS students prefer traditional classroom teaching over online classes, 52.22% prefer traditional classroom teaching in comparison to online learning for theory classes and 60% of students prefer traditional classroom teaching than online learning for practical classes.

Conclusion: In present study, our findings suggest that first phase MBBS students prefer traditional teaching than online classes.

Abstract-80

Practicing Alternate Nostril Breathing for 6 weeks and its Effect on P300 and Visual Evoked Potential among Medical Students

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Introduction: Alternate nostril breathing (ANB) is an integral part of pranayama. Pranayama is a technique of controlled breathing. Cardiorespiratory parameters, evoked potentials and cognition are known to get altered immediately after practicing Alternate nostril breathing (ANB) . Though, number of studies were done to know the immediate effect of ANB, very few studies were done among medical students in south India to know its effect on practicing for 6 weeks. Hence, this study was chosen.

Aim: To record and compare VEP parameters and P300 before and after 6 weeks of ANB among medical college students.

Materials and methods: After getting institution ethical committee clearance, informed consent was obtained from both male and female volunteers, fulfilling the inclusion and exclusion criteria. P300 auditory event related potential and visual evoked potential were recorded before and after 6 weeks of practicing ANB in 100 undergraduate medical college students in the Department of Physiology.

Result: VEP parameters and P300 were tabulated as Mean±SD and analyzed using SPSS 23. Students paired t-test was used to compare the parameters before and after ANB. N2-P300 (µV), P100 (ms), N75(ms), N145(ms) and N74-P100 (µV) were found to be significantly different after ANB among the medical students. Students unpaired t-test was also done to compare among male and female students.

Conclusion: Students were advised to practice pranayama regularly to improve cognition, for faster nerve conduction and recruitment of nerve fibers as evidenced by change in P300 and VEP parameters.

Abstract-81

Assessment of Physical Activity between Genders among Undergraduate Medical Students

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Introduction: Modern lifestyle has gifted us with lifestyle disorders. Physical inactivity is one of the important attributing factors for non-communicable diseases and death worldwide. In the World Health Survey, the prevalence of physical inactivity in India was 9.3% in men and 15.2% in women. Physical activity is defined as any bodily movement produced by skeletal muscles that result in energy expenditure. Physically active medical students tend to recommend physical activity for patients or at risk individuals in their future practise.

Objectives: To assess prevalence of physical activity between genders among medical students.

Materials and methods: A descriptive cross-sectional study was conducted after obtaining the institutional ethical committee clearance in a medical college on 110 students aged 17-19 years. To assess physical activity, Global Physical Activity Questionnaire (GPAQ) a validated questionnaire developed by WHO was used. Information on physical activity participation in three settings (Activity at work, Travel to and from places, Recreational activities) was recorded.

Results: Out of 110 students who participated in this study, 53% of male students were with mean BMI of 24.55±4.44 and 47% of female students participated had mean BMI of 22.45±3.78. Physical activity was grouped a vigorous work, moderate work, travel, vigorous recreation and moderate recreation and total physical activity. Significant difference was noted between genders across vigorous recreational activity METS/week.

Conclusion: No gender difference between total physical activity among medical students was noted in this study.

Abstract-82

Cardiac Autonomic Function in First Degree Relatives of Diabetes, Prediabetes and Diabetes- A Cross-sectional Comparative Study

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Introduction: Diabetes and prediabetes are metabolic disorder of multifactorial etiology which is associated with increased risk for cardiovascular diseases. However, the point of autonomic function alteration is yet to be clearly understood.

Aims: In the present study, we intended to study the autonomic function across the glycemic spectrum with respect to their glycemic status and family history of diabetes.

Materials and Methods: In 63 type 2 diabetes individuals, 63 prediabetes, 63 first degree relatives of diabetes, and 63 non-first-degree relatives of diabetes, the autonomic function was assessed by recording short-term heart rate variability and cardiac autonomic function tests. The comparison of data was done using One- Way ANOVA followed by post-hoc analysis (LSD test) and -Wallis test followed by post-hoc (Mann- Whtiney U test) according to the data distribution.

Results: Resting HR is higher in first degree relatives of diabetes, prediabetes and diabetes as compared to control. Total power is reduced in first degree relatives of diabetes, prediabetes and diabetes as compared to control. Autonomic reactivity is affected in prediabetes and diabetes but not in FDRD.

Conclusion: In the present study, we observed significant autonomic derangements in the following order diabetes>prediabetes>first degree relatives of diabetes>non-first-degree relatives of diabetes.

Abstract-83

MBBS Students Knowledge and Skill of Blood Pressure Measurement

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Introduction: The National Medical Council has implemented a competency-based medical education curriculum and Blood Pressure (BP) measurement is one of the competencies in the first year of medical education. MBBS students as they proceed further in their medical education tends to skip the steps involved in accurate and precise BP measurement that is imperative in routine clinical examination to manage and diagnose cardiovascular diseases.

Aims: To evaluate the knowledge and skill of MBBS students in their third professional year for BP measurement by the manual auscultatory method.

Materials and methods: 67 MBBS students (42 males and 25 females) completed the present cross-sectional study. They were assessed by a competency or skill chart based on the recent guidelines for BP measurement by the American Heart Association and the American College of Cardiology. Examiner certified the various steps in the competency chart for BP measurement by the auscultatory method. Further, students were required to answer five multiple-choice questions (MCQs) related to BP measurement within the stipulated time of five minutes. Results were presented as the percentage of students who performed the steps and answered MCQs correctly.

Results: Most of the students performed unsatisfactorily both in the competency and in MCQs.

Conclusion: As MBBS students progress further in their professional medical education they tend to skip the necessary steps required for accurate and precise BP measurement. Hence, we propose that the BP measurement competency certification should be enforced at a regular interval throughout the MBBS curriculum.

Abstract-84

Effect of Honey Supplementation on Oxidative Stress and Liver and Pancreatic Histology in Diabetic Neuropathy Rats

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Introduction: Diabetic neuropathy (DN) is a common debilitating complication of type-2 diabetes. Persistent hyperglycemia and oxidative stress (OS) play major role in the pathogenesis of diabetic neuropathy. Honey is a natural substance with various medicinal properties. Till date, there are no reports to explain the scientific basis of honey as an adjunct therapy in the management of neuropathy in chronic diabetes.

Aim: In the present study authors aimed to study the effect of honey treatment on oxidative stress and histopathology of liver and pancreas in an experimental model of diabetic neuropathy. Also, we compared the effect of honey treatment with standard anti-diabetic treatment on these parameters.

Materials and Methods: Forty healthy male Wistar albino rats of 10-12 weeks age, weighing 200±30 g were obtained from JIPMER central animal house. After one week of habituation, rats were divided into control (n=8) and experimental (n=32) groups randomly. After developing diabetic neuropathy, the experimental group was further divided into four groups, one group with no treatment (n=8) and three treatment groups (n=8, each). The rats of treatment group were administered with either honey or insulin or honey and insulin for six weeks. At the baseline and after the intervention, blood OS parameters were estimated. After the intervention, rats were sacrificed and hepatic, renal and pancreatic tissues were collected for the estimation of OS parameters and tissue histology.

Results: When compared with DN with no treatment group, plasma Malondialdehyde (MDA) was significantly less and Total Antioxidant Status (TAS) was significantly more in all the treatment groups. In hepatic and renal tissue, when compared to DN with no treatment group, MDA was significantly low in DN+honey+insulin group, whereas only renal MDA was significantly low in DN+insulin group. There were distinct histopathological lesions noted in the liver tissue and destruction of pancreatic islets was seen in DN with no treatment group. The extent of lesions was less in honey and insulin treatment group.

Conclusion: Honey, given at a dose of 0.5 gm/kg body weight for six weeks was effective in reducing oxidative stress in rats having diabetic neuropathy.

Abstract-85

Comparison of Traditional Didactic Lectures with Interactive Lectures for 1st Year Medical Students in Department of Physiology

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Introduction: Didactic lectures are the usual mode of teaching theory topics in our institution. Such a system is teacher centered with minimal participation from the students. With growing popularity of learner centered approach, several questions have naturally surfaced regarding the appropriateness of lectures. The concept of interactive teaching is not new. The implementation of newer and more effective teaching learning method are necessary to make learning a student centered one.

Aim: This study looks into the effectiveness of didactic lectures with interactive sessions in 1st year medical students.

Materials and Methods: This study was carried out in Department of Physiology involving 1st year medical students after obtaining clearance from institutional Ethical Committee. 245 students were divided into 2 batches, each batch consisting of 123 students. Batch I students were taught with interactive lectures where as batch II was exposed to traditional didactic lecture Interactive module included the following: a) Total duration of lecture was reduced to 45 minutes and remaining 15 minutes was used for interaction. Interactive session was carried out at the end of every 15 minutes of lectures, making a total of 3 interactive sessions lasting for 5 minutes. b) Lectures were delivered using a combination of blackboard and power point presentation. c) Activities included: Individual recall, think pair and share, solving multiple choice question, linking with other subjects and solving a case scenario.

Results: Effectiveness of interactive lectures and traditional didactic lecture was evaluated by comparing the feedback forms obtained by students of both batches and by comparing the scores of MCQ test. 15% liked think-pair-share, 14% liked solving MCQ, 56% liked solving case scenarios, 10% liked individual recall, only 5% liked linking with other subjects. 92% students expressed that there was safe environment for learning. Batch I students scored 63.3% in MCQ test when compared to 42.8% of batch II students who were exposed to traditional didactic lecture.

Conclusion: This type of interactive teaching helped our students to understand the topic better, improved their critical thinking and their active participation.

Abstract-86

Substrate Utilisation and Myocardial Oxygen Demand in Stationary Cycling vs Treadmill Walking

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Introduction: The increasing prevalence of obesity and hypertension in India is burdening the country with non-communicable diseases that include cardiovascular disease. Exercise is a primary intervention to manage obesity and hypertension. Treadmill and stationary cycle are the most common form or modalities of indoor exercise adapted by individuals. The modality of exercise causing higher fat oxidation at a lesser myocardial workload should be preferred.

Aims: The objective of the study was to compare the Rate Pressure Product (RPP, a correlate of myocardial workload) and Respiratory Exchange Ratio (RER, lower value indicates a higher contribution of fat oxidation to total energy expenditure during exercise) in treadmill walk with stationary cycling.

Materials and Methods: The present crossover study involved twelve, overweight, hypertensive, and physically inactive adult males. The participants exercised for thirty minutes on the treadmill and stationary cycle with a target energy expenditure of 180 Kcal. Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP), and Heart Rate (HR) were recorded by an automated blood pressure monitor, and RPP in Arbitrary Unit (AU) was calculated as SBP×HR÷100. Respiratory gas exchange analysis determined the volume of oxygen consumed (VO2) and carbon dioxide produced (VCO2). RER was calculated as VCO2÷VO2. Student t-test was applied and $P \leq 0.05$ was considered significant.

Results: SBP, HR, RPP, and RER was significantly higher in cycling (160.4±4.5 mmHg, 131.9±7.1 beats per minute, 211.4±8.6 AU, and 0.88±0.04) than the treadmill walk (158.4±4.9 mmHg, 129.6±7.6 beats per minute, 205.3±10.9 AU, and 0.86±0.03).

Conclusion: Treadmill walk resulted in lesser myocardial workload and higher fat oxidation than cycling.

Abstract-87

Practice of Alert Antibiotics in Surgery Intensive Care Unit

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Introduction: Infections in the form of sepsis, pneumonia contribute to high morbidity and mortality in Surgical ICU (SICU) patients. One of the pillars of management of SICU patients is antimicrobial therapy. However, inappropriate and excessive usage of antimicrobials will result in microbial resistance to the agents.

Aim: The objective of this study was to describe the usage of alert antibiotics and its clinical and bacteriological outcome of the patients.

Materials and Methods: This is a prospective descriptive study that included all the patients admitted to the SICU who received alert antibiotics from March 2021 to May 2021. The patients were followed for ten days from admission. During the follow-up, information regarding the changes in antibiotics, new culture reports, clinical progression were collected. On the tenth day, the patient's clinical outcome was noted.

Results: A total of 100 patients admitted in the SICU who received alert antibiotics were studied, out of which 74 were male patients. The mean age was 49. A total of 79 patients had received empiric antibiotic therapy, and the most common antibiotic was ceftriaxone. The mean duration of SICU stay was 3.7 days. The most common organism cultured was the *Escherichia coli,* followed by *Klebsiella pneumoniae.* Complete clinical resolution within ten days occurred in 29 patients, and partial resolution occurred in 31 patients. Change in the antibiotic therapy was noted in 33 patients and the overall mortality rate was 24%.

Conclusion: Alert antibiotics, considered as reserve drugs indicate their greater importance in SICU. The usage of these antibiotics needs to be more structural such that the upcoming threat of antibiotic resistance can be managed. Hence, monitoring the appropriate use of antibiotics and their outcome is an essential step to be considered.

Abstract-88

Immune-evasion Conferring Mutations Associated with Cases of Breakthrough SARS-CoV-2 Infection among Walk-in Patients

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Introduction: India recently faced a devastating second outbreak of COVID-19 infection, in which a majority of the viral sequences were found to be of the B.1.617.2 lineage. While India and the world focused on vaccination, reports of vaccine evasion by the virus, termed "breakthrough cases", emerged worldwide.

Materials and Methods: We analysed whole genome sequences of 150 SARS-CoV-2 viral samples isolated at our laboratory. We retrospectively found 9 cases of breakthrough infection, five of whom were fully, and four partially vaccinated. We followed-up these patients and can report that the variant lineages associated with these cases were B.1.617, B.1, and A. The mutations seen in these sequences in the Spike and ORF regions would have produced amino acid changes known to improve viral replication, confer drug resistance, influence host-cell interaction, and lead to antigenic drift. Increased virulence culminating in vaccine evasion may be inferred from these mutations. India, recently faced a devastating second outbreak of COVID-19 infection, in which a majority of the viral sequences were found to be of the B.1.617.2 lineage. While India and the world focused on vaccination, reports of vaccine evasion by the virus, termed "breakthrough cases", emerged worldwide. We isolated mRNA from SARS-CoV-2 samples and outsourced them for whole genome sequencing.

Results: We noticed that nine individuals had been fully (two doses of vaccine) or partially (one dose) vaccinated at least 14 days before infection. When we examined the sequences from these individuals, we found amino acid changes in the spike and NSP proteins, which were predicted to confer increased virulence upon the virus. We report the presence of three strains in the breakthrough cases; A, B.1, and B.1.617 (Nextstrain Clade G). We found one mutation, NSP6 T77A, that was present in both A and B.1 strains in the breakthrough cases, but not in other A and B.1 strains isolated, from patients of the same city. Additionally, we found multiple changes in the non-structural NSP proteins, which enable faster viral replication.

Conclusion: It is clear from our case series that the strains A, B.1, and B.1.617 can attain increased virulence culminating in vaccine evasion.

Abstract-89

Unhealthy Food Consumption among School Going Adolescents: A Sequential Mixed Methods Study in Puducherry

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Introduction: Unhealthy food consumption in adolescents and young adults play a key role in the early development of Non-Communicable Diseases leading to substantial reduction in the quality of life and life expectancy. On the other hand, promotion of healthy eating habit in the early stages of life would be a cost-effective strategy in preventing life threatening diseases in the future.

Aim: This study was planned with the following aims: 1. To determine the reasons for unhealthy food consumption among school-going adolescents. 2. To identify and prioritize the action points to promote healthy eating habits among school-going adolescents.

Material and Methods: Study setting: Two schools in Puducherry. Study duration: Three months. For quantitative survey, a representative sample of 405 students were selected from a sampling frame of 600 students who frequently consumed junk foods from 9th to 12th standards using Simple Random Sampling. For qualitative component, we included principals, school teachers, parents and healthcare professionals purposively till the point of saturation. Sequential mixed methods design where Phase I consisted the quantitative survey to determine the reasons for unhealthy food consumption and Phase II consisted the qualitative components (Key Informants Interview and Ranking exercise) to identify and prioritize the action points to promote healthy diet. After obtaining relevant permissions from the school authorities, a pre-tested semi-structured questionnaire was used to collect data from the school students. In addition, 10 key informants interview and 100 ranking exercises were carried out by an investigator trained in qualitative research methods. Data was analyzed using Epi_Info software (version 7). Categorical variables were expressed as frequencies and percentages. Thematic Content Analysis was done for the interview transcripts using Atlas.ti software. Further, mean rank and Kendall's Concordance Coefficient (W) was calculated for the ranked data using SPSS software (version 24)

Results: Taste of the food (74.8%), unawareness (71.8%), peer influence (70%), increase in online food delivery services (67.8%) and easy readymade food preparation (52.3%) were the common self-reported reasons for unhealthy food consumption. Inspection and monitoring of food outlets, ban on junk food advertisements, maintaining kitchen gardens at home, nutrition related health education sessions in schools and trying new dishes with organic foods were the prioritized key action points to promote healthy diet.

Conclusion: The prioritized action points would help in the development of culturally sensitive and socially acceptable key messages for the future health promotion interventions.

Abstract-90

Role of Enhanced Mechanical Temporal Summation in Predicting Persistent Postoperative Pain after Inguinal Hernia Repair

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Introduction: Around the world nearly 20 million groin hernia repairs are conducted annually and 8 to 16% of these patients experience Persistent Postoperative Pain (PPOP) to a degree that affect their daily activities & increases economic burden to the society. If these patients could be identified prior to surgery targeted multimodal analgesia with antihyperalgesic drugs could be provided.

Aim: Hence we designed this study to evaluate whether the preoperative mechanical Temporal Summation (mTS) will predict PPOP after inguinal hernia repair.

Material and Methods: Eighty males patients of age 18-60 years posted for open inguinal hernia repair were included in this prospective study. Vonfrey filament (# 6.45) 180G was used to elicit mTS on volar aspect of the dominant forearm for all the patients preoperatively. First and last stimuli pain rating was assessed using numerical pain scale. mTS was presumed to be present if the pain score of last stimuli was higher than the first (mTS>0). At the end of surgery ultrasound guided transversus abdominis plane block was given using 20ml of 0.25% bupivacaine in the corresponding side. PPOP was evaluated at 2 months.

Results: Out of 80 patients, 2 patients from group I and 3 patients from group II could not be traced out at 8 weeks. (75 patients analysed). 20% showed mTs >0 and belonged to group I; 80% showed mTs=0 and belonged to group II. There was significant difference in duration of analgesia and magnitude of mTS between the groups. 5 out of 15 patients in group I and 1 out of 60 patients in group II showed incidence of PPOP at 2 months which was statistically significant.

Conclusion: Present study shows that 20% of patients have enhanced mTs which also have clinical potential for predicting PPOP at 2 months after inguinal hernia repair.

Abstract-91

Museum: A Teaching Aid in Medical Education

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Introduction: Medical museums are critical to academic medicine. Its collections engage sensory perceptions, personal feelings, responses and reactions to stimulate change in participants' personal learning, critical thinking and overall knowledge.

Aims: To evaluate the utility value of museum in medical education To promote medical students to use museum objects as resource materials.

Materials and methods: In this descriptive cross-sectional study involving 124 2nd and 3rd year MBBS students of VMCH & RI as well as 22 teaching faculties were interviewed using a self-administered pretested two sets (set 1-section A and B for student and set 2-section A and B for faculty) of paper-based questionnaire. In questionnaire set-1, section B satisfaction levels of students' visit to museum were categorized in 3 groups based on their indication on modified visual analogue scales ranging from 0 to 100: Dissatisfied (0-30), Satisfied (31-60), Highly satisfied (61-100). Same questionnaire and pictures of museum contents and models were shared with 145 2nd year MBBS students of another batch online due to COVID-19 pandemic.Collected data were analyzed and expressed in percentage.

Results: Study shows museum visit was informative for 48% students, informative as well as interesting for 31%. 57% were highly satisfied and 42% were satisfied with the session.Only few (1.6%) called it was a boring activity and 1.4% were not satisfied. 91% of participating faculty members expressed their view that concept of museum in medical curriculum should be preserved with proper update. 56% of online participant were not satisfied.

Conclusion: Museum items can be effective teaching tools provided they are developed, updated and utilised properly.

Abstract-92

A Snapshot of Cognizance of Informed Consent Document Components and Human Ethics Research Principles among Nursing Students in a Southern Teaching Tertiary Care Centre and Hospital

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Aim: To study the cognizance of informed consent document components and human ethics research principles among nursing students in a southern teaching tertiary care centre and hospital.

Materials and methods: The research protocol received the approval from the ISAC and IRB. The ICMR principles of biomedical health and research principles were followed while conducting the study. The written informed consent was obtained from the eligible voluntary study participants. The privacy and confidentiality of the study participants was strictly maintained. The eligible nursing students formed the study target population and they were asked to fill the pre-validated structured questionnaire covering various domains of Informed Consent Document (ICD) document including the human ethics research principles. A prior to the start of the study, a 'Operational Definition' of cognizance was clearly defined. The data was captured from the pre-validated structured questionnaire and was entered in the Microsoft office excel 2007. The final data was expressed in the form of frequency and percentage(s).

Results: This study revealed that, only less than 40% of study participants were able to answer the correct responses to the various domains of Informed Consent Document (ICD) including the human ethics research principles. However, it was also revealed that, attitude towards ICD and bioethics research principles among study target population was positive and more than 93% were with opinion to undergo periodic training in this arena either through workshops/academic symposia/CMEs/Conferences etc.

Conclusion: This study concluded that, there was a poor knowledge with positive attitude towards the informed consent document components and human ethics research principles among nursing students in a southern teaching tertiary care centre and hospital.

