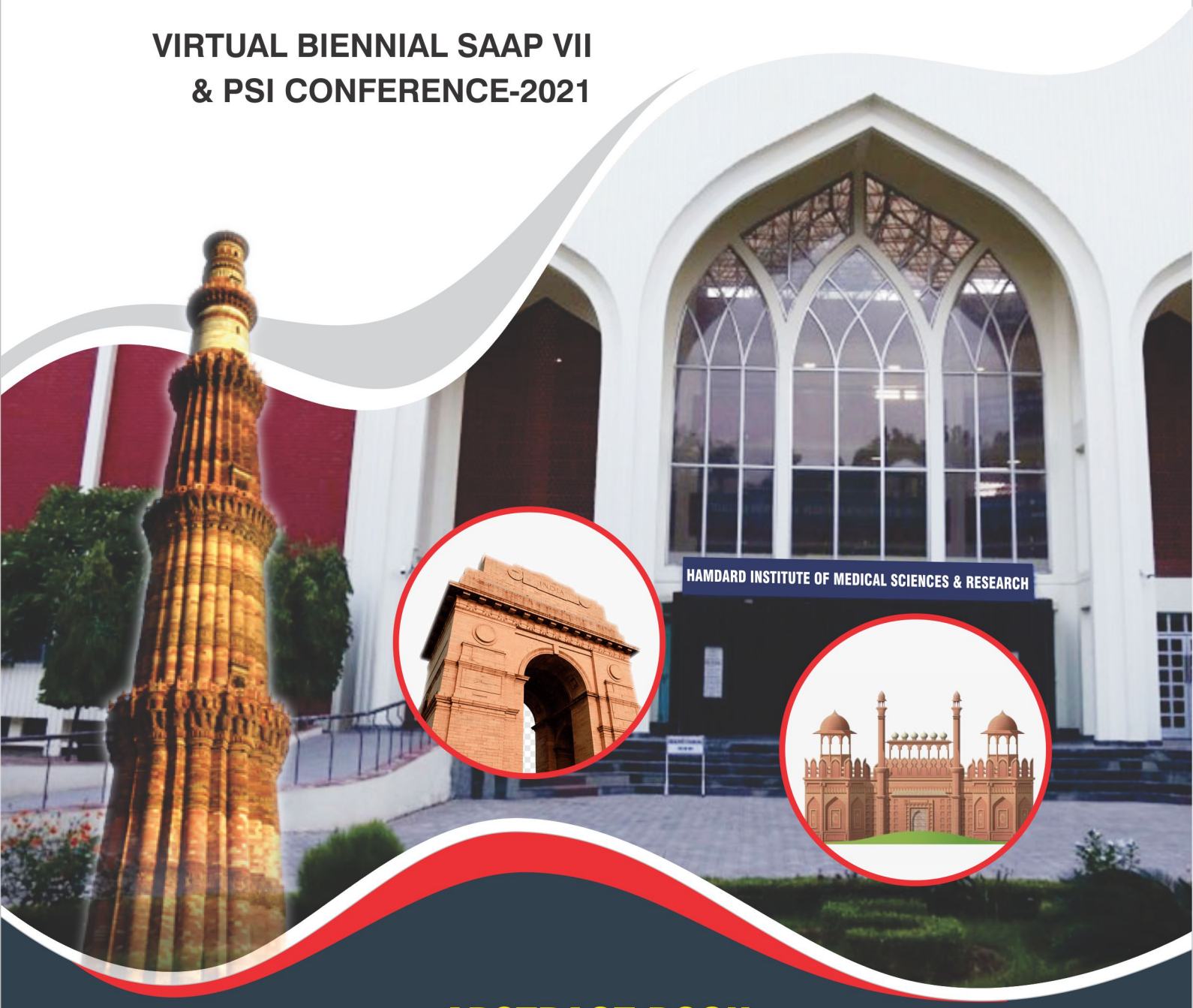
VIRTUAL BIENNIAL SAAP VII & PSI CONFERENCE-2021



ABSTRACT BOOK

"Physiological Sciences for Betterment of Health"

VIRTUAL BIENNIAL SAAP VII & PSI CONFERENCE-2021

March 23-25, 2021

Abstract Book

"Physiological Sciences for Betterment of Health"

Organized By :

Department of Physiology

HAMDARD INSTITUTE OF MEDICAL SCIENCES & RESEARCH
AND ASSOCIATED HAH CENTENARY HOSPITAL
HAMDARD NAGAR, NEW DELHI - 110062

“In physiology, as in all other sciences,
no discovery is useless, no curosity misplaced or
too ambitious, and ..
every advance... will sooner or later
play its part in the service of man.”

Ernst Starling

Invitation

Dear Sir/Ma'am,

Greetings from Hamdard Institute of Medical Sciences & Research, Hamdard Nagar, New Delhi, India. On behalf of the Organizing Committee, I would like to invite you to participate in the Virtual Biennial Conference of the South Asian Association of Physiologists (SAAP-VI I) organized in conjunction with the Physiological Society of India (PSI) 2021 from 23 to 25 March 2021 at Department of Physiology, Hamdard Institute of Medical Sciences and Research, New Delhi, India. The theme of this virtual conference is **"Physiological Sciences for the Betterment of Health".**

The conference will discuss and explore the scope of physiological sciences in improving the health through deliberations on the current research topics. Our local organizing committees will try their best to facilitate this international virtual event at all levels for convenient participation. Details about the conference including Registration, Abstract Submission, Scientific Seminars, Symposium, and other details will be available at our website www.himsr.co.in

Jamia Hamdard has recently been declared as an Institute of Eminence by the Government of India and our Medical College is ranked among the top 25 in India as per NIRF and MHRD, Government of India. The Department of Physiology and the institute is involved in various research projects in collaboration with national and international agencies.