Abstract-93

Effect of Animated Power Point Slide Presentations in Understanding the Core Physiology Concepts among First Year Dental Students

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Aim: To study the effectiveness of animated power point slide presentations in understanding the core Physiology concepts among first year dental students.

Materials & methods: The research protocol received grant from the institutional research fund(s) was approved by the competent scientific bodies including ISAC and IHEC. The research protocol adhered the all principles of bioethics including the Indian Council of Medical Research (ICMR) 'National Ethical Guidelines for Biomedical and Health Research Involving Human Participants. The privacy and confidentiality of study research participants was strictly maintained as per the GCP standards. The core thematic areas in the Physiology clinical applications were identified and students were randomized either the interventional (Animated PPTs based learning) or Control group (Traditional/Conventional PPT based lectures). The collected data was analyzed by using appropriate parametric and non-parametric tests of statistical significance and p-value of less than 0.05 was considered as statistically significant.

Results: The study results highlighted that, the assignment scores were improved and more in the interventional group (Animated PPTs based learning) than compared to the control group Traditional/ Conventional PPT based lectures) and it was statistically significant ($p<0.001$). Interestingly it was noted that, periodic assignment scores were on higher raising trends in the interventional group (Animated PPTs based learning) than compared to the control group Traditional/Conventional PPT based lectures] and it was statistically significant ($p<0.01$).

Conclusion: This study concluded that, animated power point slide presentations is a powerful teaching and learning technique in understanding the Physiology core concepts among first year dental students.

Abstract-94

Validation and Banking of Multiple Choice Questions (MCQs): A Single Centre's Experience during COVID-19 Pandemic

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Introduction: Assessments during COVID-19 pandemic in many institutes were done using Multiple choice questions (MCQs). While most of the faculty were trained for traditional type of framing questions for essay and short answers, setting up MCQs were new to many.

Aim: 1. To validate 'MCQ based online assessment' using 'item quality indicators'. 2. To correlate difficulty level of MCQs perceived by question setter and calculated difficulty index.

Material and method: It was a retrospective cross-sectional study conducted among 51 second year undergraduates at JIPMER Karaikal. A total of 80 MCQs conducted online via 'Google forms' from mid-semester pathology test were analysed. Item analysis of the MCQs were done by calculating 'difficulty index, discrimination index and distractor effectiveness'. Each item was analysed for item writing flaws.

Results: Of 80 MCQs, majority (61, 76.25%) were 'easy' based on 'difficulty index' while 50% had 'poor' discrimination index. Most of the MCQs (51) had two or three non-functional discriminators. Five of the items were invalid with negative discrimination index. Of 11 'image based questions six were easy. All case based questions had acceptable difficulty level. 25 of the items perceived as difficult by question setters were found to be easy on calculating difficulty index.

Conclusion: MCQs with 'poor' discrimination index and 'easy' difficulty index could be accounted to very predictable or irrelevant options. This highlights the significance of framing 'functional discriminators' while setting up MCQs. Creating flaw free, item analysed MCQs help in building question banks which can further be used for formative and summative assessments.

Abstract-95

Assessing T/L Methods in Anatomy Effectively in Existing COVID-19 Pandemic- A Study Conducted in Government Siddhartha Medical College, Vijayawada

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Introduction: Anatomy is the science of structure of body and forms basis for understanding function. It is taught in first year and is a prerequisite for any branch of health care system. COVID-19 pandemic has brought challenges to learn anatomy for the students.

Aims: In this COVID-19 era, an attempt to consolidate and enhance learning of the vast subject, it is necessary to assess the benefits and pitfalls of various available teaching and learning methodologies.

Materials And Methods:100 medical students who had just completed their first-year syllabus in both offline and online methods, before and after lockdown, were given a questionnaire(offline), comprising of questions regarding T/L methodologies of anatomy.

Results: Students have opted for traditional teaching like chalk &board along with PPT Presentation. Gross anatomy was mainly learned by the dissections involved by the students and faculty side by side. Histology, mainly learned by spending more time on the microscope. Embryology, mainly understood by small group teaching with the help of 3D models.

Conclusion: Present study concludes that proper utilization of newer technologies along with the traditional teaching methods will certainly lead to enhanced understanding of gross anatomy and will ultimately improve students performance in this covid-era.

Abstract-96

Assessment of Nuclear Abnormalities in Individuals with the Habit of Tobacco: A Study on the Buccal Mucosa

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Introduction: Carcinoma of buccal mucosa is the commonest cancer of oral cavity in India according to the data available from the National Cancer Registry Programme (Population-Based Cancer Registries) of the Indian Council of Medical Research. Cigarette smoking and betel quid consumption are the main causative agents of malignant disorders in the Asia-Pacific region.

Aim: To estimate the nuclear abnormalities like micronucleus, multinucleation, nuclear budding, karyorrhexis and karyolysis in the buccal mucosa of smokers/tobacco chewers with proven oral premalignant lesions and those without the oral premalignant lesions and to compare nuclear variations in above two groups.

Material and Methods: Institutional ethical approval was taken for this study. Thirty samples of buccal epithelial cells were collected from the right and left sides of the buccal mucosa from 30 individuals. The study group was divided into two groups. Group I comprised 15 patients with a history of tobacco consumption and diagnosed with oral precancerous lesion. Group II included 15 subjects with a history of tobacco consumption in any form as habit controls. Smears were prepared and stained with May-Grunwald Giemsa. One thousand cells from each subject were studied.

Results: Mean age of smokers was 37.67±7.58 years. Mean micronuclei between both the groups was found 2.07±1.48 and 0.97±0.76, karyolysis 1.13±0.90 and 0.90±0.84, karyorehxis 3.43 ±1.99 and 1.67±0.92, nuclear budding 1.17±0.91 and 0.87±0.77, multinucleation 1.80±1.15 and 0.97±0.91, binucleation 1.70±1.44 and 0.87±0.86.

Conclusion: A critical increment of nuclear abnormalities like micronucleus, karyorrhexis, multinucleation, binucleation, nuclear budding, and karyolysis was found in smokers with histopathologically diagnosed OPL contrasted with smokers with practically no oral injury. Micronuclei measure can be a powerful assay that mirrors the seriousness of the sickness. Despite the fact that tobacco induced tumours are preventable, prohibiting tobacco use has not been feasible for social and political reasons. The count of micronuclei and other nuclear abnormalities can be seen as a non-invasive procedure for recognition, instruction of patients, screening of the mass populace, and furthermore the discovery of an oral malignant growth sore in a beginning phase will work on the pace of endurance, which will help in reduction of the morbidity to a greater extent during treatment.

Abstract-97

Study of Morphological and Histological Changes of Placenta in Preeclampsia

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Introduction: Placenta–the multifunctional organ of fetal origin is an exceptional source of information which echoes the intrauterine environment. Placental examination can shed light upon fetal or maternal disease, to provide prognosis for the current and future pregnancies, to evaluate the effect of maternal disease on the pregnancy, and for legal considerations. Placenta is considered as the source of preeclampsia which is one of the hypertensive (high blood pressure) disorders of pregnancy. The disease resolves itself after delivery which points out the major role of placenta in this.

Aims: 1. To study the morphological changes of placenta in preeclampsia. 2. To study the histological changes of placenta in preeclampsia using conventional hematoxylin and eosin stain.

Materials And Methods: A cross-sectional study was conducted on 20 human placental samples collected from Department of Obstetrics and Gynaecology, JSS Hospital, Mysore. The study group comprised 10 placentae from pregnancies with preeclampsia and the control group comprised placenta from normal pregnancies. Placental samples from women with any other maternal conditions which lead to small placental size and placental infarcts were excluded from the study.

Results: Significant decrease was observed in morphological parameters such as weight, diameter and thickness in pregnancies affected with preeclampsia, which is mainly due to the insufficient blood supply. Whereas asignificant increase was noted in the number of syncytial knots and areas of hyalinization in preeclamptic placentae.

Conclusion: The architecture of placenta is altered in many maternal diseases such as diabetes mellitus, hypertension, pre-eclampsia and eclampsia. Gross examination of a placenta prior to histologic sectioning enhances microscopic interpretation. The placental histology is useful in determining the cause and mechanism involved in adverse pregnancy outcomes. Though histological lesions are complex to interpret, histological placental evaluation provides valuable features that are useful to health care providers both for parent counselling and as a legal defence in cases of medical malpractice allegations.

Abstract-98

Anatomical Study of the Ulnar Nerve Variations and its Clinical Insinuation

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Introduction: Descriptive consideration and evaluation of nerve variations has a vital role in the clinical and surgical practice. The anatomical variation of a nerve sets a risk of nerve palsy syndrome. The ulnar nerve arises from the medial cord of the brachial plexus and is one of the common nerves involved in neuropathy.

Aim: In the current anatomical study, the different variations in the ulnar nerve have been spotted and identified, along with its potential surgical and clinical implications have been reviewed.

Material and Methods: Thirty upper limb dissected specimens were examined for possible ulnar nerve variations. Any communication or any aberrant formation concerning the ulnar nerve was carefully examined.

Results: Out of the 30 upper limbs specimens, the ulnar nerve in two instances (4%) showed the abnormal formation & communication with the neighboring nerves of the brachial plexus.

Conclusion: In understanding the severity of ulnar nerve neuropathy and its related complications, clinicians such as anesthesiologists, neurologists, radiologists, anatomists, orthopedic and neurosurgeons, should keep these variations into account.

Abstract-99

A Descriptive Study of Bifid Rib- A Rare Congenital Anomaly

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Introduction: Bifid rib is a rare congenital abnormality of anterior chest wall. The sternal end of the rib is cleaved into two, thus it encloses an additional intercostal space. In most cases it is asymptomatic and may be seen as an incidental finding on chest X-rays. Ribs are mesodermal in origin. So, presence of bifid rib may be associated with other mesodermal abnormalities.

Aims: The present study was done to estimate the incidence of bifid rib and to enlighten its importance to clinicians.

Materials and methods: The present study was conducted on 250 ribs obtained from the Institute of Anatomy, Madurai Medical College, Madurai.

Results: Of the 250 ribs examined 2 ribs were bifid ribs resulting in the incidence of 0.8%.

Conclusion: Knowledge about the bifid rib is necessary for clinicians in counting the ribs during diagnostic, therapeutic, surgical procedures, post mortem examination in this region and for radiologist in differential diagnosis of other diseases like chest wall tumors and costal fractures. It also helps in the early diagnosis of congenital disorders like Gorlin-Goltz syndrome, Job's syndrome, Kindler syndrome as bifid rib is one of its features.

Abstract-100

Morphometric Study on Proximal Aspect of Femur

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Aim: The study was aimed at determining the various parameters of upper end of femur among Indian population and to compare them with the data available in literature among western population and to identify the difference between the right and the left femur.

Materials and methodology: This study was conducted with 54 (28 right and 26left) femurs of both sides from the Department of Anatomy, K.A.P.V. Government Medical College and Hospital, Trichy. Parameters were measured and subjected to statistical analysis.

Results: In this study the vertical diameter of head and neck there were 41.6 mm and 32.68 mm on right and 41.77 mm and 32.86 mm on left. The transverse diameter of head and neck there were 43.29 mm and 25.24 mm on right and 43.38 mm and 25.73 mm on left side respectively. The head length and neck length of femur superiorly was 31.9 mm and 22.81 on right and 32.26 mm and 23.76 on left. The head length and neck length of femur inferiorly was 23.3 mm and 29.31 on right and 22.4 mm 30.41 on left. The intertrochanteric length was 56.47 mm on the right and 57.1 mm on the left. The mean neck shaft angle was 128.04 degrees on the right and 127.78 degrees on the left.

Conclusion : The values of all the parameters are greater in the Western population than in the present study. This study will help the orthopedicians and prosthetists to build suitable prosthesis and plan reconstructive surgical procedures for Indians.

Abstract-101

Cyclopia- A Case Report

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Introduction: Cyclopia is a congenital abnormality in which there is fusion of orbits and a single eye. It occurs due to failure of prosencephalon to divide the orbits of the eye into two cavities.It is a severe form of holoprosencephaly and incidence is about 1 in 100 000 new borns and common in female.

Case Description: A still born female fetus received from Department of Obstetrics and Gynaecology, Indira Gandhi Medical College and Research Institute, Puducherry showed dysmorphic face with a median single eye, absence of nose and a proboscis above the eye which are features of cyclopia.

Discussion: Cyclopia, a alobar holoprosencephaly results from incomplete cleavage of prosencephalon into two hemispheres occurring between 18th and 28th day of gestation. They present with reduction or absence of mid facial structures such as nasal

bone, nasal septum, ethmoid due to defect in development of frontal nasal process and medial nasal processes. Usually, the nose is either absent or replaced with a proboscis which appears above the central eye, or on the back

Conclusion: Cyclopia has poor prognosis and infants born with such anomalies are still born or die after birth. It can be diagnosed prenatally by ultrasound examination and amniocentesis for fetal karyotyping which gives the prognosis earlier.

Iniencephaly- A Case Report

Abstract-102

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Introduction: Iniencephaly is a rare and lethal defect of neural tube with an incidence of 0.1-10 per 10,000 livebirths. It accounts for 1% of all foetal anomalies with male: female ratio of 1:9.This occurs due to abnormal closure of neural tube in 3rd to 4th week of gestation.

Case Description: An aborted female foetus of 18 weeks gestation received from Department of Obstetrics and Gynaecology, Indira Gandhi Medical College and Research Institute, Puducherry showed features of iniencephaly.

Discussion: Iniencephaly is from a Greek word "inion" meaning nape of neck. It is characterised by three features – defect of occipital bone, rachischisis and head retroflexion. The most common outcome is stillbirth. It is of two types – iniencephaly apertus and iniencephaly clausus. It is associated with other congenital malformations with recurrence risk of 1-4%.

Conclusion: Prognosis is very poor and depends on retroflexion degree and associated anomalies, is usually fatal. Hence, early detection and counselling to parents about the prognosis of baby is essential to lower maternal risks and mother should be counselled for folic acid treatment before next pregnancy.

Double Ureter- A Case Report

Abstract-103

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Introduction: Double ureter is an uncommon renal abnormality occurring in approximately 1% of the population. Double ureter and duplex system can lead to future complications such as collecting system obstruction, lithiasis, ureterocele and vesicourethral reflex.

Case Description: On routine cadaveric dissection done in Department of Anatomy, Indira Gandhi Medical College and Research Institute Puducherry, it was found that the left kidney had double ureters arising from the upper and lower poles of the single renal pelvis that joined with each other to form a single ureter (Y-shape) segment measuring 8.5 cms before opening into the urinary bladder distally.

Discussion: Ureter develops from ureteric bud that lies between pelvis of kidney and vesicourethral canal. Duplication of ureter result from splitting up of ureteric bud which may be partial or complete ,with or without renal duplication. The angled point of union in incomplete double ureter predisposes to complications such as stone impaction in Y shaped bent and ureteroureteric reflux. The presence of an incomplete double ureter increases the possibility of ureteral injury during surgery and misinterpretation of radiological images.

Conclusion: The knowledge on anatomic variations in ureter have clinical importance and implications in various surgical procedures such as renal transplantations and retroperitoneal organ surgeries.

Abstract-104

Stress, Anxiety and Depression of Medical Teachers during COVID-19

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Introduction: Medical teachers have been experienced different kinds of psychological stress and anxiety during COVID-19 .The pandemic has not only affected the mental state of students , since teachers have also accumulated a high level of stress since beginning of crisis .This stress has often been accompanied by symptoms of anxiety ,depression and sleep disturbances as consequence of the increased workload resulting from home teaching.

Aim: The aim of study was to investigate the stress, anxiety and depression on medical teachers during COVID-19.

Materials and methods: The study was carried out in Saveetha medical college. An online survey was conducted and disturbuted to the medical teachers via the google forms containing questionnaire session. The level of stress measures based on the 10 items perceived stress scale .The level of anxiety was measured based on the 7 items generalized anxiety disorder scale.

Results: A total of 370 participants responded to perceived stress component of survey of whom 17% had high stress, 67% had moderate stress, 15% had low perceived stress. Being female was significantly associated with moderate /high stress. A Total of 201 participants responded to generalized anxiety disorder component of the survey ,of whom had mild anxiety (28%), had moderate anxiety (39%) and 46% had severe anxiety .A total of 169 participants responded to the depression component of survey of whom 72% had high depression 18% low depression.

Conclusion: A considerable proportion of medical teachers stress and anxiety during COVID-19 outbreak .There a need to establish mechanisms to reduce the risks of stress and anxiety among medical teachers .

Abstract-105

Shift of Traditional Teaching to Virtual Teaching under COVID-19 Pandemic in Chennai

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Introduction: Closure of educational institutions due to COVID-19 and the corresponding shift to virtual learning affected the students due to the lack of physical and social presence hindering interaction and engagement leading to isolation which acts as a key to high drop out rate in online learning.

Aims & Objectives: COVID-19 pandemic has been spreading worldwide and caused many critical consequences in every aspect of life including the traditional classroom education which has made us to expand our horizons by up taking virtual teaching of anatomy. This study aims at the examination of attitudes and perspectives of students towards this shift to virtual teaching and learning of anatomy.

Materials and Methods: An online survey was conducted in Saveetha Medical college for a period of about 9 months split in to three phases 0-3 months, 3-6 and 6-9 months respectively, in which about 126 medical students including undergraduates and postgraduates participated. The survey was conducted through google forms in a questionary pattern. A questionnaire was used to validate the effectiveness of virtual learning through the different phases.

Results: Undergraduate students represented 58.8% (n=64) of study sample, whereas 49.2% (n=62) were postgraduate students. Of the total 126 students, 7.9% (n=10) were between the age range of 16-20, whereas 92.1% (n=116) were between the age range of 21-25. 73% (n=92) reported that they have proper access to the internet, 9.5% reported no proper access, while 17.5% (n=22) reported that they have limited access to the internet through a mobile phone or handheld device.

Conclusion: According to the survey, it was found that apart from technical and monetary issues caused due to the sudden change in teaching-learning methods because of the inevitable pandemic situation, the students also face inconvenience due to the lack of face to face interactions with the teacher , engagement and visual learning of the anatomy specimens. Even though there was slight difficulty in adapting to this new method of teaching, virtual teaching provided sustainence in learning anatomy by bridging the gap with traditional ways of teaching through live discussion sessions in apps like Zoom, Webex etc., pre- recorded videos of dissections and specimen explanations alongside the usage of youtube videos.

Abstract-106

Impact of COVID-19 on Medical Student's Psychological Well-being at Chennai

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Introduction: The COVID-19 pandemic has an impact medical education for medical students. As medical students are already vulnerable to poor psychological well-being, the psychological wellbeing of medical students may be significantly affected by changes caused by COVID-19.

Aim and Objectives: The aim of the study is to discuss the curriculum and psychological ramifications of the COVID-19 epidemic on medical students at Chennai.

Materials and Methods: A cross sectional, questionnaire-based study of students at Saveetha Medical College in Chennai.

Result: There were 415 responses. Females constituted 51.8%. Saveetha Medical College represented around 40% of the responders. 60% of the students have Grade Point Average (GPA) of less than 3 points. Nearly half of the students indicated that their academic grades were affected during the pandemic. Sixty three percent reported that they sanitize their hands before touching eyes, nose, or mouth. More than two thirds (70.4%) of students indicated that their mental health was affected in the pandemic. Financial influence was a major aspect in around 53% of students and 34% of students were not able to pay the university fees due to the pandemic. The pandemic affected the elective training course location of 70.9% of respondents. Mental health was affected in 70.9% of students and 65.1% became more anxious or depressed with no significant difference among gender and academic years (p values 0.256 and 0.516, respectively).

Conclusion: COVID-19 pandemic negatively affected the academic course of the medical students. COVID-19 pandemic left a negative impact on psychological wellbeing of the students, rendering them more anxious, depressed, and afraid of coming to the hospital and handling patients.

Abstract-107

Students' Perception in Learning of Anatomy using Virtual and Conventional Method

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Introduction: Evolution of pedagogy in medical education is mainly due to technological advancement. Medical schools shifted online in response to COVID-19 Pandemic, which lead to decreased student participation, a loss of inclusive hands-on experiences.

Aim: Therefore, the current study aimed to determine the students' perception on the virtual anatomy classes that was provided to them in addition to conventional teaching learning method.

Materials and methods: A descriptive questionnaire based study conducted during the period of January to September 2021. The participants were 250 medical students from first phase of MBBS. A questionnaire was made using Google Form and finalized after proper validation. It was circulated to students on E-mail and messaging platforms such as Whatsapp, and Telegram. The questionnaire was designed with informed consent and 20 questions which enquire about the socio-demographic profile, their perception about the virtual and conventional method of learning. All the questions were closed ended questions in multiple choice format and 5 points Likert scale. The study was done after getting institutional review board approval. The data was then tabulated and interpreted with descriptive statistics using Microsoft Excel Version 2019.

Results: The majority of students (82.4%) agreed that they missed conventional anatomy learning, such as cadaveric trainings, face-to-face lectures, and interaction with mentors. About 83% had a lack of appropriate devices, poor network connectivity as a barrier to their virtual learning. Over 69% of students reported a lack of personal motivation. Finally, more than 79.9% of students chose conventional over virtual method of practical education.

Conclusion: In conclusion, virtual learning became inseparable part of medical education, student perception can be useful for making adequate and updated changes to virtual anatomy education.

Abstract-108

A Study of Anxiety, Depression and Stress Symptoms among Medical Students during COVID-19

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Introduction: The wide spread of novel Coronavirus (COVID-19) carries not only physical but also psychological effects especially among the medical students. The COVID-19 pandemic made examination and curricular restructuring. With the accessible evidence suggesting that medical students mental health status is very poorer than that of general population. Academic stress being a chief predictor have significant effect on student's mental well-being.

Aim: The aim of the study was to investigate the psychological distress of COVID-19 on medical students and to find the personal risk factors.

Materials and Methods: The present study was an observational study conducted at Saveetha Medical College, the total participants was 282 medical students. An online survey was conducted and distributed to medical students via Google forms containing the questionnarie sessions. The questionnaire consists of demographic details, psychometric tools for assessment of depression, stress and anxiety scales.

Results: The total number of participants were 282 medical students. Participants with clinically significant depression was 75.2%, anxiety was 56.4% and stress was 52.9%. Those who showed PTSD was 54.3%. This analysis revealed that it is associated with gender. This study also revealed that depression and anxiety was significantly associated with personal history of psychiatric illness.

Conclusion: Medical students were highly depressed, anxious and stressed during COVID-19 pandemic. The psychological impact of COVID-19 on medical students is also associated with previous psychiatric illness and gender.

Abstract-109

Assessment of Morphometric Parameters of Middle Cerebral Artery using CT Angiography in a Tertiary Care Hospital

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Introduction: With an increased incidence of middle cerebral artery (MCA) aneurysms, most of which are at the M1 division point, its actual standardized measurements are crucial for surgical repair.

Aim: To analyse the morphometry of MCA using CT Angiography in the Indian population.

Materials and Methods: CT cerebralangiography of 289 patients (180 males and 109 females; mean age- 49.29±16.16 years) from a tertiary care hospital were reviewed. The cases involving aneurysms and infarcts were excluded. The length and diameter of MCA were measured and results were statistically analysed.

Results: The total length of MCA was 24.02±1.22 mm. The mean length of MCA on the right and left sides were 23.88±1.30 mm and 24.16±1.13 mm, respectively and the difference was statistically significant ($p<0.05$). The mean length of the M1 segment was 14.32±1.27 mm. The mean length on the right and left sides were 14.19±1.39 mm and 14.44±1.12 mm, respectively and the difference was statistically significant ($p<0.05$). In males, the mean length of M1 segment was 14.31±1.30mm and in females, it was 14.32±1.21 mm. The mean diameter of the MCA was 3.33±0.62 mm. The mean diameter on the right and the left sides were 3.32±0.62 mm and 3.33±0.62 mm,respectively, and the difference was not statistically significant ($p=0.832$).

Conclusion: The knowledge of MCA measurements will be useful for clinicians and surgeons in handling cases of intracranial aneurysms and infarcts.Thus, data from this study would help surgeons minimize errors and provide the best possible outcome to the patients.

Abstract-110

Study on Variation in Origin and Branching Pattern in Internal Iliac Artery in Cadaver

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Introduction: The variations in blood vessels are common and have long received the attention of anatomists and surgeons. Bilateral internal iliac artery ligation is an effective life-saving method to control obstetrical and gynecological hemorrhage. Its branching pattern and its variations are important for surgeons. Hence, this study aims at identifying the various branching patterns of internal iliac artery based on the Adachi's classification, along with length and extent of artery.

Materials and methods: The study included 35 embalmed cadavers, obtained from Department of Anatomy, Sri Ramachandra Institute of Higher Education and Research Institute, Chennai. The internal iliac artery along with its anterior and posterior divisions and its further subdivisions, were carefully delineated by separating it from the surrounding structures. Morphometric measurements were taken using Vernier calipers.

Results: The internal iliac artery ranges from 2 cm to 7 cm in length and originates in most cases at level of lumbosacral articulation and mostly bifurcates at level of upper border of greater sciatic notch. Anterior division branches to inferior gluteal, internal pudendal, obturator, superior vesical, inferior vesical, middle rectal, and uterine and vaginal arteries in females while the posterior division gives origin to lateral sacral, iliolumbar and superior gluteal arteries. The highest proportion of cases display the Type I branching pattern of Adachi's classification.

Conclusion: The "arterial tree" of internal iliac artery is composed of complex variations in the length, extent and its branches. Applying ligatures on an anomalous blood vessel may lead to alarming hemorrhage. Knowledge regarding the internal iliac artery and its branches is helpful in applying ligatures safely during pelvic surgeries. The results of this study help anatomists for location, origin, course, relations with adjacent structures, branching pattern and anatomical measurements of the internal iliac artery and in providing information of pelvic region for surgical reconstructive procedures.

Abstract-111

Morphometric Study of Adult Human Trachea and its Clinical Implications

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Introduction: There is a wide variation in different dimensions of Trachea in same as well as in different age groups in both sexes. Besides anthropometry, the study of these morphometric variations is of profound clinical importance as it may help the pulmonologists to understand the etiology of several pulmonary diseases like bronchitis, emphysema, Pulmonary fibrosis and Tuberculosis

Aims: To determine the wide variation in the dimensions of human trachea in same as well as in different age groups in forty adult human tracheas.

Materials & Methods: This descriptive study was done on forty tracheas obtained from adult male cadavers in the Department of Anatomy, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar (Punjab) after receiving approval from the institutional ethical committee between 2019 to 2021. After considering exclusion and inclusion criteria, the trachea was dissected with the larynx and principal bronchi. The measurements were taken.

Results: Mean length of trachea was109.25 mm, mean subcarinal angle was 75.45 degree, mean AP, transverse diameter, mean height and distance between posterior ends of rings was 16.70 mm & 18.10 mm, 4.93 mm and 12.15 mm respectively and mean of inter-ring distance between 1st-2nd, 5th-6th, 10th-11th and 15th-16th tracheal rings was 1.12 mm.

Conclusions: Accurate anatomical knowledge of length and diameter of trachea and its variations helps the ENT surgeons in choosing the proper size of tracheostomy tube in emergency situations and also in reconstructive surgery of tracheobronchial tree.

Abstract-112

Study of Developmental Histology of Fetal Kidneys

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Introduction- The normal developmental anatomy and histogenesis of urinary system helps in understanding, diagnosis, treatment of prenatal renal disorders like Wilms' tumor, multicystic renal dysplasia, hydronephroses etc. The description of development of human kidney given in various textbooks of embryology doesn't include detail microscopic appearance of kidney at various fetal ages. But there are very few studies done on fetal kidneys to appreciate the morphometry of components of fetal kidney at various stages.

Aim: Present study aims at studying the human kidney development by noting changes in the renal histology in fetuses of various age groups.

Materials And Methods: 30 fetal kidney (12-36 weeks) obtained from JSS Medical college and Hospital, Mysuru with proper documentation and consent from both the Hospital. Gross anatomy of Kidneys was noted. Sections stained with H&E stain were observed under microscopy.

Results: There were 5, 13 and 12 kidneys of 12-18 weeks, 18-25 weeks and 25-36 weeks respectively. Cortex and medulla were well differentiated towards 18 weeks. Glomeruli significantly increased towards 20-32 weeks. Size of glomeruli could be measured after 22 weeks ranging from 7-10 micrometer. PCT and DCT measured 5-7 micrometer and 4-6 micrometer respectively at that age. Blood vessels could be clearly identified at about 15 weeks.

Conclusion: Thorough understanding of morphometry of various components of fetal kidney and vasculature will help in the better understanding of congenital anomalies pertaining to fetal kidneys.

Unusual Course of Median Nerve in Arm

Abstract-113

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Introduction: Median nerve (C5,C6,C7,C8&T1) supplies most of the muscles of flexor compartments of forearm and the muscles of thenar eminence in the hand. In the arm, at the level of insertion of coracobrachialis, usually the median nerve crosses from lateral to medial in front of brachial artery and accompanies it along the medial side. Here we present this rare and interesting case report of an important variation in the course and relation of median nerve in the arm.

Materials and Methods: During routine dissection of 70 year old male cadaver allotted for the undergraduate students of 2020- 2021 batch in the department of anatomy, Sree Mookambika Institute of Medical Sciences, Kulasekharam,

Results: We found that the formation of median nerve was normal, but at the level of insertion of coracobrachialis the median nerve crossing the brachial artery from lateral to medial side passing behind the brachial artery and accompanies along the medial side, the remaining course and relation of median nerve is normal. Opposite upper limb was also dissected to find out any variation in its course and relation but was found to be normal.

Conclusion: The unusual course of median nerve passing behind the brachial artery while crossing from lateral to medial side at the level of insertion of coracobrachialis should be kept in mind while performing surgeries, reduction of fracture and nerve block in the middle of arm.

Abstract-114

Unilateral High Bifurcation of Brachial Artery and its Clinical Significance- A Case Report

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Introduction: The brachial artery provides the main supply to the arm. It begins as a continuation of the axillary artery and extends from the lower border of teres major and ends by neck of radius by dividing into the radial and ulnar arteries. In this present study, variations in the course and branching pattern of the brachial artery is noted. The knowledge about these variations are important to the diagnostic interventions.

Case Description: During routine dissection of upper limb,we detected a case of higher division of brachial artery on the right side. In the upper third of arm, it divided into the medial and lateral branches about 2 cm distal to the lower border of teres major. Profunda brachial artery arose from the small course of it. Lateral branch gave superior and inferior ulnar collateral arteries. In the lower third of arm, two branches were crossing over. after that lateral and medial branch continued as radial and ulnar arteries respectively.

Discussion: Variations of the upper limb arteries are not uncommon. High division of brachial artery in the proximal third has been reported by many articles.

Conclusion: Diagnostically, this variation may disturb the assessment of arteriography images and can have serious implication in orthopedic, plastic and vascular surgeries. Also, knowledge of these different variations is important for the clinicians in day-to-day practice in measuring of blood pressure.

Abstract-115

Increased Hepatic Pregnane X Receptor Protein Expression Negatively Correlates with Tight Junction Proteins in Patients with Hepatocellular Carcinoma

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Introduction: The nuclear Pregnane X Receptor (PXR) is a master regulator of detoxification and plays role in xenobiotic metabolism through CYP3A4, thus protecting the body from toxic insults. In Hepatocellular Carcinoma (HCC), sorafenib resistance leads to failure of systemic therapy, thus leading to poor prognosis in HCC patients. Deranged tight junction proteins in HCC leads to tumour dissemination and progression of HCC.

Aims: To identify the expression of PXR and Tight junction proteins and their association with HCC pathogenesis.

Materials and methods: Following Institutional ethical committee approval, a total of 80 individuals (40 HCC cases and 40 normal healthy controls) were enrolled in the study. Baseline characteristics, biochemical parameters and Alpha-fetoprotein were analysed by Beckman Coulter autoanalyzer. Estimation of serum PXR and IL-1B were done by ELISA. PXR and tight junction proteins expressions were analysed by western blotting and immunohistochemistry.

Results: Authors found significantly increased tumour marker AFP and coagulation profile tests PT/INR in HCC cases compared to healthy controls. Moreover, significantly increased serum PXR in HCC patients compared to normal healthy controls (4.27±0.33 Vs 1.14±0.08; $p<0.0001$), consistent with increased expression of PXR in HCC liver tissue. HCC patients showed a deranged hepatobiliary profile with increased inflammation as shown by a significant increase of IL-1 beta levels compared to healthy controls (93.94±31.49 Vs 16.71±5.34; $p<0.0001$). Furthermore, significantly decreased tight junction proteins ZO-1 and occludin in serum and liver tissue of HCC patients were observed compared to normal healthy controls.

Conclusion: Thus, our novel findings indicate that increased inflammation is associated with the upregulation of PXR and downregulation of tight junction proteins in HCC. Targeting PXR and tight junction proteins could be a useful approach to facilitate HCC treatment.

Abstract-116

An Integrated Approach- Demographic, Clinical, Laboratory and Radiological Features in Predicting Mortality of COVID-19 Patients in Critical Care Medicine

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Introduction: Now the situation is rapidly evolving with new variants of SARS-Cov-2, and the scientific community is still learning to identify patients with higher risks for effective triaging and better resource allocation as there is no effective specific therapeutics for COVID-19 patients. This was the main motivating factor behind this study.

Aim: 1) Analyse the demographic, laboratory, clinical and radiological features in COVID-19 patients admitted in critical care medicine and to study their association with survivors and non-survivor. 2) To propose a model to predict mortality rate in critically ill COVID-19 patients.

Materials and Methods: This study was conducted on RT-PCR confirmed COVID-19 patients admitted in Critical Care Medicine Department at Yenepoya Medical College, Mangalore during May and June 2021. The data collected (age, gender, RR, PR, BP, SpO2, DM, HTN, WBC, Hb, Platelet, CRP, LDH, D-dimer, Creatinine, Urea, CT Score, lung involvement pattern and distribution) was retrospectively evaluated and compared between survivors and non-survivors.

Result: Among the 91 enrolled patents, 65(71.42%) survived and 26 succumbed to death. In the non-survivors mean age was 61.42±13.24, male 18(69.23%). Backward stepwise logistic regression is used to identify the significant predictors of mortality. These parameters were significant in Backward logistic regression model: RR (p:0.008, OR1.164), spO2(p:0.05, OR:0.928), WBC (p:0.001, OR:1.170), D-dimer (p: 0.005, OR:0.999), Urea (p:0.001, OR:0.916) and CT (p:0.000, OR:1.259). The sensitivity of the model is 80.00%% (95% confidence interval is [59.30% 93.17%]), specificity is 92.68%. (95% CI is [80.08% 98.46%]). The overall accuracy is 87.88%. (95% CI is [77.51% 94.62%]). The positive predictive value is 86.96%. (95% CI is [68.79% 95.28%]). The negative predictive value is 88.37%. (95% CI is [77.55% 94.36%])

Conclusion: Involving clinical, laboratory and radiological features has shown to be a good approach in mortality prediction of critically ill COVID-19 patients.

Abstract-117

Audit of Clinical Biochemistry Test Request Forms in a Tertiary Care Hospital

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Introduction: Test Request Forms Are An Important Means Of Communication Between A Physician And A Diagnostic Service Provider. Total Quality Management Is Based On Preanalytical, Analytical And Postanalytical Elements Of A Routine Service. Test Request Forms Is A First Step In The Preanalytical Process. Iso 15189:2012(E) – 5.4.3- States That The Format Of The Test Request Form Should Be User Friendly.

Aims: To Analyze The Test Request Patterns Of Outpatient, Inpatient Wards And Icus. To Study The Test ReqUest Forms Of Various Departments. To Analyse The Tests Ordered From Various Departments And Suggest A Simplified Trf For Each Department Wise.

Materials And Methods: Initially All Test Request Forms (Trf) Reaching The Clinical Biochemistry Lab In The Month Of February 2021was Collected. From This, Data Were Retrieved Manually And Processed In Microsoft Excel. Since The Data Were Too Voluminous To Collect And Analyse, We Decided To Collect Data For The Month Of July (1st-31st)2021 From Lab Information Service As A Purposive Sample.

Results: Forty Test/Profile (<25%) Contributed More Than 90% Of Test/Profile Count. The Ip And Op Test Request Pattern Were Different. Focusing On 'Most Frequently' And 'Frequently' Categories May Simplify Trf.

Conclusion: The Test Request Forms Which Act As A Mode Of Communication Between The Lab And The Clinician Should Be Easier To Use But At The Same Time Should Contain All The Details That Need To Be Conveyed. Hence Making It In Coalition With The Clinician Is The Best Way To Reduce The Pre-Analytical Errors And Improve The Quality Of The Service Provided.

Abstract-118

A Comparative Study of Serum Electrolytes, Calcium and Phosphorus in Newly Diagnosed Patients of Hypothyroidism with Healthy Control at SMS Medical College

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Introduction: Hypothyroidism is the deficiency of thyroid hormones affecting 2-15% population worldwide. Relation of hypothyroidism with minerals is not clear and underlying mechanisms responsible for changes are unknown. Thus, a comparative study on hypothyroidism cases and healthy controls was done.

Aim: To compare levels of serum sodium, potassium, chloride, calcium and phosphorus in patients of hypothyroidism with healthy controls and correlate levels in cases of hypothyroidism with TSH.

Materials and Methods: After taking due permissions, study was conducted in Department of Biochemistry and Endocrinology, SMS Medical College on 30 cases of hypothyroidism and 30 healthy controls. Serum Electrolytes, Calcium, Phosphorus were analyzed by Ion Selective Method, Arsenazo III method, UV molybdate on automated analyzer respectively. TSH was assessed by CLIA.

Results: A significant decrease in serum sodium, potassium, calcium was observed in cases as compared to controls ($p<0.05$). A significant increase in phosphorus was observed in cases compared to controls.

Conclusion: Thyroid dysfunctions have an influence on renal hemodynamics, glomerular filtration and electrolyte handling and also have adverse effects on calcium homeostasis. Frequent follow up and monitoring of these parameters in hypothyroidism will be of great help in its management.

Abstract-119

Does Serum Albumin has an Impact on COVID-19 Severity?

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Introduction: The Coronavirus Disease 2019, global pandemic is associated with high mortality and morbidity. Under cytokine storm, albumin can undergo irreversible oxidation that may affect its protective properties and elicits further tissue damage. Thus, measuring serum albumin levels in COVID-19 patients may give an additional information to clinicians on disease activity.

Aim: To find out the relationship between serum albumin levels with COVID-19 severity in hospitalized patients in Coimbatore Medical College Hospital.

Materials and methods: It was an observational study conducted in Coimbatore Medical College Hospital. About 85 COVID-19 positive patients (age >18 years) were included in this study with and without respiratory support. Patients with known liver disease were excluded. Serum albumin levels, liver enzymes were measured and compared between these two groups along with other parameters.

Results: Serum albumin levels are significantly reduced ($p<0.05$) in COVID-19 Patients with respiratory support.

Conclusion: This study demonstrates hypoalbuminemia in patients with severe COVID-19. Therefore, routine monitoring of albumin is necessary in COVID-19 patients to predict the severity and prognosis. Albumin supplementation may improve prognosis but further studies are required to prove this hypothesis. Key words: Serum albumin, COVID-19, respiratory support.

Abstract-120

Impact of COVID-19 on Nervous System

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Introduction: Apart from lung symptoms, studies report that 36.4% of patients with COVID-19 developed neurological symptoms including headache, disturbed consciousness, paresthesia, loss of smell and taste, partial neuronal degeneration and brain tissue edema. Mechanisms proposed for virus entry are via ACE2 receptors, olfactory nerves and MCP-1 protein. Assessing reaction time is an indirect way of assessing the integrity of the nervous system. This study aims to find out the effect of COVID-19 on auditory and visual reaction time (ART&VRT) during illness and after recovery. This helps us to assess the degree of nervous system damage during illness and whether recovery time is shorter or longer.

Aims: 1. To measure and compare the impact of COVID-19 on ART&VRT during COVID-19 illness and one and two months after recovery 2. To measure and compare ART&VRT in non COVID-19 subjects with those of the COVID-19 patients.

Materials and methods: The study involved 86 subjects, 46 COVID-19 positive patients (WHO score ≤ 3) & 40 non COVID-19 subjects of age 20-60 years. ART&VRT was measured with discriminatory and choice reaction time apparatus during illness, one and two months after illness. Results were analysed using one way ANOVA.

Results: There was statistically significant difference ($p<0.05$) between auditory and visual (GREEN and RED) RT between control and COVID-19 patients during illness (152.86±29.76 vs 176.8±21.7, 170.80±22.71 vs 202.6±29.2, 161.92±21.79 vs 201.5±26.1). By one- and two-months post recovery, ART and VRT reduced in COVID-19 patients and no statistical difference ($p>0.05$) between control and COVID-19 patients by two months (152.86±29.76 vs 155.85±15.49, 170.80±22.71 vs 173.33±20.07, 161.92±21.79 vs 164.5±17.55)

Conclusion: Audio visual RT increased during illness indicating nerve lesion. But a progressive improvement was observed one and two months after recovery.

Effect of Yoga Training on Cardiac Parameters and Electrocardiogram Recording

Abstract-121

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Introduction: In modern life everyone experiences stress because of highly competitive and challenging lifestyle. Yogic practices result in an overall improvement of the various physiological functions of the body.

Aim: To determine whether yoga training improves cardiac function

Materials and Methods: The study was a prospective study conducted on fifty healthy subjects of age group 15-50 years (inclusive of both males and females) where the study parameters were assessed before the start of yoga training and after 3 months of yoga training under expert guidance. Heart rate, blood pressure, Valsalva ratio were assessed. Statistical analysis was done by using T test.

Results: There is decrease in Heart Rate (HR) and Blood Pressure (BP) while there is increase in Valsalva ratio after yoga training. The changes are more significant in younger age group. There is significant decrease in ST segment in the ECG findings after yoga training.

Conclusion: There is improvement in the cardiac function after yoga training. The greater improvement in the cardiovascular function in younger age group show that practice of yoga at younger age is more beneficial before the cardiovascular changes due to aging, have sets in. The finding will have significant impact on physical health among the people of Manipur.

Abstract-122

Abnormalities in Blood Physiology in COVID-19 Patients of DMCH, Darbhanga

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Introduction: COVID-19 is caused by SARS CoV-2. Although pulmonary manifestation have been identified as the major symptoms, several hematologic abnormalities have also been identified. Commonly reported haematological abnormalities are lymphopenia, thrombocytopenia, elevated D-dimer, coagulation/ fibrinolytic. Over production of pro inflammatory cytokines IL-6, IL-1 beta, TNF alpha induce cytokine storm and clot activation that may lead to death.

Aims: To help or support patients, clinicians and other healthcare professionals in early decision making about anticoagulation or thromboprophylaxis in critically ill.