We are eagerly looking forward to active participation from members of all scientific bodies including universities, medical colleges, research institutes in the country and abroad, especially from South East Asian region. Your active participation and cooperation is highly solicited. Kindly participate with full enthusiasm to make this virtual event vibrant and successful.

I request you to provide the undersigned your mobile number/email ID for easy accessibility and coordination. Looking forward to your enthusiastic and virtual participation. Best wishes and regards.

Dr. Md. Iqbal Alam
Professor & Head
Department of Physiology
Hamdard Institute of Medical Sciences & Research
Hamdard Nagar, New Delhi

Organizing Secretary
Virtual Biennial SAAP VII & PSI Conference - 2021
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TABLE OF CONTENTS

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Dr. G. N. Qazi

Director General / CEO

Hamdard Institute of Medical Sciences and Research was established in 2011-12 by Hamdard National Foundation (HNF) with a vision to create excellent human resources who can contribute to the undergraduate and Post-graduate medical education and equally cater to patient care at an affordable cost. Thus HIMSR embodies the principles of empathy in its founding doctrine. In a short span of a decade, HIMSR has emerged among the first 25 medical educational Institutes in India (NIRF ranking 2021).

All along the last 10 years several national and International conferences and Association meetings have been hosted by HIMSR and appreciated by beneficiaries from time to time. The most recent such event was the South Asian Association of Physiologists (SAAP) and the Physiological Society of India symposium held in a hybrid mode due to the Covid 19 pandemic. We appreciate both these bodies for their efforts in bringing together the scientific minds working in diverse subspecialties of Physiology and introducing them for intense interaction to carefully selected academicians of repute who were either physically invited to be present in HIMSR or chose to participate on line. I take this opportunity to congratulate the department of Physiology in HIMSR for organizing and successfully conducting the Biennial SAAP VII and PSI Conference-2021.

The theme of the conference “Physiological Sciences for the Betterment of Health” had been very well-conceived and as expected stimulated extremely useful discussions which did unravel many important multi-disciplinary concepts that will go a long way in building academic pursuits for medical students and faculty engaged in the subject. The contributions of the researchers and academic fraternity showing their keen interest in this conference was highly motivating. Presentation of research papers was extremely beneficial for research scholars and a great motivator for us to organise such conferences in future as well.

Dr. G. N. Qazi
Director General
HIMSR & HAHCH

Prof. (Dr.) Mridu Dudeja

Dean

This year, it was our privilege to host the prestigious Biennial Conference of SAAP & PSI 2021 in India, at Hamdard Institute of Medical Sciences & Research (HIMSR), New Delhi on March 23-25, 2021.

The concept for establishing South Asian Association of Physiologists was approved at the Annual Meeting of Physiological Society of India at Faridabad on Dec 2007 and Its Inaugural convention was held in conjunction with 11th Biennial of Pakistan Physiological Society at Shifa College of Medicine, Islamabad in 2008, when it was first held with contributions of over 90 papers. Since then, SAAP's has been held biennially.

The activities of SAAP were quickly owned by nearly 1000 medical colleges and universities all across South East Asia. It aims to promote research and teaching in Physiology by providing free communications to its members and by actively committing itself to the national and international scientific communities. Conferences, so far been held in Bangalore, Colombo, Dhaka, Kathmandu and Lahore along with pre-conference workshops on teaching Physiology.

Hamdard Institute of Medical Sciences & Research (HIMSR), has been established with the objective to impart value laden, demonstrable quality medical education to its Undergraduate and Post-graduate students in all its branches and has been ranked First in NIRF ranking amongst private college in National Capital Region in Delhi and 25th position amongst both private and government medical colleges across India. To bring together in one place educational facilities of the highest order and we are proud host of this international conference, this year.

Eminent scientists from all over the world participated in this conference to present their scientific papers and shared their respective enriched experiences and expertise. I must congratulate the Department of Physiology and the Organizing Secretary, Prof. Iqbal Alam, for organizing such a wonderful conference with SAAP successfully.

Please accept my heartfelt thanks for being a part of this conference. Your presence and participation conveyed strong commitment towards promoting exchange of technical information, experiences and expertise for the welfare of the SAARC Member Countries.

I would like to express my sincere gratitude to all the panelists and speakers for sharing their expertise with us through such inter country conference.

I took note with a great interest of your valuable interventions, which are provided through your regular seminars, workshops, symposia and technical fairs.

I give my best wishes on behalf of HIMSR & our CEO, to all the eminent organizers, chairpersons, speakers and participants and look forward to your association beyond this event, which will initiate the very stimulating and instructive exchange of ideas and activities. I trust that we all have taken home further inspiration on how to foster the necessary change in our scientific acumen but I certainly have.

Thank you

Prof. (Dr.) Mridu Dudeja
Dean & Principal
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MBBS. MD. (LHMC),
Fellow Molecular Biology (AIIMS)
MBA (HCA) (FMS) Gold Medalist
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Maj. Gen. (Retd.) Professor Muhammad Aslam

PRESIDENT

I owe my gratitude to the Organisers of Hamdard Institute of Medical Sciences and Research (HIMSR), Hamdard Nagar, New Delhi, India namely Dr. G.N Qazi, Dr. Mirdu Dedeja and Dr. Mohammad Iqbal Alam to arrange SAAP-VII virtual conference in the era of COVID, pandemic. I am grateful to the invited speakers namely; Dr. Robert G. Carroll (USA), Dr. Julie Chan (IUPS, Taiwan) and Dr. Chan Hun Leem (FAOPS, South Korea), plenary speakers, presenters, e-posterers and participants to accord value addition to the virtual conference. Over 300 participants are attending the conference which is incredible. I am indebted to Prof. Kusal K. Das, Prof. Amar K. Chandra, Prof. Savithri Wilamasekera, Prof. Rokeya Begum, Prof. Mangala Gunatilake, Prof. Piyusha Atapattu, Prof. Noor Zahan, Prof. Muhammad Ayub, Prof. Samina Malik, Prof. Ruhul Amin and Prof. Rita Khadka for creating harmony and for problem-solving approach in convening this mega conference. I owe my tribute to great Physiologists of South Asia who left us namely Prof. M.A. Hai (Bangladesh), Prof. Shamyl Chaudhry (India), Prof. Arif Siddiqui (Pakistan), Prof. Najmul Haq (Bangladesh), Prof. Nusrat Waqar (Pakistan), Prof. Ali Muhammad Soomro (Pakistan), Prof. M. Amjad Hameed (Pakistan) and other legends. May Allah bless their soul with eternal peace (Aamen).