Materials and methods: This study is conducted in COVID-19 patients who were admitted in ward or ICU of DMCH Darbhanga.

Results: In this study prolonged PT and elevated INR were found in severe and critical COVID-19 patients. Thrombocytopenia and prolonged APTT mainly in older

Conclusion: As there is potential risk of coagulopathy in severe cases especially with co-morbidities like hypertension, obesity, congestive heart failure, cancer. So, we recommend close monitoring of platelet count, PT, APTT, INR and D-dimer to inspect severity and prognosis of thromboembolism and dosing intensity of anticoagulants in hospitalized patients.

Effects of Yoga in PTSD Post COVID-19

Abstract-123

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Introduction: Post traumatic stress disorder (PTSD) is due to exposure to extreme lifetime traumatic events and there seems to be no cure. In COVID-19 era PTSD is very common among people due to permanent disability and death of near and dear ones. These people suffer daily from the recurring thoughts of reliving the trauma again. I chose this topic because I came across so many people with post COVID-19 stress and depression.

Aims: To determine alternative ways to treat PTSD rather than the use of traditional therapies.

Materials and methods: Yoga is a whole body and mind practice that in stills peace and empowerment. A total of 30 minutes yoga daily is beneficial at the cellular and even genetic level to enhance the immune system and reduce stress. Balancing the stress-response system: shift from sympathetic (energy burning) to parasympathetic (energy recharging) helps in dealing with post COVID-19 stress and depression.

Results: Previous studies have shown effect of yoga on hippocampus which is thought to be responsible for intrusive memories and flashbacks that occur in people with this PTSD. Yoga helps in learning to tolerate feelings and sensations by increasing the capacity for introspection, moderate arousal and learning that after confrontation with physical helplessness it is essential to engage in taking effective action. Sensory input can automatically stimulate hormonal secretions and activation of brain regions involved in attention and memory.

Conclusion: People doing yoga showed significant decrease in frequency of intrusions and severity of hyperarousal symptoms. These people reported a sense of awareness that they had not experienced before and learned to sense and focus on their bodies after the yoga sessions.

Abstract-124

Prospective Observational Study of Maternal and Fetal Outcome in COVID-19 Patients Admitted in a Tertiary Care Teaching Hospital MIMS, Mandya

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Introduction: Corona Virus Disease 2019 (COVID-19) is an infectious disease caused by SARS-COV-2. First identified in December 19 in Wuhan, China On March 12,2020, WHO announced corona virus outbreak as pandemic. Till September 14, in India >48,50,887 confirmed cases, >9,90,502 active cases, >37,79,927 recovered cases reported. In karnataka 4,59,445 confirmed, 99,203 active, 3,52,958 recovered, 7265 death reported.

Aim: To study maternal and fetal outcome in COVID-19 positive pregnant patients admitted in MIMS, Mandya (from 1st wave to 3rd wave).

Materials and methods: This is a prospective study conducted in the Department of OBG, MIMS, Mandya, of a study period of 15 months from June 2020 to November 2021. All cases of confirmed COVID-19 patients admitted in the Department of OBG are included in the study period ,using medical case records, OT registered - age ,parity ,mode of presentation, investigations, management and outcome of delivery were observed among the COVID-19 patients.

Results: Out of 216 admissions in 1st wave 139 cases delivered and in these 84 (60.4%) vaginal deliveries and 55 (39.5%) c-section ,among which 1 VBAC, 1 breech, 1 vaccum, 3 PPH, 2 IUD, 1 maternal death and 40 NICU admissions and among which 4 babies were positive and 1 neonatal death. During 2nd wave, out of 355 admissions 168 delivered and in these 98(58.3%) vaginal deliveries and 70 (41.6%) c-section, among them 8 vaccum deliveries, 4 IUD, 1 breech, 1 VBAC, 4 PPH , 1 MRP, 5 MVA and 1 ectopic pregnancy and 10 maternal death and 15 NICU admissions among them 8 COVID-19 positive babies and 1 neonatal death. In the emerge of 3rd wave 1 case we have documented and it is LSCS on 2/11/21 baby COVID-19 negative.

Conclusion: Compared to 1st wave and 2nd wave there is increase in disease severity and number of cases. Burden of disease has drastically increased. Early diagnosis and prompt treatment can reduce the mortality rate in COVID-19 patients.

Abstract-125

Medical Undergraduates Perspectives on Online Learning during COVID-19 Pandemic: A Cross-sectional Study

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Introduction: The COVID-19 pandemic had changed the students system of learning around the world. With circumstances then in 2020, face-to-face learning method was not a possibility, and medical students were introduced into e-Learning. Though e-learning is on board in most universities, it is new for most students mainly our undergraduates who are usually trained in traditional ways of learning. This study was planned to bring light about students' perceptions and effectiveness about this learning method.

Aims: To assess the perception of medical undergraduates on online learning during the COVID-19 lockdown.

Materials and methods: This web-based descriptive cross-sectional study was conducted among the medical undergraduates of a private medical college in Kanchipuram. Sample size required was 224. Convenient sampling method was deployed. Semi structured questionnaire was used, and Data was entered in Microsoft excel and analyzed using SPPS 20.

Results: Among 224 participants, 133 (59%) were females and 91 (41%) were males with mean age of 20 years (S.D. 1.40). Majority of them 186 (83%) were not exposed to e-learning earlier. Nearly half of them 108 (48%) felt e-learning was not interesting. 134 (60%) found it difficult to understand online classes without appropriate guidance and only 50 (22%) found the classes to be interactive. Around 177 (79%) felt their understanding of concepts taught was excellent in traditional classroom learning whereas only 49 (23%) felt the same with e-learning. Majority of the students faced difficulties like headache 118 (53%), neck pain 100 (45%) and back pain 88 (40%) during this period.

Conclusion: This study revealed that undergraduate medical student's preference of learning was not for e- learning. More interactive sessions would make e-learning a very healthy platform at present and in future.

Abstract-126

Histomorphological Study on the Ameliorative Effect of *Vitis vinifera* L. on Lead Induced Testicular Damage in Adult Wistar Rats

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Introduction: Lead is a main environmental pollutant, which can cause serious illness if it is not controlled and monitored. It is widely used in industry, medicine and cosmetics. Lead exposure has been found to exert a major impact on testis causing infertility in males. Vitis vinefera L. seed has been traditionally used to overcome the reproductive problems, but there is a lacuna of its ameliorative effect of vitisvinefera on lead induced testicular damage.

Aim: To investigate the ameliorative effect of Vitis vinifera.L., in lead induced testicular damage in albino rats. To evaluate the ameliorative effect of the ethanolic extract of Vitis Vinifera.LSeed on Lead induced histo-morphological changes in testicular tissue in wistar rats.

Materials and methods: A total of 24 adult male wistar rats were administrated with lead acetate and the ethanolic extract of the Vitis vinefera.Lseeds per os. Hematoxylin and eosin stained sections of the testis were used to study the histomorphology.

Results: Lead exposure resulted in damage to the testicular architecture. Co-administration of Vitis Vinifera.L reduced the effect of lead acetate with restoration of testicular architecture.

Conclusion: Our findings suggest that extract of Vitis Vinifera. Lseeds can act as a natural ameliorative agent against the testicular damage due to Lead acetate exposure.

Abstract-127

Immunohistochemical Expression of p63 and Calponin in Normal Human Breast, Usual Ductal Hyperplasia and Carcinoma Breast

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Introduction: The human breast is composed of parenchyma and stroma. Parenchyma includes secretory acini and ducts. The ducts are composed of two epithelial cell types, the inner polarized luminal epithelial cells and outer myoepithelial cells. The myoepithelial cells have the property of self-renewal and they consistently undergo both proliferation and differentiation to replace injured, aged or dead myoepithelial cells. This anatomical relation suggests that myoepithelial cell might inhibit the progression of in situ to invasive breast carcinoma. In breast cancer progression, the fully differentiated myoepithelial cells gradually disappear. Therefore, identification of myoepithelial cell is a valuable clue in the differential diagnosis of breast carcinoma.

Aims & Objectives: To study the expression patterns of myoepithelial differentiation markers (p63, Calponin) in normal, Ductal hyperplasia and carcinoma breast. To compare the difference in number, size and shape characteristics of myoepithelial cells in normal, ductal hyperplasia and carcinomabreast.

Materials and methods: The present study was done in the Department of Anatomy of our Institution. 15 cases each of normal human breast, Usual Ductal Hyperplasia (UDH) and 15 cases of carcinoma were studied during the period 2019 to 2021. Formalin fixed paraffin embedded sections were stained manually with p63 and Calponin.

Results: p63 expression was nuclear and calponin staining was cytoplasmic. In normal breast tissue, intense staining of nuclei of normal myoepithelial cells of breast lobules and ducts was noted. Expression of calponin was observed in majority of myoepithelial cells of normal breast. p63 and calponin expression were preserved in ductal hyperplasia. All invasive breast carcinomas were devoid of p63 staining and calponin immunostaining.

Conclusion: Immunohistochemistry is a very useful tool to demonstrate the alterations in myoepithelial differentiation. Simultaneous usage of two immunohistochemical myoepithelial markers can help increase the diagnostic accuracy of breast diseases.

Abstract-128

MRI Study on Sagittal Diameter of the Cervical Spinal Canal in Adult Population

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Introduction: The reference values for the sagittal diameter of the cervical spinal canal derived from MRI are still not available in adult population of Uttar Pradesh. The sagittal diameter of the cervical spinal canal is important in traumatic and degenerative conditions of cervical region. The study is done in MRI as the accuracy of MRI is more than the normal plain radiographs.

Aim: To measure the sagittal diameter of the cervical spinal canal by MRI in both sexes from C3 to C7. To provide standard MRI values for the sagittal diameter of the cervical spinal canal with respect to spinal level in male and female.

Materials and methods: A study is conducted on Magnetic Resonance Imaging (MRI) based cross-sectional study of 314 asymptomatic individuals from 18 to 70 years of age comprising 157 Male and 157 Females. This study was conducted in the Department of Radiology, Santosh Medical College, Ghaziabad (U.P.) in collaboration with Department of Radiology, Hind Institute of Medical Sciences, Barabanki (U.P.). Individuals with any obvious clinical history of trauma, pathological lesions, cervical myelopathy, surgery or any congenital anomalies related to cervical spinal canal were excluded from the study.

Results: The value of sagittal diameter of the cervical spinal canal was found least at C4 vertebral level. In the present study, no statistical significant difference was found when comparing the sagittal diameter of cervical spinal canal at each vertebral level from C3 to C7 between Male and Female.

Conclusion: The mean value of sagittal diameter of the cervical spinal canal is 14.10±1.51 in male and 14.14±1.31 in female.

Abstract-129

Clinical Appraisal of Unusual Course of Posterior Intercostal Vein- A Case Report

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Introduction: The posterior intercostal veins drain the thoracic wall and lie in the costal grooves along with the intercostal arteries and nerves behind the thoracic sympathetic chain. The complexity of the anatomy of the sympathetic trunk and posterior intercostal veins in the third and fourth intercostal spaces may lead to intraoperative or postoperative bleeding during endoscopic thoracic sympathectomy for the treatment of a variety of autonomic disorders, such as primary palmar hyperhidrosis, facial blushing, and certain vascular disorders.

Case description: During a routine dissection of the posterior mediastinum of the formalin-fixed male cadaver in the Anatomy Department of an undergraduate and postgraduate teaching medical college in India, the large-sized posterior intercostal vein crossed anterior to the thoracic sympathetic chain at the level of the 3rd intercostal space on the right side were observed and photographed.

Discussion: During sympathectomy, posterior intercostal veins passing anteriorly to the sympathetic trunk are not commonly noticed, but if persistent, the prevalence of bleeding is greater. In the present case report, a large-sized posterior intercostal vein crossed the sympathetic trunk anteriorly at the level of the 3rd intercostal space on the right side. Surgical procedures of the sympathetic ganglia may have increased risks due to this large anterior crossing of posterior intercostal veins, specifically at the level of the 3rd and 4th intercostal spaces.

Conclusion: The laceration of the posterior intercostal vein is the potential cause of bleeding in surgeons operating in the region of the thorax. It is essential to be aware of the anatomical variation in the 3rd and 4th intercostal spaces on the right side to prevent accidental injury to the intercostal vein.

Abstract-130

Genotoxic Effects of Calcium Carbide (CaC_2) and Ethylene Glycol (EG) on Kidney and Liver Tissues of Wistar Rats by Comet Assay

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Introduction: Chemicals like CaC2 and EG are used extensively for ripening fruits artificially. It is evident that such chemicals deposit heavy metals in the skin of the fruits, which are toxic to the internal organs. But the genotoxic effect of these chemicals is not studied.

Aims: To evaluate the CaC2 and EG induced genotoxicity on liver and kidney tissues of Wistar albino rats using Comet Assay.

Materials and methods: Three groups of male wistar albino rats were used for this study. The experimental group of rats was exposed to CaC2 and EG for 180 days. Tissue samples of liver and kidney were collected at the end of the experiment and Comet assay was performed to evaluate the DNA damage. Comet parameters were calculated using Cometscore®software.

Results: After 180 days of chronic exposure to CaC2 and EG the liver and kidney tissues of male Wistar albino rats showed significant DNA damage, in comparison with the control group. CaC2 exposure showed more damage than EG in both organs as evident from a high level of the tail moment of comets, while EG produces more damage in the Kidney compared to the liver.

Conclusion: Study indicate that both CaC2 and EG are capable of inducing high-level DNA instability in the form of DNA strand breaks. They have the potential to generate genomic instability which could lead to carcinogenic events, with long-term exposure: which suggests the need for strict policies against the use of CaC2 and EG in artificial fruit ripening.

Abstract-131

Morphometric Analysis of Cervical Canal in Patient of Neck Pain by CT Scan in North Indian

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Introduction: Cervical spinal stenosis and facet joint arthrosis is a common disease that results in considerable morbidity and disability. The bodies of the cervical vertebrae are smaller in size compared with (thoracic, lumber) those of other vertebrae.

Aim: To assess the prevalence of cervical canal stenosis and facet joint arthrosis in patients presenting with neck pain and its correlation with age, gender, cervical spinal levels (C3 to C7) by CT scan. To estimate the prevalence of cervical canal stenosis and facet joint arthrosis in patients presenting with neck pain by CT scan.

Material and Methods: This is a case control prospective study conducted at Santosh Medical College, Ghaziabad and Mayo Institute of Medical Sciences, Barabanki, Uttar Pradesh. A case-control study is designed to help determine if an exposure is associated with an outcome. Hospital based case-control study – cases and control are patient who are hospitalized or outpatients.

Result: In our study at the level of C3 (25.00±1.13) the Transverse vertebral canal diameter (T-VC) lowest and the increases gradually at the level of C6 (25.18±1.14). In our study, mean torg ratio of cervical vertebrae C3-C4 gradual decreases from C3 (0.78±0.05) to C7 (0.76±0.05). Mean distance of spinal canal to transverse foramens was found to be greater for males than for females.

Conclusion: The facet joints are the articulations of the posterior arch of the vertebrae. They are an important part of the posterior column and provide structural stability to the vertebral column. These joints are surrounded with a fibrous capsule and connect the superior and interior articular facets of the vertebrae.

Abstract-132

Identification of Antidiabetic Activity of Bioactive Compounds from *Carica papaya* through Molecular Docking Approach

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Introduction: In the coming decade, the global diabetes epidemic will increase the demand for innovative diabetic medicines. The metabolic disorders lead to complications like neuropathy, retinopathy, nephropathy due to increased oxidative stress, and drugs for diabetes have inevitable side effects with prolonged less sensitivity to this complex condition. Carica papaya reduces oxidative stress to restore β cell mass and structure in diabetic rats.

Aim:1. To assess the anti-diabetic bioactive compounds from C.papaya by molecular docking.2.To analyze if C.papaya has a good ligand for diabetic target proteins.3.To determine the best bioactive compound with highest binding energy value and interaction of competitive inhibition.

Materials and methods: Insulin receptor, IRS, AKT atomic coordinates were retrieved from RCSB PDB database. GLUT4 structure was modelled using Swiss modeler. 2Dstructure of C.papaya compounds retrieved from the pubchem database. Auto Dock (V.4.0) was used in the PyRx Interface to validate the binding capabilities of the interactions between ligands and selected target proteins.

Results: The eight antidiabetic bioactive compounds were assessed and their binding energies made C.papaya an effective ligand for diabetes target proteins. The active protein site amino acids were known, and RMSD values less than 1.0Å were considered optimum. The ability of a bioactive compound to create a hydrogen bond determines its competitive inhibition interaction, which was highest in Rutin.

Conclusion: C. papaya can be an alternative to synthetic drugs and rutin has the capacity to act as antidiabetic agents.

Abstract-133

Antioxidant Properties of *Eichhornia crassipes* Extract on CAT Gene Expression in HEK Cell Lines

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Introduction: Oxidative stress plays a major role in the development of many diseases including cancers. CAT gene encodes catalase, a key antioxidant enzyme in the bodies defence against oxidative stress. Conventional anti-cancer drugs have serious side effects and hence there is a high demand for an alternate therapy utilising natural sources. In the present study the antioxidative property of methanolic extract of Eichhornia crassipes plant has been analysed in human HEK cell line.

Materials and Methods: E. crassipes were collected from Ernakulam, kerala. The methanolic extract of petioles of the plant were prepared as per the standardised method. The human cell line (HEK) was obtained from National Centre for Cell Science, Pune, Maharashtra. The HEK cell lines were exposed to different concentrations of the E. crassipes methanolic extract. Antioxidant property of the plant was analysed using ABTS, DPPH radical scavenging assay, total anti-oxidant activity and reducing power assay. CAT gene expression was analysed through RT-PCR.

Result : Biochemical assays and CAT gene expression study of E. crassipes in HEK cell lines revealed that, as the concentrations of drug increase there is a proportionate expression of antioxidant gene.

Conclusion: This study revealed that the methanolic extract of E. crassipes has antioxidant activity

Abstract-134

Transcriptional Analysis of Atrial Appendages in Patients with Structural Heart Disease in Telangana Population

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Introduction: The Atrial Appendages (AA) are small, ear-shaped sac in the muscle wall of the atrium. Structural heart disease refers to non-coronary cardiovascular diseases and is a problem with the tissues or valves of the heart.

Aim: Transcriptional analysis of AA in patients with structural heart disease in Telangana Population. Objectives: (1) To determine genetic information which discriminate between control and cases with pathologically altered atrial appendage tissue samples by using RT-PCR cDNA microarray method.

Materials & methods: Type of study: Case Control study.

Patients enrolled in CVTS Department of Virinchi Hospital, Hyderabad were enrolled.

Study participants: Informed consent was obtained. Case/Group 1:- 50 patients, (31 male,19 female with age from 35-70 years) with structural heart disease with AF history. Control/Group 2: - 50 patients, (43 male, seven female, age between 35 to 70 years)) with structural heart disease without AF history. Inclusion criteria was consented to participate in the study. Exclusion criteria: 1) Do not give informed consent 2) Idiopathic Ventricular Tachycardia (Non structural heart disease). RNA isolation, RTPCR and cDNA microarray analysis done as per standard protocol of laboratory.

Results: Genes with altered expressions observed.

Conclusion: By Identifying the functional importance of genes in the development of structural heart disease with or without Atrial Fibrillation (AF) is important, so we can understand molecular mechanism and identify new therapeutic strategies.

Abstract-135

A Study on the Incidence and Morphometry of Interparietal Bone in Adult Human Skulls

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Introduction: Interparietal bones are accessory bones in the occipital region of human skull. As independent bones they always lie above the highest nuchal line, separated from the rest of the occipital bone by transverse occipital suture or mendosal suture. Occurrence of this bones are rare compared to the occurrence of sutural bones in this region. The human skull consists of two parts- neurocranium and viscerocranium. Of the neurocranial bones, the occipital bone forms much of the back and base of cranium. It has four-parts- a squamosal part, a basilar part and two condylar parts.

Aims & Objectives: To study the incidence of ocurrence of interparietal bones in human skull. To determine as to whether they are single, bipartite, tripartite or multipartite along with their size and position.

Materials: Fifty dried intact adult human skull were examined in this study. The study samples were procured from the Department of Anatomy, Government T.D. Medical College, Alappuzha. They were closely inspected for the presence and number of fragments.

Results: The incidence of interparietal bones was found to be 6%. The interparietal bone frequently occurred singly. Out of 50 skull bones studied, 3 bones showed presence of interparietal bones. Out of three, one was fragmented and other two were single.

Conclusions: The result obtained gives information regarding the occurrence of interparietal bones in the human skull and about their number, size, and position. The knowledge of their presence is of great significance to neurosurgeons, radiologists, anthropologists and anatomists.

Abstract-136

Radiological Assessment of Proximal Femur Geometry using Dicom

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Introduction: Proximal Femoral Geometry is subjected to wide range of ethnic variations. The geometry of the proximal femur in the Indian population considerably differ from the European and American standard. Currently, arthroplasty components widely used are based on western standards. The present study analyzes the proximal femur anthropometry in the South Indian population and aid in development of hip arthroplasty for the Indian population.

Aim: The primary objective of the study is to measure proximal femoral geometry and compare the difference with various ethnic groups.

Materials and methods: The study was conducted in 412 non - pathological hip joint CT Scans collected from the Southern Indian population. Measurements like femoral head diameter, neck width, neck shaft angle, femoral offset and medullar canal diameter are calculated using DICOM.