Let me now narrate the brief journey of South Asian Association of Physiologists (SAAP) from its emergence to date: The concept approval for emergence of SAAP was made on December 07, 2007 at Faridabad, India. The first draft document took its shape in January 2008. The SAAP-I Conference was held at Shifa College of Medicine, Islamabad, Pakistan on November 14-16, 2008 with the theme “Updates in Physiology: Trends, Opportunities and Challenges”. The SAAP-II Conference was held at St. John’s Medical College, Bangalore, Karnataka, India on November 15-17, 2010 with the theme “Rediscovering Physiology in the Post-Genomic Era”. The SAAP-III Conference was held at University of Sri Jayewardenepura & Hotel Taj Samudra, Colombo, Sri Lanka on November 7-10, 2012 with the theme “Advances in Physiology: Trends and Opportunities”. The SAAP-IV Conference was held at Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh on December 5-7, 2014 with the theme “Advancement of Physiology from Research to Clinical Practice”. The SAAP-V Conference was held at Kathmandu University, Dhulikhel, Nepal on December 10-12, 2016 with the theme “Redefining Health in Nature”. The SAAP-VI Conference was held at University College of Medicine and Dentistry, The University of Lahore, Pakistan on December 12-15, 2018 with the theme “Enhancing Academic and Research Collaboration in South Asia”. The SAAP-VII Conference was held at Hamdard Institute of Medical Sciences and Research, Jamia Hamdard, New Delhi, India on March 23-25, 2021 with the theme “Physiological Sciences for Betterment of Health”.

The SAAP has following (but not limited to) gigantic task ahead:-

1. Establishment of Customized SAAP Secretariat and accreditation of all component societies of SAAP by the relevance statuary bodies.
2. Consolidation of Financial health of SAAP
3. Emergence of Society of Physiologists of Bhutan, Maldives and Afghanistan
4. Enhancing Academic and Research Linkage and Collaboration in Physiological Sciences amongst the Member Societies of SAARC Countries
5. Strengthening connectivity with Global Professional Bodies like IUPS, FAOPS and the like

We, the Physiologists from South Asia, may work with grace and harmony to advance knowledge for the health of mankind and stimulate research-based economy.
I wish you all the success in your endevours for the noble cause.

Maj. Gen. (Retd.) Professor Muhammad Aslam
President (SAAP)
MBBS; M.Phil; Ph.D; FPAMS; FCPS
E-mail: professormaslam@yahoo.com

South Asian Association of Physiologists

Professor Savithri Wimalasekera

Secretary General

It is indeed a great pleasure and privilege to send this message to the book of abstracts and proceedings of SAAP VII conference held from 23rd – 25th March 2021. The 'Virtual Biennial South Asian Association of Physiologists (SAAP) VII and PSI Conference – 2021' was jointly organised by the Jamia Hamdard university, South Asian Association of Physiologists (SAAP) and the Physiological Society of India (PSI). Due to the travel restrictions and social distancing mandatorily imposed to curb the COVID -19 pandemic, the biennial conference was delayed. Thus, it was decided to hold the Biennial SAAP 7 conference and the biennial general assembly meeting on the online platform.

I am so thankful to the patron, Dr. G.N. Qazi, CEO, HIMSR, and Prof. (Dr.) Mridu Dudeja, Dean, HIMSR for extending their cooperation to Prof. (Dr.) Md Iqbal Alam, Head, Dept. of Physiology, HIMSR as the organising secretary. The meticulously organized virtual conference was set up within a short time span of about 3 months . I warmly congratulate Prof Iqbal Alam for taking on this massive task of setting up a virtual platform with delegates and resource persons from all parts of the globe. The sessions ran seamlessly with out interruption through out the 3 days of the main conference and 2 preconference workshops conducted one week before.

This biennial period marks the sad demise of our founder, Prof Arif Siddiqui who was the incumbent president of SAAP for the period 2018 – 2020. After the demise of Prof Arif, I, as his general secretary had the arduous task of continuing the good work activated by him. Some of these were, reviving of the SAAP Bulletin, a quarterly on line news-letter with a new capable multi-country editorial committee, setting up of a new interactive web site with a web master and planning the next medical education workshop to be held in conjunction with the biennial conference. In achieving these objectives, I was amply assisted by Prof Muhammed Aslam who took on the massive responsibility to steer SAAP as the interim President for the balance tenure after the demise of Prof Arif.

The conference sessions are packed with high quality academic content and motivates interaction between the speakers and delegates, thus compensating for the lack of a physical meeting. The organizing committee was assisted by the members of Physiological Societies of India and the SAAP executive council in setting up an academic programme of high quality. SAAP greatly appreciate the efforts of technical staff and other staff of Jamia Hamdard university in assisting with the uninterrupted online broad cast of the sessions.

The ability of SAAP academics to bring together diverse groups of Physiologists in harmony to further foster Physiology in the South Asian region is an unique capability. Along with the able guidance of our founder, the late Prof Arif Siddiqui, and the academics of the region, SAAP has grown and matured over these past few years. Within the short span of 12 years SAAP has established links with the premier international physiological societies, such as the International Union of Physiological Societies (IUPS), and the Federation of Asian Oceanian Physiological Societies (FAOPS). Thus SAAP aims to foster academic collaborations between diverse physiologists and academics to achieve better health in the post-COVID era. I wish the scientific collaborations and links established through these long years would continue from strength to strength and further develop Physiology teaching and research within the region under the banner of SAAP.

Professor Savithri Wimalasekera
MBBS, M. Phil, Ph.D.
Secretary General, South Asian Association of Physiologists
Department of Physiology, Faculty of Medical Sciences
University of Sri Jayewardenepura, Sri Lanka

Prof. Amar K Chandra, FAMS

PRESIDENT

I am pleased to learn that the Organizing Committee of 'Virtual Biennial South Asian Association of Physiologists (SAAP) VII and PSI Conference – 2021' has taken the task to publish the 'Abstract Book' to commemorate the scientific events that took place in the Hamdard Institute of Medical Science and Research (HIMSR), New Delhi during 23rd – 25th March 2021. I feel privileged for having the opportunity to express my views on this memorial scientific event. At the outset it is to mention after SAAP Biennial Lahore Conference in 2018, VII Biennial Conference of the South Asian Association of Physiologists (SAAP) with Annual Conference of the Physiological Society of India likely to be organize in India in 2020 and Prof Arif Siddiqui, founder and master-mind in the genesis of SAAP was of the opinion that it would be in HIMSR, New Delhi in a great way. However, for the untimely demise of Prof Arif Siddiqui in May, 2020 who has also been elected President of SAAP (2018-2020) and the unprecedent COVID-19 pandemic the VII th Biennial SAAP conference of SAAP with PSI Conference was conducted in virtual mode in HIMSR, New Delhi, during 23rd – 25th March 2021 under the able guidance of Prof Muhammed Aslam who took the responsibility to steer SAAP as the interim President in absence of Prof Arif Siddiqui and Prof. Savithri Wimalasekera, Secretary General of SAAP along with the members of Executive Council and Advisors of SAAP in collaboration with the efficient and active management team of HIMSR, New Delhi. The focal theme of the conference was 'Physiological Sciences for betterment of health'. The Physiological Society of India though has played pivotal role however, the consistent cooperation of constituent societies of SAAP from Bangladesh, Nepal, Sri Lanka and Pakistan was also encouraging.

We are indebted to Dr. G.N. Qazi, CEO, Hamdard Institute of Medical Science and Research (HIMSR), as well, and Prof. (Dr.) Mridu Dudeja, Dean, HIMSR for their full-fledged cooperation by providing their rich machinery as well as whole hearted cooperation to make the three days deliberation scientifically fruitful. I have no words to express my gratitude to Prof. (Dr.) Md Iqbal Alam, Head, Dept. of Physiology, HIMSR who has taken the responsibility as Organizing Secretary for conducting this Conference very meticulously in collaboration with his efficient team primarily of the Institute in virtual mode within a very short tenure.

We are privileged to get a number of galaxies as Prof. Julie Chan, President, IUPS, Prof. Chau Hun Leem, President, FAOPS, Prof. M S Birdar, Vice-Chancellor, BLDE University, Prof. Robert C Carroll of IUPS and Dr. GN Quazi, CEO, HIMSR as President of the Program other than the President(s), General Secretaries(s) of the constituent societies of SAAP along with the President, Secretary General and Executive Committee members and Advisors of the SAAP in the Inaugural Session - it was an outstanding achievement of the organizers to gather such stalwarts in one platform. The inaugural session was followed by Plenary lectures, Keynote addresses by the international and national dignitaries. The entire three days deliberation was divided into a number of sessions which were Chaired and Co-chaired by eminent physiologists.

Each and every session were rich in academic content and full of participants; the presentations were excellent. Besides, the participating delegates from the constituent societies of SAAP have got the chance to exchange their views in online mode with the eminent speakers and it appeared to be lifeful as good as physical gatherings. This has become possible because of the high quality online infrastructural facilities provided by the technical staff and other staff of HIMSR. Besides the main scientific sessions there were arrangement for online poster presentations sessions where the young research scholars as well the students participated. Each and all posters were evaluated by hon'ble juries and there was arrangement for prizes for the best presenters. In addition to three days scientific deliberation there were pre-conference workshop in the Department of Physiology, All India Institute of Medical Sciences New Delhi. The organizers also made arrangement for CME programs. In all the total numbers of speakers were 33 and the participants were more than 300. In true sense this scientific gathering was unique in nature and should be consider as one of the outstanding South Asian Association Physiological conferences.

In addition to scientific deliberation, the Executive Committee members of SAAP (2018-2020) have organized Council meeting to nominate President, Secretary General, Treasurer, Vice-President(s) and the Advisors of SAAP for the period 2020-2022 and also have taken the step to handover charges to newly nominated committee. It has also been decided that the VIIIth Biennial Conference of SAAP will be organized in Sri Lanka by the Physiological Society of Sri Lanka (PSSL) in 2022.

Once again SAAP has established itself as a pioneer organization of physiologists of South Asian region by gathering the physiologists of diverse groups not only from the region but also from the counties like US, UK, Korea, Sweden, Armenia etc. under the aegis of IUPS and FAOPS. All these will help to strengthen the teaching and research in physiology in each of the member countries as well as South Asian region in forth coming days.

Long live SAAP!