Result: The mean femoral head diameter 40.3 mm, neck width 27.3 mm, neck shaft angle 130.1°, horizontal offset 33.8 mm, 43.3 mm, apex of LT 20.3 mm, 20 mm below LT 15.2 and isthmus of the shaft 10.2 mm.

Conclusion: The present study of the proximal femur in the south Indian population considerably differs from the dimensions of the Western ethnic population, this may due to Indians by physical parameters way smaller than the western population. Moreover, genetic variation, poor nutrition, vitamin D deficiency may also one the reason, the geometry of proximal femur smaller than the other population. Hence, the study will help in understanding the geometry of proximal femur and also aid in development of proximal femoral arthroplasty components suitable for the Indian population.

Abstract-137

Prevalence of Hip Dysplasia in Asymptomatic Patients using Computed Tomography Scan in Indian Population

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Introduction: The incidence of acetabular dysplasia is 1-10% worldwide. Several anthropometry studies analysing the details of the acetabulum and the proximal femur geometry using dry bones, X rays, but the results are inconsistence. The present study evaluates the acetabular geometry using CT, DICOM scan to determine the prevalence of acetabular dysplasia in the Indian population and also determines the acetabular parameters of both sexes.

Aim: The aim was to analyze the prevalence of hip dysplasia in asymptomatic patients in the Indian population and to establish the geometry of acetabulum.

Materials and Methods: Authors have measured the 200 asymptomatic patients with Computed tomography scan, DICOM assistance. A total of four measurements were made are center edge angle, angle of sharp, depth to width ratio, and tonnis angle.

Results: The mean center edge angle angle was 30.7º, angle of sharp 37.6º, depth to width ratio 0.33, and tonnis angle 8.1º. Total of 16.5% (33) patients were found to be of hip dysplasia when measured with the center edge angle < 20º. The prevalence of hip dysplasia in male was 9% in center edge angle, 7% in the angle of sharp, 9% in depth to width ratio and 6% in tonnis angle. While for female it was maximum reported in hip dysplasia 14% center edge angle, 12% angle of sharp, 10% depth to width ratio, 10% Tonnis angle.

Conclusion: The incidence of hip dysplasia was reported more in female 14% than the male. The study results show a higher rate of hip dysplasia in Indian ethnicity 16.5% than compared to the other populations like Norwegian, Nigerian population reported 3.3% and 3.8% in British population. The study also provides data on acetabular geometry of both sexes which will aid in thedesign and development of arthroplasty components.

Abstract-138

A Study on the Morphology of Renal Artery by Multidetector Computerized Tomography in Western UP Population

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Introduction: Kidney the main organ of excretory system, is supplied by a single renal artery, emerging from the Abdominal Aorta at the level of a disc between L1 and L2.

Aim: To evaluate the morphology of renal artery and its variations of the subjects from the Western UP population by MDCT.

Materials and Method: The present study was conceptualized in the Department of Anatomy, in collaboration with the Department of Radiodiagnosis, Santosh Medical College and Hospital, Ghaziabad and from nearby Diagnostic centres in the NCR. This study was performed on the 108 patients who presented to the Radiology Department for abdominal CECT examination with suspected abdominal pathologies. MDCT scan images of abdomen were reviewed for normal anatomy of renal artery and their variants. A proper ethical clearance was obtained from the ethical committee of the Institute.

Result: Out of 108 patients assessed, 66 were males and 42 were females. Variations of renal artery were found in 56 patients(51.85%). Out of these 56 patients, 47 had supplementary renal artery, 17 had early branching of renal artery and 8 patients had both supplementary and early branching of renal artery. Supplementary renal arteries were seen in 15 patients on right side,16 patients on left side and in 16 patients bilaterally. Earlier branching of renal artery was found in 9 patients on right side, 10 patients on left side and in 2 patients bilaterally.

Conclusion: Variations of renal artery are found frequently. Awareness of the anatomical variations of the renal artery is very important for selecting kidney donors, guiding the radiologist during arterial catheterization and designing arterial stent graft and for the surgeon who place such a stent.

Keywords: Renal artery (RA), Supplementary Renal artery (SRA), Early branching (EB), Multidetector Computerized Tomography (MDCT).

Abstract-139

Morphological Variations in Menisci of Knee with its Clinical Significance: A Human Cadaveric Study

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Introduction: Menisci are fibro cartilaginous discs present in between femur and tibia in knee joint. These are important functional units to improve joint congruence, load distribution and reduces the stress on knee joint. Its function is considered primordial to protect the articular cartilage and to prevent osteoarthritis.

Aims: Present study was aims to observe and estimate the different shapes of medial and lateral menisci of knee in cadavers.

Materials and methods: A direct observational study was carried out. Total ninety (45 right and 45 left) knee joints were dissected from the previously formalin fixed embalmed cadavers including both sexes to observe the incidence of anatomical and morphological variations in the different shapes of menisci of knee. Data found were photographed, recorded and analyzed.

Results: Incidence of different shapes of Medial meniscus was observed crescent shaped, sickle shaped, C-shaped, sided U shape and Sided V shape in total 66 (73.33%), 17 (18.88%), 4 (4.33%), 3 (3.33%) and nil respectively. Incidence of different shapes of lateral meniscus was observed C-shaped, discoid (circular) shaped and V shaped in total 86 (95.55%), 4 (4.44%) and nil (0.00%) respectively.

Conclusion: The present study will aid the literature in meniscal anatomy and related surgical procedures. Variations in the form of different shapes of menisci have determined the different mechanisms of injury and incidence of meniscal tears. Furthermore knowledge can be useful to the orthopedic surgeon, general surgeon, radiologist and physical therapist in various knee surgeries like in meniscal transplantation and in sports medicine.

Abstract-140

Antioxidant and Hepatoprotective Effect of Premna Tomentosa Leaf Extract on Alcohol Induced Toxicity- An Histological Study

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Introduction: Chronic alcohol consumption has long been recognised as a risk factor for liver disease, which is a prominent cause of morbidity and mortality all around world. The results revealed that ethanolic leaf extract of Premna tomentosa could be beneficial and prevent deterioration for liver disease in the present study.

Aim: To investigate the protective effect of Premna tomentosa leaf extract against alcohol-mediate hepatotoxicity rats.

Materials and methods: Adult male Wister albino rats were used to test the protective effect of Premna tomentosa ethanolic extract at doses of 500 mg and 750 mg/kg/day orally against alcohol-mediated hepatotoxicity for 60 days. Premna tomentosa's protective effect was compared to Liv 52 at the recommended dose (1 mL/100 gm) orally. To determine the protective efficacy of Premna tomentosa extract, serum liver markers, liver antioxidant enzyme activity, and a histological study of the liver were estimated.

Results: Alanine Aminotransferase (ALT), Aspartate Aminotransferase (AST), Alkaline Phosphatase (ALP), and Total Bilirubin Levels (TB)were significantly elevated ($p<0.05$) after chronic administration of alcohol at (40 % v/v, 1ml/100g) for 6 weeks. In comparison to control rats, catalase, glutathione peroxidase, and superoxide dismutase levels were significantly lower ($p<0.05$).Pre-treatment of rats with 500, 750 mg/kg body weight of ethanolic leaf extract of Premna tomentosa or 1 ml/100g Liv 52 resulted in a significant ($p<0.05$) decrease in ALT, AST, ALP, and TB, as well as a significant ($p<0.05$) increase in catalase, glutathione peroxidase, and superoxide dismutase levels. Histopathology of rat livers administered alcohol revealed severe necrosis, mononuclear cell aggregation, and fatty degeneration in the central and mid zonal areas, all of which are indicators of liver damage. Pre-treatment with an ethanolic leaf extract of Premna tomentosa or Liv 52 reduced the morphological alterations caused by chronic alcohol consumption.

Conclusion: In comparison to Liv 52, Premna tomentosa extract showed hepatoprotective and antioxidant activity in alcohol-mediate hepatotoxicity rats.

Abstract-141

Phytochemical Constituents Isolated from Leaves of *Boerhaavia diffusa*

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Introduction: It is commonly known as "Punarnava" in Indian system of medicine. It is used in siddha and ayurveda in traditional medicine. Various parts of Boerhaviadiffusa is used as herbal throughout the world. It was given to cure the diseases like heart problems, kidney stones, diuretic, erectile dysfunction, to increase the sperm count, gonorrhea, tumors, ulcers and cancer.

Aims: To determine the various bioactive compounds in various parts of Boerhaviadiffusa and isolate an efficient compound.

Materials and methods: Using different types of alcoholic solvents phytochemical and GC-MS analysis was done. Graphs are prepared of log r against boiling point or log r on one stationary phase against log r on another stationary phase.

Results: Many bioactive compounds like flavonoids, phenolic compounds, tannins, alkaloids, terpenoids, xanthones, glycosides, steroids, terpenoids and phenolic compounds are identified.

Conclusion: The identified compounds have the capacity to cure various ailments and scientifically can be advised, without side effects in healthcare settings.

Abstract-142

Assessment of Micro-RNA 145 and Micro-RNA 155 as Markers for Vascular Calcification in Chronic Kidney Disease

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Introduction: Chronic kidney disease is a condition in which kidney structures deteriorates and cause a progressive decline of renal function over time. The main consequence in CKD is vascular calcification. Endothelial dysfunction is at the core of cardiovascular disorders, resulting in the disintegration of the vascular edifice.

Aims: Authors aimed to compare the biomarkers of endothelial dysfunction, 25-hydroxy vitamin D, iPTH, miRNA155 and miRNA145 in patients with CKD with controls.

Material and methods: Sixty patients with CKD and sixty controls were recruited. All the study subjects underwent brachial artery FMD to measure endothelial function. Assay of ADMA was done by ELISA and miRNA145 and miRNA155 were assayed by qPCR.

Results: miRNA145, miRNA155, 25-hydroxy vitamin D and FMD levels were significantly lower in CKD than controls, whilst ADMA and iPTH were substantially higher in cases than controls. miRNA145, miRNA155, FMD and 25-hydroxy vitamin D were found to have a significant negative association with ADMA, while they had a significant positive correlation with each other. miRNA145, miRNA155, 25-hydroxy vitamin D and FMD were found to have a significant positive correlation with eGFR.

Conclusion: Endothelial dysfunction increases with increase in disease severity in CKD, indicating an accelerated risk for CVD and decrease in miRNA145 and miRNA155 levels indicate VSMC proliferation and vascular calcification. Since, endothelial dysfunction and miRNA levels are important factors in the progression of atherosclerosis, they may be used to anticipate future atherosclerotic events in patients with chronic kidney disease.

Abstract-143

Evaluation of Thyroid Dysfunction in Metabolic Syndrome Patients in a Tertiary Care Hospital of North Coastal Andhra Population

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Introduction: Metabolic syndrome is a prevalent non-communicable disease in the present era. It manifests as obesity, impaired fasting blood glucose, dyslipidaemia, and hypertension. Hypothyroidism causes hypertension, dyslipidaemia, and impaired carbohydrate metabolism, which are all components of metabolic syndrome.

Aim: A Study on evaluation of thyroid dysfunction in metabolic syndrome patients in a tertiary care hospital of north coastal Andhra population. To assess the thyroid status of the individuals with metabolic syndrome and to examine the impact of thyroid dysfunction on cardiovascular risk in metabolic syndrome subjects.

Materials and Methods: The study included 100 metabolic syndrome patients attending the General Medicine out Patient Department of GVP Medical College, Visakhapatnam, Andhra Pradesh, Metabolic syndrome was defined by NCEP ATP III criteria. Thyroid profile was measured using ELISA method.

Results: In a total of 100 patients with metabolic syndrome, 34 were male (34%) and 66 were female (66%). The mean age of the study population was 39.78 ± 15.64 years. Patients with metabolic syndrome and hypothyroid were found to have significantly elevated levels of total cholesterol, triacylglycerols, low density lipoprotein cholesterol level and significantly reduced high density lipoproteins cholesterol levels when compared with healthy controls.

Conclusions: Hypothyroidism and subclinical hypothyroidism cause cardiovascular manifestations along with metabolic changes. Investigating the thyroid function status may be considered as a part of screening in patients with metabolic syndrome.

Abstract-144

To Study of Thyroid Profile with Anti-TPO, Iron and Uric Acid Levels in Patients of Melasma

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Introduction: Thyroid disorders are the most common systemic disease associated with melasma. Thyroid imbalances have a probable effect on the onset of melasma. Melasma, also called 'chloasma', is a common skin condition of adults. Melasma is an acquired pigmentary disorder described as symmetrical blotchy or splotchy hyperpigmented macules and patches.

Materials and Methods: It is a case-control observational study100 cases (76 females and 25 males) that were diagnosed with melasma are included to investigate thyroid profile, anti-TPO, with iron, uric acid levels are compared to control 100 subjects.

Results: Serum TSH levels were found to be higher in patients of melasma (5.1±2.53) as compared to the control population (2.59±2.66). Serum anti-TPO level was higher in (11±3.01) the patients and (9±1.46) in the controls. Serum Iron levels in cases and controls showed lower levels in patients of melasma (85±31.2) as compared to the control population (114.5±25.9) all they significant ($p<0.001$). Mean serum T3(1.35±0.621) and FT3 (2.71±0.57) were normal in the case than compared the control T3 (1.48±0.76), FT3 (2.82±0.54) group respectively. Serum T4(6.7±1.92) were higher in the case group than the control group (6.54±1.80) but all this statistical not significant. Uric acid (3.57±0.79) and FT4(1.32±0.52) were higher in the case group than the control group (3.4±0.75), (1.22±0.48) respectively but the difference was not statistically significant.

Conclusion: Thyroid profile was lower in the patients than compared to the controls but the difference was not statistically significant. Mean serum anti-TPO, FT4, and TSH, and uric acid were higher in the case group than in the control group. A possible relationship might be observed between thyroid autoimmunity and serum Iron levels in melasma.

Keywords: Melasma, TSH thyroid-stimulating hormone, T3 Triiodothyronine, T4 thyroxine, FT3 free triiodothyronine, Free thyroxine FT4, Anti-thyroid Peroxidase, serum iron, uric acid.

Abstract-145

Exploring the Knowledge, Attitude and Practice Regarding Hepatitis B Infection among Dental Students in South Region of Kerala-Survey

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Introduction: Hepatitis is a broad term that means inflammation of liver.10 million cases occur worldwide, in this 5% of health-care-related injections continued unsafe. Dentist considers being at high-risk group for cross infection. Therefore, their knowledge and practice towards Hepatitis B virus (HBV) positive patients should be at an optimal level.

Materials and Methods: Survey study aimed to evaluate knowledge, attitude and practice regarding spread, risk factors, diagnosis and treatment of Hepatitis B was undertaken amongst 356 undergraduate and 16 postgraduate dental students using a validated questionnaire taken from PubMed. Chi-square test, and one-way ANOVA were used to assess differences between the groups.

Results: The results showed that the majority of the students in the study population (61.6%) were female. 63%of the respondents had an above average level of knowledge and the majority of the respondents had a favourable attitude towards HBV preventive measures. 30% of the participants had inaccurate concepts about post exposure prophylaxis to HBV infection. Chi-square test report was found that there was a positive correlation of knowledge and practices of the students ($p=0.013$), implying that better knowledge of the disease has a positive effect on the practices exercised by an individual.

Conclusion: The overall knowledge was average, continuous health education courses are mandatory.

Abstract-146

A Biochemical Analysis of Patients with COVID-19 Infection with and without Type II Diabetes Mellitus

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Introduction: The Coronavirus Disease 2019 (COVID-19) epidemic is caused by SARS-CoV-2, a recently discovered virus that causes severe acute respiratory syndrome. Influenza-related mortality poses an important risk factor for COVID-19, and comorbidity with diabetes is another important factor.

Aim: The present study evaluated the biochemical features of COVID-19 positive patients with and without diabetes mellitus was admitted in DMWIMS Hospital Wayanad, Kerala state.

Materials and Methods: Demographic, clinical, laboratory, treatments, complications, and clinical outcomes data of 194 patients were extracted from hospital management software and compared between diabetes (n=64) and non-diabetes (n=130) groups. The biochemical parameters such as D-Dimer, CRP, HbA1C, serum Potassium and albumin values were obtained from the Laboratory management software -medical records of the patients were analysed.

Results: Compared with non-diabetic patients, diabetic patients had higher levels of S. Potassium (p=.014), C-reactive protein (p=.008), HbA1C (p<.01), and D-dimer (p=.033), and lower levels albumin (p=.035).

Conclusion: COVID-19 is associated with diabetes as an independent risk factor. Diabetes patients, especially those who require insulin therapy, need more attention when it comes to prevention and treatment.

Abstract-147

Utility of eGFR in Comparison to Measured Creatinine Clearance in Evaluation of Chronic Kidney Disease in Tertiary Care Hospital

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Introduction: A proper measurement of renal function is required for diagnosis and stratification of kidney disease. GFR is considered the best overall measurement of kidney function and for diagnosis, treatment of patients with CKD. Measuring eGFR is time consuming and therefore GFR is calculated from certain equations that take into account endogenous markers like SCr.

Aim: Utility of eGFR in comparison to measured creatinine clearance in evaluation of chronic kidney disease in tertiary care hospital. This study examined the accuracy of creatinine based estimates (CrCl, and CG formula) of GFR in our study subjects.

Materials and Methods: 60 inpatients (30 men and 30 women) of GVP hospital and 40 controls were enrolled in the study. SCr and 24 hr urine creatinine are estimated from all by taking a blood sample and the same day 24 hr urine collection. SCr is estimated by Kinetic Jaffe's method in auto analyser on serum and urine. eGFR calculated by CG formula using the SCr value. We evaluated the correlation between measured CrCl derived from 24-hr urine collection and calculated /predicted Crcl by using the CG equations.

Results: A Positive correlation was observed between eGFR and CG GFR in case and control groups.

Conclusion: In CG formula measured GFR can be used. Instead of laborious, cumbersome estimation of Crcl by 24 hrs urine and SCr estimations for the same purpose and of high clinical utility.

Abstract-148

Antagonistic Relationship of Fetuin-A and Adiponectin in Obese Type 2 Diabetes Mellitus

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Introduction: Fetuin-A and adiponectin display noteworthy affiliations, bolstered by recent prove, with metabolic disorder, obese type 2 diabetes including hyperglycemia, central weight and insulin resistance as the most components, but their natural capacities are inverse. The point of this consider was to confirm the role of fetuin-A and adiponectin are the important marker for assessment of obese type 2 diabetes.

Materials and Methods: In this analytical cross-sectional study, 100 controls and patients were chosen from the physical /biochemical examination database. Serum levels of fetuin-A and adiponectin were measured utilizing an enzyme-linked immunosorbent measure (ELISA) method. The Statistical software namely SAS 9.2, SPSS 15.0, Stata10.1, MedCalc 9.0.1 , Systat 12.0 and R environment ver. 2.11.1 were used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc.

Result: Our result shows (higher level) of fetuin-A and (lower level) of adiponectin was significantly associated with obese type 2 diabetes mellitus ($p<0.05$).

Conclusions: Fetuin-A or adiponectin are antagonistic linked with each other in obese type 2 diabetes mellitus.

Abstract-149

Evaluation of Calcium and Phosphorus in Patients with Rheumatoid Arthritis

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Introduction: Rheumatoid arthritis (RA) is a chronic progressive inflammatory disease with autoimmune pathogenesis, characterized by joint involvements and multiple systemic manifestations. Several laboratory tests are sensitive and specific for RA and they can be useful for early diagnosis and intervention. Calcium and Phosphorus might be factors relevant with RA.

Aims: To evaluate serum Calcium and Phosphorus levels in patients with RA.

Materials and methods: Total 30 diagnosed cases of RA and 30 healthy individuals as controls are included in this study according to inclusion and exclusion criteria. The study was conducted in Department of Biochemistry in association with Department of Medicine, Mahatma Gandhi Medical College and Hospital, Sitapura, Jaipur.

Results: The mean±SD value of serum calcium levels in cases (8.71±0.34 mg/dL) as compared to control (9.07±0.33 mg/dL) are significantly lower with p value <0.001 while the mean±SD value of serum phosphorus levels in cases (4.95±0.82 mg/dL) as compared to control (4.03±1.39 mg/dL) are significantly higher with p value 0.005. p value less than 0.05 is considered statistically significant.

Conclusion: The present study shows lower serum calcium and higher serum phosphorus levels in patients with RA.

Abstract-150

Effect of Type 2 Diabetes on Serum Electrolyte Profile and Renal Function Indices

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Introduction: Imbalance in electrolyte distribution shows the modifiable affects in the course of diabetes and its management. Vascular complication of diabetes effecting the major organ, kidney which regulates water and electrolytes.

Aim: This study investigated the electrolytes disturbance and their association with glycemic status along with renal function indices in T2DM subjects.

Materials and methods: This study involving 70 participants who were diagnosed with T2DM between the age group 35 to 65 years were recruited. A control group consisting of 80 healthy subjects (HC) were included. Serum electrolytes Sodium (Na+), Potassium (K+) and Chloride (Cl-)ions along with creatinine and urea as traditional laboratory renal function indices were measured. Estimated Glomerular filtration rate (eGFR) was calculated using CKD-EPI equation. Glycated Haemoglobin was measured by immunoturbidimetric method using high-performance liquid chromatography. Descriptive statistics was expressed as mean & SD. Pearson's correlation test was performed.

Results: In T2DM, a decrease in serum sodium and chloride levels were observed to be statistically highly significant ($p<0.001$) while that of potassium showed insignificant alterations. There were significantly greater number of hyponatremia (41.42%), hypochloraemia (5.72%) observed in T2DM ($p<0.01$). In linear regression analysis, serum sodium was negatively correlated with HbA1C ($r=-0.63$, $p<0.001$). We have not found any correlation between serum electrolytes and renal function indices.