Prof. Amar K Chandra, FAMS
President, The Physiological Society of India
Secretary, Federation of Indian Physiological Societies
Advisor, South Asian Association of Physiologists

Virtual Biennial SAAP VII & PSI Conference - 2021

VIRTUAL BIENNIAL SAAP VII & PSI CONFERENCE-2021

REPORT

Dr. Md. Iqbal Alam
Organizing Secretary

The 'Virtual Biennial South Asian Association of Physiologists (SAAP) VII and PSI Conference – 2021'was jointly organised by the South Asian Association of Physiologists (SAAP) and the Physiological Society of India (PSI) in one of the reputed Medical Institutes of India, Hamdard Institute of Medical Sciences & Research (HIMSR), New Delhi, during 23rd - 25th March, 2021. The focal theme of three two-day Conference was 'Physiological Sciences for betterment of Health'. The Conference was organised under the great patronage of Dr. G.N. Qazi, CEO, HIMSR and was chaired by Prof. (Dr.) Mridu Dudeja, Dean, HIMSR. The whole event was managed meticulously by Prof. (Dr.) Md Iqbal Alam, Head, Dept. of Physiology, HIMSR as the organising secretary.

The Conference was inaugurated on24th March, 2021in the morning at Conference Hall of HIMSR and was presided over by Dr. G N Qazi with the recitation of the Holy Quran by Imam of Rabia mosque followed by 'Lamp Lighting Ceremony' by the virtual participants and the office bearers of SAAP. Just after the inauguration, Prof. Iqbal Alam, Organising Secretary welcomed the delegates of the virtual gathering. It was followed by a short speech to tribute 'Late Prof. Arif Siddiqui – the founder of SAAP' by Prof. Kusal K. Das, Vice-President of PSI as well as Advisor of SAAP. Prof. (Dr.) Mridu Dudeja, Dean, HIMSR then addressed the audience. The Conference was then formally inaugurated by the President of SAAP, Prof. Md. Aslam, President of PSI, Prof. Amar K Chandra, while Prof. Julie Chan, President, International Union of Physiological Sciences (IUPS) -the Chief Guest of the event, Prof. Robert G. Carroll ,Chair, Education Committee, IUPS, Prof. Chau Hun Leem, President, Federation of the Asian and Oceania Physiological Societies (FAOPS), Prof. M S Biradar, Vice Chancellor of BLDE (Deemed to be University), India, Guests of Honor were virtually present.

In this two-day deliberation, there were nine (9) Plenary Sessions each with 3-6 speakers and parallel 5 E-poster sessions. Each session was chaired by eminent academician(s).Each speaker was allowed 20 minutes to deliver their speech and about 5 minutes allotted for discussion. The Conference was attended by three hundred twenty (320) delegates from South Asian countries that includes Pakistan, India, Sri Lanka, Bangladesh and Nepal and also from USA, UK, South Korea, Armenia, Sweden, Taiwan and Saudi Arabia.

First Day of the Conference (24/03/2021):

The session started just after the formal inaugural programme with the keynote address of Prof. Julie Chan, President IUPS, she elaborated in detail the broad spectrum of actions of nitric oxide (NO) on the cardiovascular regulation. Describing the intricate mechanisms balancing the "Pro-life" and 'Prodeath" phases in the RVLM and the role of NO in this phenomena. It was followed by another interesting session of Prof. Robert G. Carroll who spoke about the shift to competency-based education in the medical curriculum. He stated about the need to move beyond knowledge-based competencies and to other domains and the importance of early clinical exposure.

This enjoyable intellectual extravaganza was then brought forward by Prof. Dewan Majid (USA) who spoke at length about the role of cytokines with high salt intake. The role of high salt intake in development of clinical hypertension and the probable importance of Tumour Necrosis Factor (TNFalpha) in developing pathogenesis was discussed.

Prof. KK Deepak (AIIMS, New Delhi) spoke on WHO's global action plan for physical activity 2018- 2030. He emphasised the importance of regular physical activity and lifestyle improvement both at individual and community level.

The afternoon sessions of the first day, was started with the keynote address of Prof. Sinerik Ayrapetan, UNESCO Chair in Life Sciences, who spoke on the metabolic regulation of semipermeable properties of cell membranes. He elaborated the role of cell hydration in the realization of biological effects on Na/K-ATPase alpha isoforms on it. This was followed by lectures of Prof. Maulee Arambewela and Dr. Chandimani Undugodage both from Sri Lanka on different aspects of obesity. Then Dr. Rita Khadka of Nepal and Prof. Shelina Begum from Bangladesh shared their work on cardio-autonomic dysfunctions in thyroid disorders and metabolic syndrome respectively.

The exhilarating barrage of information of the first day was taken forward with the deliberation of Prof. Amal Kanti Bera, IIT Madras, India who spoke on the role of calcium receptor Pannexin-P2X7 in cell survival and death. His team demonstrated extracellular calciumdependent coupling between P2X7 receptor and pannexinhemi channel in the neuronal system and its involvement in ischemic neuronal death.

The last plenary lecture of the day was of Dr. Amit Bandhyopadhyay, Kolkata, India who spoke on the predictions of cardiorespiratory fitness in Indian population.

The last but most important keynote lecture was delivered by Prof. Chandan Sen, J. Stanley Battersby Chair and Professor of Surgery, Director of the Indiana Center for Regenerative Medicine and Engineering, USA who mesmerized the audience with the cutting-edge work on tissue nano transfection for in-vivo tissue programming. Prof. Sen and his team have developed a nanochip device that uses tissue nano transfection (TNT) to reprogram one type of tissue into another using nothing more than a simple touch and a harmless electric spark. With TNT, researchers have converted skin tissue in mice into functional blood vessels that fostered the healing of a badly injured leg.

Annual General Meeting of SAAP:

The last event of the first day was the Annual General Meeting of SAAP wherein Prof. Kusal Kanti Das, Vice President of PSI was nominated as the President. of SAAP and Prof. Mangala Guntathilaka as Secretary General of SAAP unanimously for (2021- 2023).

Second Day of the Conference (25/03/2021):

The second day began with the topic in COVID-19, as the most devastating coronavirus disease has taken over our social lives globally. In this topic the first lecture was by Prof. Jassimuddin Ahamed (USA) who spoke about the role of COVID-19 in cardiovascular diseases. He demonstrated the thrombotic events in Covid-19 and the probable changes occurring at cellular level causing a state of pro- thrombosis; in the next lecture, Prof. Sunil Dhungel of Nepal, spoke on the relation between chemo-sensation and COVID-19 and how the virus causes a dysfunction in taste and olfaction.

Prof R. V. Kulkarni of BLDE University then spoke on the importance of Chronotherapeutics and how the drug delivery systems can be synchronized with time. Prof Deepthi De Silva of Sri Lanka discussed on the role of connexins in inner ear function in development of wiring, tonality etc. The session was continued further with the lecture of Prof. Gausal Azam Khanof Fiji who spoke about the role of stress in sterile inflammation and insulin resistance as well as role of hypoxia in it.

Other Interesting lectures in the morning session of the day were by Prof. G. K. Pal of JIPMER, India who spoke on the brain-gut axis and described the neural, neuro- endocrine and the immune pathways by which the gut microbiota affect the central capacities of an individual. Prof. Samina Malik of Lahore, Pakistan, indicated about the PTEN variant in breast cancer while Prof. Suvro Chatterjee of Chennai, India described his work based on microfluidics in vascular diseases.

The afternoon sessions of the second day, started with the lectures on nitric oxide (NO) and free radicals and the speakers were from Nitric Oxide Society (India). Prof A. Ray, Prof. M. I. Alam and Prof. Kavita Gulati spoke at length about gender based differences, its role in pre-eclampsia and neuromodulation respectively.

The last sessions of the day, comprised of keynote address delivered by Prof. Chae Hum Leem, Soth Korea and two plenary lectures of Dr. Adel Helmi, University of Cambridge, UK and Dr Eric Thelin, Karolinska Institutete, Sweden who spoke on brain injury and neuro-inflammation. Dr. Helmi stressed that inflammation not only causes secondary injury following traumatic brain injury (TBI), but also in the starting of reparative processes. Their team carried out a randomised control trial of an Interleukin-1 Receptor antagonist, a putative neuroprotective agent, in patients with severe TBI and used cerebral microdialysis to demonstrate penetration of the systemically administered drug into the brain extracellular space. By measuringdownstream cerebral cytokines and chemokine in the same patients they were able to track the pattern of response to the administered cytokine inhibitor. An understanding of the underlying biological effects of promising pharmacological agents illuminates the pathological processes at play after TBI as well as informing larger phase III trials. Dr. Thelin spoke on the predictive power of serum cerebrospinal fluid NF-L levels towards outcome, and their potential correlation to diffuse axonal injury (DAI).

The deliberation as mentioned consisted of Plenary and Keynote lectures by globally recognised Eminent Researchers in presence of over 300 participants spanning over two-day were chaired by Eminent Scientists and Academicians like Prof. Aslam (Pakistan), Prof. Rokeya Begum (Bangladesh), Prof Sunil Kohli (India), Dr. Suman Jain (India) Prof Amar K Chandra (India), Prof. VP Varsheney,Prof Ruhul Amin (Bangladesh), Prof. Arunabha Ray (India), Prof Mahwish Arooz (Pakistan), Prof. Zahid Ashraf (India) and Prof. Rita Khadka (Nepal) amongst others.

E-poster presentation Sessions:

In the E-poster presentations sessions, the young researchers and students got the opportunity to present their work. This session was organised on a parallel online zoom link. It was spread over both the days of Conference that is 24-25th March, 2021. It was conducted during all the five sessions of both the days. A total of 62 e- posters were only presented out of 130

e-posters due to time constrained. The sessions were chaired by eminent judges from the SAAP member countries. The sessions were very much enriching for all. The presenters of outstanding paperswere awarded in each of the categories as. M.Sc. students, PhD students, MD students (Physiology) and Faculties.

Preconference Workshops: CME on 'Medical Education

Besides the main event, the pre-conference CME on 'medical education' and workshop on 'Recent advances in physiological techniques' were also organised successfully on 17thMarch, 2021 respectively. Eminent personalities from the field, namely Dr. M. Aslam, President SAAP, Dr. K. K. Deepak, AIIMS, New Delhi, Dr. G. K. Pal, JIIPMER, Puducherry and Dr. Rokeya Begum, President, BPS, Bangladesh, chaired the first session.

After the inauguration and welcome address, the perspective of the workshop was laid out by Dr. Robert G Carroll, Greensville, with his brief and enlightening speech on 'Aligning assessment with CBME objectives'. This was followed by an interesting session on 'Student Assessment: fail or pass for teachers in the system of Assessment' by Dr. Amarnath Karunanayake, SriLanka, where novel ideas on strengthening medical pedagogy were presented. Thereafter, Prof. Md. Ruhul Amin, Bangladesh, shared his experience from the South East Asian region on 'Conducting assessment for undergraduates,

The second session was chaired by another set of luminaries that included Dr. Savithri Wimalasekara, Secretary General, SAAP, Dr. Iqbal Alam, HIMSR, Dr. Farah Khalique, UCMS, New Delhi and Dr. Prasun Priya Nayak, AIIMS, Jodhpur. This session commenced with an illuminating talk on 'Assessment of knowledge by constructing quality MCQs' by Prof. Samina Malik and Prof. Mahwish Arooj, University of Lahore, Pakistan, who gave impactful insights into designing multiple choice questions. The next lecture was of Prof. Bishnuhari Paudel, Nepal who shared his enriching thoughts on 'Assessment using long and short answer questions- advantages and disadvantages'. At the end of the second session of the workshop, Prof. Musharraf Husain, New Delhi elaborated on 'OSCE/OSPE in resource poor setting'.