Conclusion: T2DM was found to promote electrolyte imbalance particularly in sodium and chloride and may affect renal function and it was correlated with glycemic status. Therefore, serum electrolytes should be routinely measured in patients with T2DM even with normal serum creatinine.

Abstract-151

Evaluation of Serum Electrolyte Levels in Patients of Lung Carcinoma

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Introduction: Lung carcinoma is the leading cause of death worldwide and it occurs more commonly in males as compare to females. Disturbance in electrolytes is often associated with cancer patients. Electrolyte imbalances can be associated with lung carcinoma patients and it can be due to many causes.

Aims: To evaluate the levels of serum electrolyte (sodium, potassium and chloride) among patients of lung carcinoma and control group.

Materials and Methods: 150 lung carcinoma patients and 150 healthy individuals fulfilling inclusion criteria of study were enrolled in study. Serum electrolytes levels were estimated and results obtained were presented as mean ± SD and subjected to statistical evaluation. A p-value of ≤0.05 was significant.

Results: Mean age of the study group and control group was comparable. Mean serum sodium levels among subject group were 136.22 ± 3.25 and control group was 139.93±3.79. Mean values for serum potassium among cancer patients was 3.37±0.44 and control group was 4.31±0.67 and for serum chloride it is 98.90±5.70 among lung cancer patients and 102.59±3.48 among controls. The above electrolytes were statistically significant ($P\leq0.0001$). Significantly lower levels among lung cancer patients as compared to controls were found.

Conclusion: Study showed reduced level of electrolytes among the enrolled lung carcinoma patients as compared to control group. Electrolyte imbalance is one among the complications of lung carcinoma and its treatment. Early detection and timely correction of electrolyte imbalance may help in improving patient's short-term outcome and quality of life.

Abstract-152

Evaluation of Mineral Profile in Patients of Polycystic Ovary Syndrome

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Introduction: Polycystic ovary syndrome (PCOS) is a complex condition characterized by elevated levels of androgens, menstrual irregularities, or small cysts on one or both ovaries. Identification of the actual biochemical derangement may be helpful in treatment of the particular disorder and over all in improving the quality of life.

Aims: The present study was planned to assess mineral profile (serum calcium, phosphorus, magnesium) in PCOS patients as compared to healthy subjects.

Materials and Methods: A total of 54 females suffering from PCOS, age between 18-45 years, and 50 age matched healthy control were enrolled for the study. Women who are on drugs or hormone therapy were excluded from the study. Above mineral profile was evaluated and results were represented as mean±SD.

Results: Mean level of serum calcium among PCOS females was 8.23±1.55 and among control group was 9.28±0.63. Mean value of serum phosphorus among PCOS females was 5.43±1.64 and among control group 4.03±0.60. Mean levels of serum magnesium in PCOS females was 2.33±0.82and in control group 1.75±0.35. All the three above minerals were statistically significant ($p \leq 0.0001$). Serum calcium levels were found to be decreased among PCOS females as compared to the control group while serum phosphorus and serum magnesium levels were raised among PCOS females comparatively to the control group.

Conclusion: The study indicates a relation between above minerals profile in PCOS females. Imbalance of these minerals may lead to other manifestations like muscle pain, nausea, and other long term implications. Evaluation of these minerals may help in providing optimal treatment and relieving the misery of female suffering from PCOS.

Abstract-153

Evaluation of Serum Carcinoembryonic Antigen in Head and Neck Carcinoma Patients

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Introduction: Cancer is a crucial health problem and one of the primary causes of death globally. Among all the cancers, malignancies of the head and neck region are among the top five leading cancer sites in India. Carcinoembryonic antigen (CEA), which belongs to a family of related cell surface glycoprotein's, is the most often utilized tumor marker in the clinical practice. It is a tumor marker for colorectal, gastrointestinal, lung, head and neck, and breast cancer.

Aims: The present study was planned to evaluate the levels of CEA in patients with head and neck carcinoma.

Material and Methods: In the present case control study, serum CEA was determined in 50 head and neck cancer patients and 50 age matched healthy individuals were taken as control. Diagnosed cases of head and neck cancer age above 18 years were included and patients on chemotherapy and radiotherapy and patients after surgery were excluded from the study.

Results: On comparing serum CEA levels with control group, a significant increase in serum CEA levels was noted in cases (2.70±1.71) ng/mL when compared with control group (1.90±0.57) ng/mL.

Conclusion: Cancer associated marker of primary concern as it challenges of treatment protocol. So, evaluation of CEA at an early stage of cancer can be helpful in predicting its prognosis and hence guide the treatment protocol. Inflammation related parameters are used to improve cancer prognosis predictions.

Abstract-154

Effect of Body Mass Index and Body Fat Percentage on Cardio-respiratory Fitness in Healthy Young Adults

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Introduction: Cardio-respiratory fitness is a powerful predictor of all causes of cardiovascular disease and resultant mortality. Maximum oxygen consumption is the internationally accepted parameter to evaluate cardio-respiratory fitness. VO2 max is affected by many factors one among them is obesity. Increase in Body Mass Index (BMI) and body fat percentage leads to obesity. To compare the previous studies there are no such type of study available in Indian population which entail the association of BMI and body fat percentage with cardio-respiratory fitness in healthy young adults.

Aim & objectives: To determine VO2max in healthy young adults and to find its correlation with BMI and Body Fat %.

Material & methods: A total of 419 apparently healthy students (male & female) recruited from RUHS-College of Medical Sciences, Jaipur. BMI is calculated as weight (kg)/height(m2). Their skin fold thickness was measured using Herpenden skin fold caliper and body fat % estimated according to chart based on Durnin and Womersley data. Their VO2 max was measured using direct method (sub-maximal exercise test on treadmill) with the help of AD Instrument's Gas analyzer (model-ML206) using gas analyzer. Data collected was then entered in Microsoft –Excel and Karl Pearson's Correlation coefficient was used for statistical analysis.

Results: The mean value of BMI in male subjects was 21.94±2.99 kg/m^2 and for female was 21.21±3.09 kg/m^2. The mean value of body fat % in male was 14.51±4.74% and for female was 22.82±6.87. The mean value of VO2 max in male was 42.01±8.11 mL/kg/min and for female subjects was 35.71±5.29 mL/kg/min. A negative correlation was observed between BMI and VO2 max (r=-0.092, p=0.059). A Significant negative correlation (r=-0.366, p=0.001) was found between body fat % and VO2 max. There was higher correlation coefficient of body fat % and VO2 max compared to that of BMI and VO2 max.

Conclusion: Increased BMI and body fat is associated with decreased level of VO2max in healthy young adults. Obesity in terms of fat% is a better parameter than BMI for prediction of low VO2max. Body Mass Index does not always accurately indicate body fat % because it does not differentiate fat free mass from fat mass.

Abstract-155

Prevalence of Depression, Anxiety and Stress among Health Care Students at the Time of COVID-19: An Online Cross-sectional Study

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Introduction: Health care students have baseline elevated rates of anxiety, depression and burnout. However, not much is known regarding COVID-19's psychological impact on home-confined medical & nursing students.

Aims: This study aimed at assessing the prevalence of stress, anxiety and depression among health care students in Erode district, Tamilnadu during lockdown due to the outbreak of COVID-19.

Materials and Methods: This descriptive cross-sectional study was conducted via an online survey completed by students studying an MBBS and a Nursing degree in Erode district, Tamilnadu. The validated previously published Depression, Anxiety and Stress Scale (DASS-21) questionnaire was used as a part of the online survey to assess students' stress, anxiety and depression scores. The data were evaluated using descriptive statistics, the Mann-Whitney U test, and the Kruskal-Wallis test.

Results: A total of 273 health care students (males: 29.3%, females: 70.7%) completed the survey. 50.9% of students are MBBS students, and 49.1% are nursing students. From those surveyed, the prevalence of depression, anxiety, and stress in different levels was 40.3% (110), 41.4% (113), and 30% (82), respectively, which are higher during lockdown. Mean depression (10.25 vs 7.75, p=0.05), anxiety (8.53 vs 6.6, p=0.05) and stress (11.76 vs 9.30, p=0.05) scores were higher among females than males. Final year students are having more depression (F=10.37, p=0.04), anxiety (F=9.93, p=0.05), and stress (F=9.97, p=0.05) than others, and it is confirmed using one-way ANOVA F-test.

Conclusion: During the COVID-19 epidemic, stress, anxiety, and depression levels among health care students in Tamil Nadu were high. As a result, immediate and suitable psychological therapies for healthcare students should be undertaken to prevent the psychological harm caused by the COVID-19 epidemic, which might negatively impact their learning.

Abstract-156

Role of Noninvasive Serum Biomarkers for the Diagnosis of Liver Cirrhosis

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Aim: The present study aimed to investigate the diagnostic values of noninvasive markers of liver cirrhosis: the concentrations of the enzymes Aspartate Transaminase (AST), Alanine Aminotransferase (ALT), total bilirubin, direct bilirubin, indirect bilirubin, gamma-glutamyl transferase, Uric Acid, Total Antioxidant Capacity, Total Oxidant Status and Platelet count with hepatic functional markers indices in patients with cirrhosis of liver in varying etiology.

Materials and Methods: Blood samples of patients were suffering from the severe liver disease of 26 were included. The diagnosis was based on a luminescent immune analyzer and biochemical assays using an automatic biochemical analyzer, to analyze the correlation between the hepatic function and fibrosis markers varying etiology in both the cases and controls.

Results: The serum levels of biochemical parameters and liver function tests were significantly higher compare to control ($p<0.021$): the serum levels of oxidative markers were shown significantly lower compared to healthy controls ($p<0.020$). The analysis between the liver function and three oxidative stress biomarkers of liver disease positively correlated with AST ($p<0.004$) and gamma-GTT ($p<0.001$), statistically significant oxidative biomarkers and diagnostic parameters.

Conclusion: The concentration of serological parameters indices changed significantly based on the specific liver cirrhosis etiology, diagnostic parametric tests are positively correlations with hepatic disease. Thus, the detection of these biomarkers might improve the prognosis and diagnosis of liver cirrhosis.

Abstract-157

The Rising Threat of Drug Resistance among *Pseudomonas aeruginosa*- A Nightmare for ICU Patients

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

Aim: To determine the phenotypic profiling of β-lactamases and burden of MDR, XDR, and PDR Pseudomonas aeruginosa in ICU patients.

Material and Methods: A total of 115 isolate of P. aeruginosa were isolated from 502 human clinical samples from January 2019 to February 2021 and all the clinical samples were nonduplicate. 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.

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

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

Abstract-158

Unusual Origin of the Inferior Thyroid Artery: A Rare Anatomical Variation

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Introduction: The inferior thyroid artery is an artery of the neck. Reaching the lower border of the thyroid gland it divides into two branches, which supply the postero-inferior parts of the gland, and anastomose with the superior thyroid artery, and with the corresponding artery of the opposite side. Variations in the origin of inferior thyroid artery can expose to risks of perioperative bleeding and nerve injuries when it is unrecognized by the surgeons.

Case description: Ten formalin fixed cadavers were dissected to observe the anatomy and variations in inferior thyroid artery. In one cadaver, inferior thyroid artery was taking its origin directly from the common carotid artery on right side. It was going to supply the lower part of the right lobe of the thyroid gland.

Discussion: Very few cases have been published about this specific type of anatomical abnormalities of the inferior thyroid artery. From a surgical perspective, this anomaly exposes to two major risks: the first one is hemorrhagic by injuring this artery when on aberrant course; the second risk is increased injury to the recurrent laryngeal nerve. This type of variation might be explained by anatomical changes occurring between the 29th day and the 7th week of embryological development of the aortic arches and the synchronous descent of the thyroid gland.

Conclusion: Anatomical variations of the arterial pedicles of the thyroid gland must be known by surgeons, in order to avoid major complications such as bleeding and nerve injuries.

Abstract-159

Perception and Attitude of First-Year Medical Students' on Learning a Live Online (Video Streaming) towards Human Anatomy Dissection in a Medical College

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Introduction: The COVID-19 pandemic has created a global interest among medical students in learning anatomy topics through online live video streaming. Admist classes at Aarupadai Veedu Medical College and Hospital at Puducherry have several challenges and switched to an online video streaming method to avoid infection and gatherings due to COVID-19.

Aims: To access the perception and attitude of First-year medical students' on learning a live online (video streaming) towards human anatomy dissection.

Materials and Methods: Our present work is a cross-sectional questionnaire-based study. Only first-year medical students were invited to complete an anonymous questionnaire. A total of 150 students from MBBS 1st year participated in the online anatomy classes. After completing online classes, Google feedback forms were obtained about their experience in a questionnaire after obtaining consent, and their feedback was analyzed and quantified.

Result: One hundred fifty students completed the questionnaire and submitted feedback. Over 97.2% agreed that online classes were the best way to learn about human anatomy in medical education. Only 32.8 % of students felt uncomfortable using pictures to explain soft parts. Students' attitudes and emotional states differed between cadaver dissection and even by sex. Male students favoured the online environment over female students. Students favour the online approach to image-based classes, the flexibility of time management, and seating arrangement as significant advantages. The statistical analysis findings showed that there were substantial gender-related differences in the views of the students. Similar variations were observed among other medical students at different stages of the study.

Conclusion. Medical students seemed to find online anatomy courses to be very simple and pleasant. In contrast to the conventional' steeplechase' style, the students used a new way of studying human anatomy dissection performed online. Our research illuminates the benefits and drawbacks of online courses. To achieve this aim, instructors should examine the possibility of using the online live form as an educational tool in their anatomy training and creating new anatomy-related videos for formal live teaching in medical curricula.

Abstract-160

Importance of Pelvic Anatomy for Surgeons

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Introduction: IIA ligation was pioneered by Howard Kelly,an American gynecologist, for treatment of intra operative bleeding from cervical cancer prior to its application in pelvic haemorrhage. Pelvic haemorrhage is a major cause of maternal morbidity and mortality in developing countries. The internal iliac artery (IIA)is the main vascular supply of pelvis. Bilateral IIA ligation is a life-saving procedure to control massive obstetric and gynaecological haemorrhage when other measures fail. It is safer, rapid and effective method to control bleeding.

Materials and Methods: All pelvic surgeons must know the anatomic landmark and basic steps of IIA ligation. At the level of L4-L5 vertebra, the abdominal aorta bifurcates into left and right common iliac arteries. Each further bifurcates into two main branches, the external iliac, having 5 branches and IIA, medial to it. IIA further divides into anterior and posterior division having 8 and 3 branches respectively. Ureter crosses common iliac artery at a point where it divides into internal and external iliac branches. Peritoneum is opened and ureter is lifted. IIA anterior branch is tied with a ligature. It may be repeated on other side.

Result: Burchell proved that bilateral ligation, the drop in pulse pressure was 85-90% and rate of blood flow dropped to 48%inarteriesdistal to ligation. No tissue necrosis occurs due to ample collateral circulation in the pelvis from major pelvic anastomosis. The deep femoral artery is the principle vascular supply to provide revasculature.

Conclusion: The cadaveric demonstration and clinical review of IIA shows the anatomic landmark and steps of IIA ligation for all pelvic surgeons to fight pelvic haemorrhage emergency effectively.

Abstract-161

Morphometry of Canal and Foramina of Orbit

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Introduction: The anatomy of orbital foramina and optic canal appears to vary depending on the individual studied. Moreover, different data between sides have been reported.

Aim: The present study was done to provide the morphometric data of the orbital foramina and canal related to side in different individuals.

Materials and Method: 50 dried skulls were examined in this study, the depth of optic canal and the distances from the constant landmarks to the foramina in the medial and lateral walls were measured using Vernier callipers. The lengths and widths of the foramina and optic canal were measured using a divider.

Results: The distances from the landmarks (frontozygomatic suture and lacrimal crest) to various foramina (supraorbital fissure, infraorbital fissure and optic canal) as well as the length and width for the same foramina with an added depth for the optic Canal were obtained. Few morphometric variations were observed which are clinically relevant. In the present study, the differences between the right and left sides of most of the measurement with an exception of the medial width of the supraorbital fissure were observed. Also, two out of the 50 dried skulls were shown to have a unilaterally duplicated optic canal.

Conclusion: The variation in the anatomy of orbital foramina related to the two sides should be kept in mind when performing surgeries regarding the orbit.

Abstract-162

Morphometry Study of Human Ear Ossicles

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Introduction: Congenital malformations of middle ear ossicles cause hearing problems. Commonly they are absence of long process of incus and capitulum of stapes. The knowledge of variations of these ossicles and its morphometric data will help the otologist during reconstructive surgery and provide necessary information for the prosthesis designer.

Aim: To study the morphometric and morphological features of ear ossicles on both the sides.

Materials and Methods: Around 10 ear ossicles were collected from both cadavers and also from the dry skulls from the Department of anatomy, VMKV Medical College, Salem. The ear ossicle is placed on the graph paper. A good quality digital photograph is taken. This image is transferred to the computer and magnified. Using the measuring tool the parameters will be recorded and analyzed. The accuracy with this method is 0.01 mm.

Results: Descriptive statistics of ear ossicles for right and left were analysed and compared. Morphological variations were found and morphometric variations (length and width) were also noted and analysed. Precise measurements of stapes and incus are essential in the design of the middle ear implants and electromagnetic implants.

Conclusion: Precise measurements of stapes and incus are essential in the design of the middle ear implants and electromagnetic implants. The knowledge of variations of these ossicles and its morphometric data will help the otologist during reconstructive surgery and provide necessary information for the prosthesis designer.

Abstract-163

Effect of Smart Phone Addiction and Nomophobia among the Adolescents

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Introduction: The addiction of smart phone has resulted in a new psychological entity known as nomophobia. The smart phone addiction in young adolescents of India was found to be similar to that of western country adolescents.

Aim: To study the adverse health effects of smart phone usage and its addiction on the mental health of young adolescents and to create awareness among the young adults.

Materials and methods: The study is a cross-sectional study done on 200 healthy volunteers of 18 to 26 years (100 males and 100 females) young adults with no prior history of any mental health disorder. A separate structured validated questionnaire about cell phone usage along was used. Depending on the level of scoring in the survey, the nomophobia was interpreted and participants were separated into 3 groups. Group A – absence of nomophobia was kept as control, group B – mild nomophobia and group C – moderate nomophobia was given awareness about the adverse health effect of smart phone addiction. The participants of group B and C was followed up regularly. The data was collected and analyzed by One way ANOVA and Tukey HSD Post-HoC pairwise comparison.

Result: In the present study the prevalence of smart phone addiction was found to be 24%. The usage of smart phones for talking was the maximum (37.9%), surfing in net (25.8%), texting (19.7%) and the least usage was office related works (16.7%). The duration of smart phone usage for texting, talking and entertainment was analysed by one way ANOVA and was found to be highly statistically significant

Conclusion: The study will help quite a lot of young adults to come out of the above addiction if they are aware of the adverse health effects. This study takes a look at some of the adverse psychological health effects and potential problems arising from the use of smart phones.

Abstract-164

A Descriptive Study of Variations in the Pattern of the Talar Articular Facets in 100 Dried Adult Human Calcanei of South Indian Population

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Introduction: Calcaneus and talus are bones of the hind foot. Calcaneus being the largest of tarsal bones has three facets on its superior surface for articulation with the talus namely anterior, middle and posterior talarfacets. Proper alignment of these two bones is essential for maintenance of the arches of foot. In many diseases of foot such as the talocalcaneal arthritis, intra-articular fracture etc, the size, shape and relation of talus and calcaneus with each other and other bones of the foot must be considered for the external and internal fixation and for other surgical procedures. Knowledge of variations in the talar facets of calcanei are essential because they influence subtalar joint stability.

Aims & Objectives: to study different patterns of talar articular facets on the calcaneumto have a better understanding of anatomical elements contributing to subtalar joint stability and to correlatefindings of the present study with existing literature.

Materials and Methods: 100 dry adult undamaged and human calcanei of unknown sex were obtained from the Department of Anatomy, Aarupadai Veedu Medical College and Hospital, Puducherry.The pattern of talar articular facets with reference to their shape and number was studied.

Results: Based on notable characteristic features, calcanei were grouped into five types:73.3% of calcanei belonged to Type I, 22% to Type II, 2% to Type III, 2% to Type IV and 0% to type V.

Conclusion: Knowledge of variations in the talar facets of calcanei are essential because they influence subtalar joint stability.Pattern of talar articular facets on calcaneum exhibits racial differentiation which could be probably genetically determined.

Abstract-165

Study of Fingertip Patterns in the Breast Cancer Female Patients

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Introduction: Breast cancer is the most common cancer among women in India followed by cervical cancer. It is a major threat to women today with nearly half a million deaths attributed mainly to the lack of early diagnosis. Breast cancer constitutes a major public health issue globally with over 1.7 million new cases diagnosed in women in 2012, and 6.3 million women are alive with breast cancer in the past 5 years annually. Dermatoglyphics is the scientific study of the details of finger ridge structure. Fingerprint patterns are unique to the individual, but they vary from person to person in their number, shape, position, and types. The study of the fingerprints represents a non invasive anatomical proxy marker of breast cancer risk.

Aims: To study and compare fingertip dermatoglyphic patterns in the female breast cancer patients with the female controls and to find out, whether the specific dermatoglyphic trait exist in the patients of female breast cancer and whether it is significant.