The third and final session of the CME was chaired by Dr. Himani Ahluwalia, VMMC, New Delhi, Dr. Ramanjan Sinha, AIIMS Raipur and Dr. Bharti Bhandari, GIMS, Greater Noida, wherein Dr. Sabina Khan, New Delhi dwelled at length on the very topical subject on 'Online assessment:relevance in current scenario'. This was followed by an interesting talk on 'Blueprinting in assessment' by Dr. Aqsa Sheikh, New Delhi. The last workshop was 'Assessment of clinical skills', whose various aspects were elaborated in a lucid fashion by Dr. Lata Mullur, Dept. of Physiology, BLDE University, Vijaypura. The engaging and intellectually stimulating workshops were thereafter brought to an end with the valediction ceremony.

Workshops on the Day of Conference

Workshop on recent advances in Physiological Techniques was also conducted during Virtual Biennial SAAP VII & PSI Conference on 23rd March 2021.

The first session of this workshop was on' Cardiovascular Autonomic Function Tests'. This session started with the lecture of Prof. Ashok Jaryal, AIIMS, New Delhi, India, who in a very well elaborated way explained the different autonomic function tests and also discussed its relevance in basic research and clinical practice.

In the following session, Dr. Bhawna Mattoo, HIMSR, India has delivered an informative talk on the importance of animal experiments in physiology. This workshop was chaired by eminent researchers from the SAARC nations Prof Md. Aslam, Prof. A. K. Chandra, Prof. K. K. Das, Prof. Arunabha Ray, Prof. Mangala Gunatillake and Prof. Ruhul Amin.

The most appealing points of this workshop session were the live demonstrations of cardiovascular autonomic functions tests and live demonstrations on animal experiments showing invasive blood pressure monitoring, non-invasive blood pressure monitoring, blood flow measurement and cardiac output measurement.

The conference highlighted the prospective of physiology. In the future; there is an expectation that physiological sciences will be translated into research that relates better to ordinary people and their everyday lives. Expanding upon the current data pool and need of new technologies that will lead to much greater use of virtual and 'document-oriented' data stores, as well as reconsideration of the way data is presented.

Notably, the success of the 'Virtual Biennial SAAP VII and PSI Conference 2021' is attributed to the active engagement of the esteemed members of local organizing committee, the co-chairs, international committee members, speakers, delegates, and representatives of academia who attended the event.

Virtual Biennial SAAP VII & PSI Conference - 2021

Pre-Conference Workshop on Recent Advances in Physiological Techniques

VIRTUAL BIENNIAL SAAP VII & PSI CONFERENCE-2021

March 23-25, 2021

Theme: "Physiological Sciences for betterment of health"

Pre-Conference Workshop on Recent Advances in Physiological Techniques

Date: 23rd March 2021

Session 1: "Cardiovascular Autonomic Function Tests"

Time: 9:30am to 12:30pm

S. No	Title	Speaker	Chairpersons
01	Research ethics in publication	Prof. Yogesh Tripathi India	Prof. Md. Aslam Pakistan
02	Introduction to Autonomic functions Tests: its relevance in basic research and clinical practice	Prof. Ashok Jaryal, India	Prof. A. K. Chandra India
03	Expert Comments and Interaction		Prof. K. K. Das India

Equipment & Technical Support by Department of Physiology, HIMSR and AD Instruments India

Session 2: "Animal Experiments and its Importance"

Time: 2:30pm to 4:30pm

Time: 9:30am to 12:30pm

S. No	Title	Speaker	Chairpersons
01	Importance of Animal experiments in Physiology	Dr. Bhawna Mattoo India	Prof. Arunabha Roy India
02	· Hand on Demonstrations on Rats · Invasive Blood Pressure monitoring NIBP · Blood flow and Cardiac Output measurement		Prof. Mangala Gunatillake Srilanka
03	Expert Comments and Interaction		Prof. Ruhul Amin Bangaladesh

Equipment & Technical Support by Department of Physiology, HIMSR and AD Instruments India