Materials and Methods: The study consists of 100 histopathologically diagnosed breast cancer female patients in the age group of 25–70 years from Aarupadai Veedu Medical College and Hospital, Puducherry. Similarly equal number of female controls who had no signs and symptoms of breast cancer and no family history in the same age group as that of breast cancer female patients are taken. Dermatoglyphic prints were taken by "Ink Method" described by Cummins and Midlo and further subjected to statistical analysis to find the variations in the dermatoglyphic features among breast cancer female patients.

Results: The frequency of loop pattern is significantly decreased in breast cancer patients ($p<0.001$) as compared to female controls and the frequency of both whorl and arch patterns are significantly increased in female breast cancer patients ($P<0.001$) as compared to female controls.

Conclusion: From the present study, it appears that there are some variations exists in the dermatoglyphic patterns in breast cancer patients with an advantage of being simple and economical 'ink' method. As the specific features of dermatoglyphic patterns are present in breast cancer patients patients, it can be use for mass screening program to segregate the predicted female breast cancer patients.

Abstract-166

Variations in the Morphometry of Right Ventricle of Human Heart

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Introduction: Right ventricle of human heart is a triangular chamber. It has tricuspid valve complex which consists of papillary muscles, chordae tendineae and three cusps.

Aim: The aim of this study was to find variations in the morphology of Right ventricle.

Materials and Methods: Adult cadaveric hearts were collected from the Department of Anatomy, Aarupadai Veedu Medical College. Right ventricle was opened and measurement was done with vernier caliper.

Results: Significant difference was found in papillary muscles, distribution of chordae tendineae and its ramification.

Conclusion: Knowledge of variations in right ventricle helps clinicians and surgeons in treating cardio vascular diseases.

Anatomy Virtual Dissection Laboratory

Abstract-167

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Introduction: In traditional teaching of anatomy, formaldehyde preserved cadavers are used in teaching. Formaldehyde is pungent which causes irritation of eyes and is a known carcinogen. To replace the cadavers and reduce the exposure of formaldehyde softwares are used in dissection hall.

Aims: To impart the knowledge of Anatomy virtual lab.

Results: The 3D anatomy softwares are ready to use, easy handling, user friendly and nil exposure to formaldehyde. Since it is virtual, revision of any region is possible at any time. Usage of software reduces human tissue waste.

Conclusion: Anatomy virtual lab is user friendly, reduces the cost of formaldehyde, manpower and human biomedical waste.

Role of Dimension around Nutrient Foramina of Tibia in Estimation of Sex- A Study in South Indian

Abstract-168

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Introduction: In a forensic and medico-legal practice, estimation of sex from skeletal remains is one of the key factors for identification of an individual. Nutrient foramen is very easily identifiable and usually well preserved on the shaft of long bones. So, the dimensions around the nutrient foramen of long bones may be useful to determine the sex in fragmented and damaged bones. The tibia is one of the strongest long bones of lower limb usually exposed for crush injury. This study is to investigate the uses of measurements around the nutrient foramina of tibia in South Indian population.

Aim: To determine the role of dimension around nutrient foramina of tibia in estimation of sex – a study in South Indian population.

Material and Methods: In this study 300 intact adult human tibia (150 right sided and 150 left sided) were collected from the Anatomy Department of Aarupadai Veedu Medical college, Puducherry. The incomplete and deformed tibia were excluded from this study Measurements of dimension around the nutrient foramen of the tibia were taken using the osteometric board. A measuring tape was applied to scale circumference of the tibia around nutrient foramen. The Vernier caliper accurate to 0.01 mm was used to measure in this study.

Results: The sex of the bone was correctly matched as per routine method. Sex was correctly classified for the tibia with an accuracy ranging between 75-88%.

Conclusion: The circumference at the level of the nutrient foramen as the single best predictor of sex in south Indian populations. The current study confirms the usefulness of measurements around the nutrient foramen of the tibia in the assignment of sex.

Variations in the Tendinous Slips in the Extensor Tendons of the Dorsum of the Adult Hand- A Cadaveric Study

Abstract-169

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Introduction: Extensor muscles have a relatively constant architecture but also have notable anatomic variations of their tendons. Tendons are cord or band like flexible regular dense connective tissue structures, which connect the muscle belly to periosteum of bone. Anatomic variations of the extensor tendons of the forearm are frequent and the knowledge of these variations is imperative to evaluate the diseased and injured hand. Surgeons and clinicians should be aware of variant anatomy in the number of tendinous slips and its insertion during surgical decompression. These variations, if overlooked, might result in the failure of surgical procedures.

Aim: To determine the variations in the tendinous slips in the extensor tendons of the dorsum of the adult hand.

Material and Methods: This study was conducted to know the variations in the tendinous slips in the extensor tendons of the dorsum. The study was conducted in the Department of Anatomy, Aarupadai Veedu Medical College, Puducherry over a period of five years sixty-two formalin fixed adult South Indian cadavers aged between 30 and 70 years with intact sixty-two right upper limbs and sixty left upper limbs allotted for undergraduate dissection were used for this study. All extensor tendons to the fingers identified, cleaned and the number of the tendon slips and strands were recorded.

Results: In the present study, APL tendon was found with single tendon without any slips in most of the limbs and also observed with maximum of four slips on the left side in one limb. Out of hundred and twenty-two limbs only two observed with variations of EPB in the present study i.e., absent in one limb and two slips in one limb. In the present study out of hundred twenty-two upper limbs, Extensor pollicis longus observed with single tendon in all the limbs except two. Four slips of Extensor Digitorum Communis were seen in 108 specimens, i.e., one each for index finger (EDCI), middle finger (EDCL), ring finger (EDCR) and little finger (EDCS). The maximum number of slips, of Extensor Digitorum Communis were observed with Six slips found in one specimen on both the sides. In four limbs, Extensor Digitorum Communis was found with less than four slips (three slips). In the present study, EDM tendon was not found in both the sides of one cadaver on both sides. A double tendon was observed in ninety specimens.

Conclusion: The number of slips in each compartment varies more frequently in the 4th and 5th compartment of extensor retinaculum.

Morphological Variations of Foramen Transversarium in the Cervical Vertebrae and its Clinical Significance

Abstract-170

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Aim: To study the variations of foramen transversarium in cervical vertebrae and to analyze them morphologically with emphasize on their embryological and surgical importance.

Material and Methods: The study included 150 human cervical vertebrae which were procured from the bone bank collections from the Department of Anatomy, AVMCH. The age and sex of the bone were not known. The foramen transversarium was observed macroscopically on both sides of all the cervical vertebrae. The shape and size of all foramen transversarium were noted. Size comparisons in both the foramens of same vertebrae were noted and accessory foramen were also noted.

Results: Significant number of bones with shape variations, size variations and accessory foramen transversarium were found. The incidence of accessory foramen transversarium is appears to be very high.

Conclusions: For neurosurgeons and radiologists, the surgical anatomy of these variations is important for interpreting the CT and MRI scans and essential while performing complex surgical procedures. Their morphological knowledge is clinically important since the course of the 2nd part of vertebral artery may be distorted. These variations may be one of the cause for complaints like headache, migraine and fainting episodes due to vertebral artery compression.

A Morphometric Study of Sternal Foramina and its Clinical Significance

Abstract-171

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Introduction : The sternum is elongated, flattened bone that forms the middle portion of the anterior wall of the thorax. It articulates with the clavicle at the sternoclavicular joints and with the cartilages of the first seven pairs of ribs. The average length of the adult sternum is 17cm. The sternum is derived from a pair of vertical mesenchymal bands on ventral body wall known as sternal bars. Chondrification occurs cranio-caudally in the sternal bars to form a cartilaginous model of manubrium, sternebrae of body, and xiphoid process. Failure of fusion of these sternebrae results in foramen in the sternum, which is more common at the level of third and fourth sternebrae.

Materials and Methods : The sternal foramen is a well-known variant that carries the risk of life-threatening complications like pneumothorax, injury to vital structures like pericardial and cardiac puncture during sternal biopsy or acupuncture.The length of the bone is measured and the diameter of the foramen is measured using vernier caliper. A foramen was found in a sternum during the routine small group teaching osteology study of bones which were collected in the Department of Anatomy. The data is obtained were analyzed statistically significant.

Results: Total number of 150 sternum were evaluated. The foramen was oval shaped measuring 8.75 mm × 7.35 mm, present in lower one-third of the body of the sternum. Distance from a sternal angle was 68.06 mm and 25.26 mm from the lower end of the sternum.

Conclusion: The sternal foramen is usually asymptomatic found incidentally on chest X-ray. Hence, this variation should keep in mind. Knowledge of variations of sternal foramen may help surgeons while performing invasive procedures like sternal puncture for bone marrow aspiration to prevent life-threatening complications.

Survey of Medical Student's Perception over Online Learning during the COVID-19 Phase

Abstract-172

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Introduction: The COVID-19 pandemic has nearly disrupted the teaching- learning among all the students of all the educational institutions globally, leaving with e-learning as the most adopted source to continue with the system of education, even among medical institutions.

Aim: After 12-16 weeks of only online learning, this survey was conducted to probe the perception of online teaching learning methodology among medical students of various institutions in Puducherry.

Materials and Methods: A survey was conducted through online questionnaire setup with Google form distributed to medical students of various institutions in Puducherry. Each student were allowed to submit the response once. The objectives were fully informed and respondents were allowed to participate voluntarily. The data obtained were analyzed statistically.

Results: According to respondents' response, the main advantages of online learning were the ability to stay at home (73%), continuous access to online materials (70%), learning at their own pace (54%), and comfortable surroundings (60%). The majority of respondents chose lack of interactions with patients and teachers (70%) and technical problems with IT equipment (58%) as the main disadvantages. E-learning was considered less effective than face-to-face learning in terms of increasing skills and social competences. Students assessed that they were less active during online classes compared to traditional classes. E-learning was rated as enjoyable by 76% of respondents.

Conclusion: The present survey agrees e-learning is a valuable method of teaching medical students. With the respondent's opinion this method increases knowledge, but the skill component and behavioural changes is less achievable. E-learning should not only be based on the delivery of content, but students should be able to work with the materials and receive feedback to improvise.

Abstract-173

Prevalence of Scoliosis among School going Children in Puducherry

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Introduction: Scoliosis refers to the lateral curvature of the spine, which is progressive leading to morphological changes affecting quality of life, postural disability, even causing respiratory distress. Hence, screening the prevalence of scoliosis is much needed at a very early stage among school going children, thereby preventing permanent damage and spinal disorders that worsens.

Aim: This study was undertaken to identify the prevalence of scoliosis among school going children in Puducherry thereby adequate adequate knowledge shall be provided to them to make them aware of the clinical condition,change their perception about the disease and motivate them to take necessary steps to overcome scoliosis at an earlier phase.

Materials and Methods: A total of 1164 children (724 boys, 440 girls) aged from 6-17 years, were recruited for the study (since COVID-19 phase, most of the educational institutions were conducting only online sessions). The screening procedure included Adam's test(forward bending test) and scoliometer measurements, if ≥70 referred for poster anterior radiograph of the trunk, where Cobb angle is measured ,and if found to be ≥200 were identified to have scoliosis. The objectives were fully informed to the parents and the students and respondents were allowed to participate voluntarily. The data obtained were analyzed statistically.

Results: A total of 60 students were found positive on forward bending test and scoliometer measurements >7°, among which 22 were confirmed with scoliosis on standing radiographs., 16 (73%) girls and 6 (27%) boys. Thirty-eight of which 23 (60%) girls and 15 (40%) boys had normal spine curvatures on X- ray examination (false positive).

Conclusion: A total of 60 students were suffering from scoliosis, who needs further attention and the same have been informed to the concerned parents.

Ludwig's Angina

Abstract-174

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Introduction: Ludwig angina is an infection of the floor of the mouth under the tongue. It is due to a bacterial infection of the teeth or jaw. This bacterial infection often occurs after a tooth abscess, which is a collection of pus in the center of a tooth or any mouth injury. The Streptococcus and Staphylococcus are common infection causing bacteria. It's most common in adults than in children.

Aim: To know about Ludwig's angina.

Causes: The most prevalent cause of Ludwig's angina is dental related that is infections of the lower second and third molars which is implicated due to their roots extending below the mylohyoid muscle. Due this infection the head, neck, and tongue may appear red, swollen and tongue may be misplaced.

Diagnosis: The infection can be diagnosed with visual examination and Contrast-enhanced MRI or CT images can confirm swelling on the floor of the mouth. Fluid cultures from the affected area can be used to identify the specific bacterium that's causing the infection.

Treatment: It can be treated by clearing the airway using tracheotomy, draining the excess fluid in oral cavity, taking antibiotics till the symptoms are completely cured, a further treatment is required if the infection is caused due to tooth infection.

Conclusion: Ludwig angina can be prevented by following practicing good oral hygiene, having regular dental checkups, seeking prompt treatment for tooth and mouth infections.

Abstract-175

Baby Bottle Tooth Decay

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Objective: A study about baby bottle tooth decay.

Introduction: Baby bottle tooth decay most often occurs in the upper front teeth, but other teeth may also be affected. There are many factors which can cause tooth decay. One common cause is the frequent. tooth decay can occur when the baby is put to bed with a bottle, or when a bottle is used as a pacifier for a fussy baby. Tooth decay is a disease that can begin with cavity-causing bacteria being passed from the mother to the infant. These bacteria are passed through the saliva. When the mother puts the baby's feeding spoon in their mouth, or cleans a pacifier in their mouth, the bacteria can be passed to the baby. This can be easily understood by various signs by white spots on the surface of the teeth, tooth cavities, or holes in the teeth , toothache, swollen or bleeding gums. Natural sugars present in the fluids tend to cling in child's teeth and feed bacteria in the mouth, which produce acids that attacks the teeth. It leads to many complications if untreated which includes; chronic pain, crooked adult teeth, pain or difficulty chewing, serious infections. But these problems can be treated using various measures like; if chalky white spots or lines are detected early, the dentist may apply fluoride in teeth and suggest changes in diet.

Conclusion: The good news is that decay is preventable by taking simple measures like; wipeing the gums and cleaning with a damp washcloth or gauze pad, avoid sharing saliva with the baby through spoons or pacifiers, when their teeth emerge brush them gently with a child-sized toothbrush,breast milk or milk in the baby's bottle and avoid liquids like sugary juices or soft drinks, making sure infant finishes their bottles before bed and nap times.

Pica Disorder

Abstract-176

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Introduction: Pica is a compulsive eating disorder in which people eat non food items. Dirt, clay, chalk, soap, paint are the most common items eaten. Less common items include glue, hair, cigarette ashes, and feces

Aim: To know about Pica disorder its, causes, diagnosis, treatment, medication and how it is associated with other disorders and mainly how it is affects oral health.

Causes: There is no correct cause of pica. In few cases, a deficiency in iron, zinc, or another nutrient may be associated with pica. For example, anemia, usually from iron deficiency, may be the underlying cause of pica in pregnant women. Unusual cravings may be a sign that your body is trying to low nutrient levels.

Diagnosis And Treatment: If the behavior has occurred for one month or more it is diagnosed as pica. Blood tests or X-rays are to be done to check for possible anemia, to check for toxins in the blood, and find blockages in the intestines Complications of pica include: innate toxicity; intestinal obstruction occurring with hair eating; excessive caloric intake; nutritional deprivation; parasitic infections; and dental injury.

Affects Oral Health: Prolong and untreated pica can lead to various dental problems. The amount of tooth surface loss depends on the duration and the type of material intake leading to abrasion, erosion, staining of teeth, periodontal problems, poor hygiene and halitosis.

Conclusion: Pica improves by itself in most young children and pregnant women. However, untreated pica can persist for many years, particularly for individuals with developmental disabilities. In conclusion, greater awareness is needed for pica eating disorder and its symptoms, causes, and treatment.

Tooth Loss and Effects on Functioning of the Brain

Abstract-177

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Aim and Objectives: Our main objective is evaluating whether tooth loss actually has an impact on brain function. We can see many nerve branches connected from the tooth directly to the brain. Due to this, we start by saying that it actually as a significant effect on physical and cognitive brain function. If we look into this closely, tooth loss has long term changes to brain. Though nerves are attached, neuroplastic change occurs. With the help of this condition, we can examine the general physical changes, especially white and grey matter abnormalities and identify Parkinson disease patients.

Materials and Methods: Here's a graph to represent tooth loss has an impact and how it correlated with the cognitive let's look

into the abnormalities and disorders associated with tooth loss. It is associated with three main things i.e grey matter, white matter and Parkinson's disease. If the white brain matter is affected then it can cause significant cerebrovascular risks and many defects in memory. If the grey matter is affected, it completely affects the primary motor and premotor region which helps in the movement of the body and also has a variation in problem solving behaviour. With identifying Parkinson's, we can identify there's loss of dopaminergic neurons, loss of thinking and movements. We could still wonder how a small thing can have such an huge impact. Research has been made in which two groups with patients more than 50 years with tooth and without tooth. Surprisingly edentulous patients have been identified with mild dementia to progressing Alzheimer's. It also affects the trigeminal nerve and it causes trigeminal neuralgia causing sharp shoot pain.

Conclusion: By this I would like to conclude by saying that the person who's having tooth loss has a significant loss of white matter, abnormal increase/decrease with grey matter and it is highly correlated with Parkinson's disease patients.

Variations of the Middle Cranial Fossa

Abstract-178

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During a routine osteology discussion, a unique anomaly in the interior of the skull was encountered. A detailed study on this revealed the fusion of anterior and posterior clinoid processes of sphenoid bone on the left side to form interosseous clinoid ridge. On further observation another dry skull with interosseous clinoid ridge along with caroticoclinoid foramen on the right side was seen. This study was done to enumerate the importance of taking into account anomalies like the caroticoclinoid foramen that can result in neurovascular and surgical complications. It is of utmost importance to have complete knowledge of the anatomy and significance of these ossifications so as to steer clear of any mishaps during surgery.

Pyramidal Lobe of the Thyroid Gland

Abstract-179

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Durine routine anatomical dissection sessions of the structures of neck for first year MBBS students, a pyramidal lobe was observed arising from a cadaver fixed in 10% formalin. Average age of cadaver was 65, gender was Female. Thyroid gland was normal size and normally placed.Upon further investigation of other cadavers, it was found that 2 out of 5 cadavers possessed the PL. The second one arises from the isthmus. The PL is not excised during total thyroidectomy, postoperative hypertrophy of this remnant may result in recurrent goiter formation.

A Comparative Study of Neck Shaft Angle of Right and Left Femur with Clinical Correlations

Abstract-180

Sajan Skaria, PhD Scholar, Department of Anatomy ,Sumandeep Vidyapeeth, Vadodra, Gujrat.

Introduction: The neck of femur is approximately 5cm long which connects the head to the shaft usually at an angle of 125°. The Neck – shaft angle facilitates movements at the hip joint and also acts as a lever for the muscles acting around the hip joint. The neck shaft angle has an important role in gait as it clears femoral shaft off the pelvis during the swing phase.Geometric parameters of femoral neck are important for diagnosis and treatment of various pathological conditions like fibrous dysplasia, congenital coxa vara, osteoarthritis etc. These conditions changes the neck shaft angle and thereby alters the biomechanics and the gait. NSA is an important parameters of femur anatomy in selection and designing of proper hip prostheses.

Aims and objectives: The aim of the study is to compare the Neck shaft angle of right and left femur.

Materials and methods: Total of 300 Dry femur (150 right and 150 left side) from various medical colleges in north Indian region were used in this study. NSA was calculated using goniometer. The angle formed between long axis of neck and the long axis of shaft was recorded.

Results: The mean values of NSA of total (300) femorae was 128.55±6.99. The mean NSA of right femur was 126.41±7.22 and for left femur was 130.70±6.03. The difference in two means were statistically insignificant.

Conclusion: This morphometric study aimed at comparing the neck shaft angle (NSA) of right and left side. The present study showed grater NSA on right sided femur.Results of the present study were similar to that of previous studies of J D Thipse, PD Shah et.al in Ahmednagar. Their study showed hight NSA of 137.1 on right side. Authors like Shakil Mohamad Khan , Shaik Hussain Saheb (right femur was 137.30 and left femur was136.90 .) Kaur P., Mathew S. et.al (The average neck shaft angle in the present study was 121.39°±2.46° on right side and 121°±2.44° on the left side) also got greater NSA on right side femorae.This neck shaft angle is clinically very much significant in hip replacement surgeries as proper placement of implants curtail bony strain around femoral component and thereby restricting the chances for implant loosening.The NSA of femur varies in region, age , races and gender. So, knowledge of upper end of femur in very important in making of hip prosthesis and in dealing with various surgical procedures.

Morphometric Study of Torsion of Humerus in Central Indian Population

Abstract-181

Sajan Skaria, PhD Scholar, Department of Anatomy ,Sumandeep Vidyapeeth, Vadodra, Gujrat.

Introduction: Angle of humeral torsion is the angle formed between the long axes of upper lower end of humerus. In humans the biological necessity of humeral torsion has resulted from development of upper extremities as prehensile appendages functioning frontally to the trunk axis and thereby assisting in the maintenance of an upright posture.Measurement of humeral torsion is important as it enables clinicians to make justifiable assumptions as well as make inferences about the position of the glenohumeral joint in relation to shoulder range of motion and particular to shoulder rotational range of motion. It is also of clinical importance to understand the variations in humeral head retroversion among individuals undergoing operation and the ways in which this parameter might be manipulated to surgical advantage.

Aims: The present study aimed at studying the torsion angle of dry humeri available in the central Indian region.

Materials and methods: Sample size-300 (150R+150L). Reference points were made on the head of humerus for long axis of upper end. The images were analyzed using geometry tool software Geogebra.

Results: The mean value of humeral torsion was 63.89°±14.97in total humeri. It was found 63.28±15.83 and 64.49°±14.04 on left and right side respectively. The p value of 0.483 showed statistically non-significant difference between the left and right humeral torsion.

Conclusion: Various studies reveal two components to humeral torsion: - primary torsion which occurs by developmental patterns and secondary torsion that results from pull of muscular forces. Present study showed higher torsion on right humeri. The findings were similar to previous study of Sachin Patil , Madhu Sethi et.al on 250 humeri in Delhi . The mean torsion angle was 64.57°±7.56°. Study by Shah R K,Trivedi BD et.al on 500 humeri in Ahmedabad showed a mean angle of 67.57°±9.99. Their study also showed maximum torsion on right side. This information gives clinician a clearer understanding of how the structure of the bone, muscle and ligaments influence or limits the shoulder range of motion.

An Unusual Accessory Band of Semitendinosus Muscle in Human Cadaver: A Rare Case Report

Abstract-182

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Introduction: Semitendinosus is a one of hamstring group of muscle lies in posteromedial aspect of thigh. It originates from a inferomedial aspect of ischial tuberosity along with tendon of long head of biceps femoris and has a long tendinous insertion at anteromedial aspect of tibia posterior to gracilis muscle. Semitendinosus and gracilis tendons are commonly used for grafting in anterior cruciate ligament reconstruction surgery.

Aim : Aim of study is to present a rare case of an unusual accessory band and anomalous insertion of semitendinosus muscle in human cadaver.

Case report: The semitendinous muscle inserting in plantar aponeurosis is rare. In one of the specimens, author observed two accessory band of semitendinosus muscle. The first accessory band was observed in back of leg, with length of 46.6 cm from the common muscular insertion. The width was measured as 0.4 mm. The band was inserted into the tendocalcaneus along with plantaris muscle. The second accessory band arises from common muscle belly with mean length of 19.2 cm and width was observed 8.0 mm.The band was observed to be inserted into the crura of leg. Furthermore no any significant anatomical variation was observed in the same limb and cadaver.

Conclusion: The present study emphasizes on knowledge of unusual anatomical variation of semitendinosus muscle can be useful to the operating surgeons to avoid subsequent difficulties during the procedures like transplant surgeries and graft harvesting during reconstructive surgeries to practice efficient surgical procedures. Furthermore, knowledge can be helpful to the orthopaedic and plastic surgeons as clinically gracilis and semitendinosus tendons are routinely harvested for Anterior Cruciate Ligament (ACL) in tendon reconstruction procedure.

eNOS Gene Single Nucleotide Polymorphism rs2070774[C>T] and the Effect of its Allelic Variants on Preeclampsia

Abstract-183

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Introduction: Preeclampsia, a polygenic disease, affects 8-10% of Indian pregnancies. The C786T promoter polymorphism of eNOS gene was studied for the first time in south Indian population.

Aims: 1. To estimate the prevalence and the effect of allelic variants of rs2070774 in study population. 2. To determine the nature of association between the polymorphism and prognosis in patients with Pre-Eclampsia.

Materials and methods: Comparative cross-sectional study with 50 cases and 50 age-matched apparently healthy pregnant women. DNA extracted from whole blood was quantified and subjected to ARMS PCR. Product was visualized under UV light after 2.5% Agarose Gel Electrophoresis. Serum nitric oxide was also estimated. Analyzed data was subjected to Chi-square and student t-test accordingly. P value <0.05 was considered statistically significant.

Results: Genotype distribution in cases and controls were statistically significant. CC+CT genotypes showed 3.5 times higher risk of preeclampsia (CI 1.529-8.012). Lower nitric oxide levels present in cases compared to controls (p<0.001).

Conclusion: Presence of C Allele at rs2070774 leads to low serum nitric oxide levels and hence higher risk of Preeclampsia. Testing for this polymorphism will help in early identification and therapy, improving prognosis.

Effect of Psychological Stress on BMI: A Cross-sectional Study among Medical Undergraduates

Abstract-184

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Introduction and Objectives: The moment students step into a Medical College, they are encountered by this so-called entity “Stress”. The estimated prevalence of stress found in different studies on medical students was higher than that in general population. The prevalence of stress was highest among the 1st year MBBS students (78.7%). The sudden change in the workload, hectic schedule, and lifestyle may be, especially, daunting to the undergraduate medical students. These factors make them ideal population to study stress. Physical activity has proven benefit for physical and psychological well-being and is associated with reduced responsiveness to physical stress. The study also showed that psychosocial stress, including both perceived stress and life events stress, was positively associated with weight gain but not weight loss.

Materials and Methods: Stress was assessed among the undergraduate students of AVMC, Puducherry by using The Medical Students Stress Questionnaire (MSSQ), a validated questionnaire to assess stress among medical students. Among 389 students, 346 of them took part in the study. The anthropometric indices such as body weight and height were measured soon after the students filled the questionnaire. The data analysis was done using SPSS software version 20.

Results: Of the medical students who were administered the questionnaire, 346 (88.9%) respondents participated in this study. Among them 240 were found to have mild to moderate stress and 106 high to severe stress. 60% of the students among obese were found to have high to severe stress as compared to 25.6% among students with normal BMI. There was a statistical significant association between stress and BMI with a significant p-value of < 0.05.

Conclusion: There is association between severity of stress and increasing BMI, the only difference being the way a person responds to it. Some measures should be taken to control stress among young undergraduates. An effective stress management programme is essential to prevent its adverse effects on BMI and, in turn, prevent the occurrence of life-threatening diseases such as diabetes and hypertension.

Abstract-185

A Descriptive Study of Atherogenic Indices in a Tertiary Care Hospital

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Introduction: In an attempt to improve the predictive capacity of lipid profile, "atherogenic indices" were identified which include Atherogenic Index of Plasma (AIP), Castelli Risk index I & II (CRI-I, CRI-II), Atherogenic coefficient (AC) and Non-HDL cholesterol (NHC). AIP, based on serum triglyceride and HDL-c, and CRI are both independent risk factors for cardiovascular risk. This study was aimed to study the atherogenic indices in all hospitalized patients to identify their cardiovascular risk.

Aims: 1) To calculate AIP, CRI-I&II, AC and NHC in inpatients. 2) To establish an association between the various disease and atherogenic indices in patients.

Materials and methods: Ethical clearance was obtained from Institutional Human Ethics Committee (IHEC). Laboratory data (lipid profile) and demographic data (age, gender) was been obtained from Laboratory Information system (LIS). AIP, CRI I & II, AC and NHC was calculated. Data has been analyzed statistically using SPSS version 24.

Results: The total number of participants were 290. Further on subgroup analysis, 240 (82.7%) participants had no statin intake. Out of the 240, 142 were DM, 122 had HTN and 84 had both Diabetes Mellitus (DM) and Hypertension (HTN) and HTN. AIP & CRI-II were higher in individuals with CAD in the group with both DM & HTN than without CAD (AIP – 0.53±0.20 VS 0.43±0.18, p value 0.04) CRI-II – 3.01±1.72 VS 2.55±1.12, p value 0.03).

Conclusion: The study shows that the atherogenic lipid indices were significantly higher in patients with both DM and HTN, therefore these can be easily estimated from routinely done parameters and is therefore a cheaper alternative to other costly diagnostic tests and modalities

Abstract-186

Medical Biochemistry- Adopting Biochemistry as a Postgraduate Subject among MBBS Graduates and Medical Colleges

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Introduction: The interest to pursue biochemistry as a career depends on various factors among which the opinions of student towards the subject plays a major role. Different data between the students have been reported. Biochemistry makes significant contributions to the fields of cell biology, physiology, microbiology, and pharmacology, as well as the fields of inflammation, cell injury, and cancer, etc. These close relationships emphasize that life, as we know it, depends on biochemical reactions and processes. But the current situation reflects a disturbing trend of medical students less inclined to pursue a career in biochemistry.

Aim: This study aims to ascertain the opinion and attitudes of medical students towards biochemistry as a subject and as a future career choice.

Materials & Method: A questionnaire with 12 statements was given to the students of 1st year MBBS and students perusing internship. A total of 158 students participated in the study (94- 1st year MBBS, 64-interns). The options for answering the questionnaire were in four categories namely, strongly agree, tend to agree, neutral and disagree. Results obtained were statistically analysed using SPSS software. A comparison was made between the responses of 1st year MBBS students and students pursuing internship.

Results: Though 74.4% of 1st year students and 51.6% of interns considered biochemistry to be a basic pillar of medical science and 70.2% and 39.1% respectively felt that to be a good clinician knowledge of biochemistry is necessary; only 7.4% among 1st year students and 7.8% among interns strongly agreed to take up biochemistry as a career. There was a decrease in attitude towards biochemistry as a career option among both the 1st year students and students pursuing internship.

Conclusion: The study of biochemistry gives us the fundamental understanding of the living world about how and what made up living organisms as well as understanding the concepts of functioning of various body processes. Keeping this in mind, students pursuing basic sciences should be encouraged to take up biochemistry as a career option in the future, by adopting an integrated teaching schedule where biochemistry is applied during clinical postings of medical students and providing better research and job opportunities in India.

Abstract-187

Prevalence of Consanguineous Marriages and its Relation to Genetic Disorders

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Introduction: Consanguinity is defined as the marriage between close relatives. The deleterious effects associated with consanguinity may be caused by the expression of rare recessive genes inherited from common ancestors.

Aim: The present study was done to provide the statistical data of prevalence of consanguineous marriages and its relation to genetic disorder expressed in the progeny.

Materials & Method: Data from over 117 people from different states was collected for this study. The information regarding consanguinity was obtained through a Google Form made for it, which was further analyzed using graphs and categorizing of data for better understanding.

Results: Consanguinity was seen to be prevalent in regions of 72 cases (61.5%) out of 117 cases, around 44 cases (37.5%) were aware of consanguinity happening in their family and 73 cases (62.4%) are unaware of any such cases occurring in their families. Majority of the consanguinity marriages were between second cousins seen in 15 cases (12.8%), first cousins seen in 13 cases (11.1%) and very minor between the siblings. The frequency of such marriages happening in an individual's family was seen to be more than 2 in 16 cases (13.7%), 2 in 7 cases (5.9%) and 1 in 18 case (15.4%).

Conclusion: The prevalence of consanguineous marriage was seen maximum in Tamil Nadu (21.4%) followed by Kerala, Telangana, Puducherry and Karnataka. It was seen that as people were aware about consanguinity happening in their region but were not aware about it happening in their family. Taking frequency into consideration minimum one such marriages occurred in a family mostly between the first cousins. Further information is needed to state the prevalence of common genetic disorders occurring because of it.

Anaphylaxis

Abstract-188

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Aim: To study about a serious allergic reaction that is rapid in onset and may cause death. It is an acute potential life threatening, hypersensitivity reaction involving the release of mediators from mast cells, basophils and recruited inflammatory cells.

Causes: Exposure to an allergen causes anaphylaxis. This severe reaction happens when an over- release of chemicals puts the person into shock. Allergens to food, insect stings, medications and latex are most frequently associated with anaphylaxis.

Treatment: Epinephrine is the first line treatment and should be administered immediately. Oxygen to help breathing. The use of A beta-agonist to relieve breathing symptoms. Intravenous antihistamines and cortisone to reduce inflammation of the air passages and improve breathing.

Signs and symptoms: Swelling of conjunctiva, runny nose, swelling of lips, hives in skin, pelvic pain, shortness of breath, hoarseness, pain with swallowing, cough, crampy abdominal pain, diarrhea, vomiting, loss of bladder control, headache, confusion, anxiety, light headedness, loss of consciousness, confusion, itchiness in skin, low blood pressure, fast or slow heart rate.

Complications: Blocked airway, cardiac arrest, respiratory arrest, shock.

Conclusion: There are ongoing efforts to develop sublingual epinephrine to treat anaphylaxis. In those who react to latex it may be important to avoid cross -reactive foods such as avocados, bananas, and potatoes among others. Other measures such as antihistamines and steroids are complementary.

Abstract-189

Relationship between Personality Traits and Tobacco Smoking Behaviour in Outpatients of a Tertiary Care Hospital, Mandya

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Introduction: This study was conducted on 168 patients to assess nicotine dependence in tobacco smokers and to compare their personality profiles with non-smokers.

Aim: To assess the level of nicotine dependence in tobacco smokers. 2. To study their personality profile and compare it with non-smokers. 3. To study the association of their personality traits with continuing smoking behaviour.

Materials and Methods: The patients were grouped into nicotine dependent and non-nicotine dependent based on the DSM IV-TR, personality profile assessed with the big five personality test. informed consent was taken before collecting the data. The test of significance used was independent sample t-test and one-way ANOVA.

Results: A total of 168 participants were included in this study, comprised of 84 smokers (50%) and 84 non-smokers (50%). Smokers revealed a higher score in neuroticism compared to non-smokers (25.19±4.33 vs 24.07±3.99), higher extroversion (19.02±4.67 vs 18.64±6.18) lower conscientiousness (20.30±6.64 vs 21.37±5.18) and lower openness to experience (22.14±6.24 vs 22.75±5.25). mean score of neuroticism is significantly more in moderate (26.12±5.50) level nicotine dependence, openness to experience showed significantly high (28.4±2.31) level nicotine dependence. 41.6% of smokers belong to low to moderate level ND, 30.9% moderate level ND, 22.6% high-level ND, and 0.04% low-level ND. Neuroticism showed health concerns as the reason to quit smoking than those who did not.

Conclusion: 39.2% of the participants did not even attempt to quit smoking and the most common reason to quit smoking was health concerns and social factors so it is important to educate these individuals and motivate them to quit smoking. A major cause of relapse were social factors and media/advertisement. Hence, strict rules against the display of smoking can help to prevent relapse.

Abstract-190

Gut Dysbiosis: A Major Concern to Combat Diseases such as COVID-19

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Introduction: The presence of millions of bacteria in the gut aids in immune homeostasis, involved in the synthesis of vitamins, innate and adaptive immunity, IgA production, modulation of immune response and suppression of pathogenic bacteria etc. Any disturbance will cause immune imbalance, predisposes individuals to diseases such as metabolic syndromes, central nervous system disruption, cardiovascular diseases and abnormal blood coagulation profile. The sedentary lifestyle, unhealthy dietary habits, non-exposure to sunlight results in a weakened immune system. Several studies reported that the generation of free radicals, oxidative stress, depletion of vitamin D in the body leads to various dysfunctions. Prolonged usage of medications, antibiotics and unhealthy food habits will increase free radicals, inflammation, DNA damage and cell injury. Therefore, the body is more prone to infections by bacteria, viruses, fungi etc. Studies reported the depletion of gut bacteria with immunomodulatory potential in COVID-19 patients.

Materials and method: It is crucial to have stronger immune system to combat diseases. Regular use of probiotics, inclusion of dietary fibre helps in the growth of good bacteria in the gut.

Results: A healthy life style, good dietary habits, regular exercise, exposure to sunlight, antioxidants and intake of probiotics will help in the growth of good bacteria which will boost the immunity. The microbiota acts like a protective shield against harmful microbes.

Conclusion: Maintenance of gut microflora and healthy life style will help us fight against various non-infectious and infectious diseases such as novel COVID-19.

Abstract-191

Study Comparing the Timbre of Different Musical Sounds and its Effect on Sleep Quality

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Introduction: Sleep is a state of rest that allows the body to rejuvenate. People with acute insomnia present with symptoms such as decreased neurological function. Pharmacological measures have shown a list of negative side effects. Music therapy is an alternative form of treatment that has proven to improve sleep quality. Timbre is the unique quality of a musical sound that helps differentiate it from other sounds of the same pitch and loudness. It also plays a role in our mental state. However, a significant aspect of that has not been explored much in music therapy. Hence, the aim of the present study was to compare the timbre of different musical sounds and to relate it to their effect on quality of sleep.

Aims: To assess and compare the effect of timbre of flute, violin, sitar and vocal on sleep quality, sleep duration and day time sleepiness.

Material and Methods: A randomized controlled study using sitar, violin, flute and vocal were the timbres were taken for consideration. A total of volunteers were chosen after filling sleep assessment forms and split into five groups. Four groups had to listen to tracks with an assigned timbre for 20 minutes before going to sleep daily and the fifth group was control. A weekly assessment of sleep was taken. After the completion of the experiment, a final assessment was done. Results were tabulated.

Results: A statistically significant difference ($p<0.05$) in the PSQI, ESS and sleep duration was seen across all the intervention groups. Overall, the most effective timbre in improving sleep is sitar and the least effective is vocal but the intervention groups showed improvement compared to the control group.

Conclusion: The timbres of different musical sounds have different effects on improving quality of sleep.

Abstract-192

A Study on Perception of Taste and Smell in Healthy Individuals at Different Posture

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Introduction: Taste and smell are the vital senses that stimulate the desire to eat food. The authors hereby hypothesized that the high prevalence of obesity among young adults who eat fast foods is not only due to the consumption of food rich in carbohydrate, saturated fat and salt, but also due to the posture adopted while eating. In fast food restaurants where the traditional table service is rare, physiological stress of standing posture accelerates the pumping of heart due to venous pooling of blood and releases cortisol, known to mutate the taste and olfactory sensitivity. This reduced sensitivity compels the individuals to eat more and more till satiety is achieved. Hence, the present study was done to determine the perception of taste and smell in healthy individuals at different postures.

Aim: 1. To assess the perception of taste and odour in standing position. 2. To assess the perception of taste and odour in sitting position. 3. To compare the results obtained in both the posture

Materials and methods: This study was done among 100 medical students (both genders), of age between 18-21 years. For taste, sip spit rinse test was performed where taste strips are impregnated in sweet and salt solutions of different concentrations (0.05-0.00625 g/mL). Odour threshold was measured with various dilutions of rose water (1:10000 to 1:1) using olfactometer. Results analysed using paired sample t-test and Lim's concordance test.

Results: A statistically significant difference ($p<0.001$) was observed for both sweet (sucrose) and salt sensations between standing and sitting posture. Taste threshold mean value was higher in standing (0.010876000) than in the sitting position (0.008631250). No statistically significant difference was observed for olfactory threshold in both postures. No gender difference exists for taste and smell values.

Conclusion: Standing posture decreases taste sensitivity, no significant change in olfactory sensitivity

Abstract-193

Touch-Me-Not: A Study Analyzing the Effect of Chronic Smartphone Usage on the Fingertips of Normal Individuals

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Introduction: In today's world we can access the wealth of the universe's knowledge via a device that fits in the palm of our hand: the smartphone. Through gestures we ingress on the benefits of this technological marvel. The skin of our finger tips is the chief mode of interaction to utilize the smartphone's features. There have been numerous studies that have studied the various effects of smartphone usage on different physiological systems of the body, none have analyzed the effect of chronic smartphone usage on the fingertip sensations of the hand. The authors tried to fill this lacuna in understanding through this particular study.

Aims: To study the effect of smartphone touchscreens on the fingertips of normal individuals in terms of sensory perception change. By tracking the mobile phone usage time of the participants and measuring sensory perception changes utilizing two parameters: two point discrimination and pain threshold measurement.

Materials and Methods: The study involved 100 participants in the age group of 20-25 years of both genders. Smartphone usage behaviors was reported by the participants through a self-designed questionnaire to gauge whether appropriate for criteria. Smartphone usage time was tracked via a smartphone application. In group A, participants thumb & index finger were tested for pain & touch sensations. In group B, the participants middle, ring and little fingers were tested for the same. Digital algometer and compass aesthesiometer are used to measure the sensations. The results were analyzed statistically using AVOVA.

Results: A significant difference ($p<0.001$) was observed in the pain threshold values and 2-point discrimination values was observed between group A and group B. It was observed that there existed a significant difference the male and female participant values of parameters measured of group A.

Conclusion: Chronic smart phone usage decreases pain and touch sensations.

Abstract-194

Effect of Low Carbohydrate High Fat (LCHF) Diet in Glycaemic, Lipid Profiles & Inflammatory Markers in Type 2 Diabetes Mellitus Patients

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Introduction: India, being the diabetic capital, currently witnessing an alarming increase in Type 2 Diabetes mellitus(T2DM), a major non communicable disease, demanding development of more treatment strategies in its management. With our conventional high carbohydrate low fat diet and medical treatments, the hyperglycaemia and insulin resistance in T2DM is not kept under control. In order to have a better change in the treatment and lifestyle among T2DM patients, we planned to assess the effect of Low Carbohydrate High Fat (LCHF) diet with moderate amount of protein intake along with their medical treatment for about 60 days, which is aimed to reduce the post prandial hyperglycaemia and insulin resistance, which is the main culprit behind the endothelial and vascular damage in them.

Aim: To assess the effect of LCHF diet on type 2 diabetes mellitus patients.

Materials and Method: This Prospective observational study was done as a part of ICMR-STS 2019. A total of known T2DM patients, within the age group of 35-55 years (of minimum 5 years duration of T2DM) without any cardiovascular complications, who are voluntarily willing to follow this diet plan, after getting informed written consent were included in this study. All the blood and physical parameters were assessed before and after the study.

Results: It is observed that, following the LCHF diet for two months showed a significant reduction in the weight, BMI, waist circumference, HbA1c, HS-CRP and increase in the HDL which implies that this diet is preferable for the management of metabolic parameters in T2DM patients than the conventional diet.

Conclusion: In this study, authors found that the LCHF diet is effective in managing the metabolic parameters of T2DM patients than the current scenario of following a low fat high carbohydrate diet.