VIRTUAL BIENNIAL SAAP VII & PSI CONFERENCE-2021

Programe Schedule
Day 1: 24th March 2021

S. No	Time (IST)	Event	Speaker	Title
		Inaugural Program		
	9:00 am – 10:30 am	Recitation of Quran	: Imam Rabiya Mosque	
		Welcome address (9:00-9:05AM)	: Pro.f Iqbal Alam, Organizing Secretary	
		Condolence for Late Prof. Arif Siddiqui President, SAAP	: Prof. Kusal K Das, ME Committee, IUPS	
		Address By Dean , HIMSR (9:05-9:15AM)	: Prof. Mridu Dudeja (India)	
		Inaugural Speech by President SAAP (9:15-9:25AM)	: Prof. M. Aslam (Pakistan)	
		PSI-SAAP Report by President PSI (9:25-9:35AM)	: Prof. A. K. Chandra (India)	
		Guest of Honor (9:35-9:45AM)	: Prof. Robert G Carroll (USA)	
		Guest of Honor (President, FAOS) (9:45-9:55 AM)	: Prof. Chau Hun Leem, (South Korea)	
		Special Guest (VC, BLDE University, Bijapur)	: Prof. MS Biradar , (India)	
		Chief Guest (President IUPS) (9:55-10:10 AM)	: Prof. Julie Chan (Taiwan)	
		Presidential Address (CEO, HIMSR) (10:10- 10:25AM)	: Dr. G. N. Qazi (India)	
		Vote of Thanks, Secretary General (10:25AM- 10:30AM)	: Prof. Savithri W. Wimalasekera (Sri Lanka)	
	SESSION A	**CHAIRPERSONS:** **1. Prof. M. Aslam, President, SAAP** **2. Prof. Kusal Das, Member, Education Committee, IUPS** **3. Prof. Rokeya Begum, BPS Bangladesh** **4. Prof. Sunil Kohli, HIMSR, New Delhi**		
1	10:30 am- 11:00 am	Keynote Address 1	Prof. Julie Chan, President, IUPS	The good, the bad and the ugly of nitric oxide in cardiovascular regulation: Perspectives from a physiologist
2	11:00 am- 11:30 am	Plenary Lecture 1	Prof. Robert G. Carroll, Brody School of Medicine Greenville, NC, USA	
3	11:30 pm – 12:00 pm	Plenary Lecture 2	Prof. Dewan S. A. Majid Department of Physiology, Director, Hypertension & Renal Center of Excellence Tulane University School of Medicine New Orleans	
	SESSION B	**CHAIRPERSONS:** **1. Prof. Neelam Vaney, UCMS, New Delhi** **2. Prof. Rita Khadka, President, Physiological Society Nepal** **3. Prof. Sarwar Alam, Jamia Hamdard, New Delhi**		
4	12:00 pm – 12:20 pm	Plenary Lecture 3	Prof. HR Ahmad Sindh Institute of Transplantation and Urology & Dept. of Biological and Biomedical Sciences, Aga Khan University, Karachi	Faculty Institution Relationship: Conception of Humanistic society
5	12:20 pm – 12:40 pm	Plenary Lecture 4	Prof. KK Deepak AIIMS, New Delhi	Physiologists role and participation in WHO global action plan for physical activity 2018-2030
6	12:40 pm – 1:00 pm	Plenary Lecture 5	Prof Somnath Gangopadhay Department of Physiology	Health and safety in Indian SMEs during New Normal Situation.

1.00 pm-1.30 pm (IST)		LUNCH BREAK		
SESSION C			***CHAIRPERSONS:*** ***1. Prof. Savithri, Secretary General, SAAP*** ***2. Prof. Yogesh Tripathy, SMSRH, New Delhi*** ***3. Prof. V P Varshney, MAMC, New Delhi***	
7	1:30 pm – 2:00 pm	Keynote Address 2	**Prof. Sinerik Ayrapetyan** UNESCO Chair, Life Science Yerevan, Armenia	The metabolic driving water efflux from the cell is a fundamental mechanism for metabolic control of semipermeable properties of cell membrane
8	2:00 pm – 2:20 pm	Plenary Lecture 6	Prof. Maulee Arambewela Faculty of Medicine, University of Sri Jayewardenepura, Nugegoda Sri Lanka	Exploring the Tsunami of Diabesity
9	2:20 pm – 2:40 pm	Plenary Lecture 7	Prof. Chandimani Udugodare Faculty of Medicine, University of Sri Jayawardenapura, Sri Lanka	Burden of Obesity on the Respiratory System
10	2:40 pm- 3:00pm	Plenary Lecture 8	Prof. Shelina Begum Bangobandhu Sheikh Mujib Medical University,Bangladesh	Relationship of cardiac autonomic dysfunction with iron status in metabolic syndrome patients
SESSION D			***CHAIRPERSONS:*** ***1. Prof. Amar Kumar Chandra, President, PSI*** ***2. Prof. Ruhul Amin, Bangladesh*** ***3. Dr Sujata Jetley, HIMSR, New Delhi***	
11	3:00 pm – 3:20 pm	Plenary Lecture 9	Prof. Muhammed Ayub President, PPS, Pakistan	Pakistan Physiological Society, Past present and future
12	3:20 pm – 3:40pm	Plenary Lecture 10	Prof. Amal Bera IIT, Chennai	Pannexin-P2X7 receptor-Calcium: a nexus for cell survival and death
13	3:40 pm – 4:00pm	Plenary Lecture 11	Prof Rita Khadka Department of Basic and Clinical Physiology B. P. Koirala Institute of Health Sciences, Dharan, Nepal	Cardiovascular autonomic dysfunction in patients with hypo-and hyperthyroidism
14	4:00 pm – 4:20 pm	Plenary Lecture 12	Dr. Amit Bandyopadhyay University College of Science and Technology	Prediction of Cardiorespiratory Fitness in Sportspersons and Sedentary Individuals: An Indian Perspective
15	4:20 pm – 5:00 pm	Keynote Address 3	Prof. Chandan Sen, ICRME, USA	Tissue Nanotransfection for In Vivo Tissue Reprogramming
16	5:00 pm – 6:00 pm	ANNUAL GENERAL MEETING OF SAAP		

Day 2: 25th March 2021

S. No	Time (IST)	Event	Speaker	Title
SESSION E			CHAIRPERSONS: 1. Prof. Charoo Hans, JH, New Delhi 2. Prof. Mahwish Arooj, VP Pakistan 3. Prof. Zahid Ashraf, JMI, New Delhi	
1	8:30 am - 9:00 am	Plenary Lecture 13	Prof. Jasimuddin Ahamed OMRF, Okhlohama, USA	COVID-19 and Cardiovascular Disease
2	9:00 am - 9:20 am	Plenary Lecture 14	Prof. Sunil Dhungel, Department of Clinical Physiology, Nepal Army Institute of Health Sciences, Kathmandu, Nepal	Cross talk between Covid and Chemosensation
3	9:20 am - 9:40 am	Plenary Lecture 15	Prof. R. V.Kulkarni, BLDEA's College of Pharmacy, Vijayapur	Chronotherapeutic responsive drug delivery systems
4	9:40 am – 10:00 am	Plenary Lecture 16	Prof. Deepthi De Silva Faculty of Medicine, University of Kelaniya, Ragama, Sri Lanka	Role of connexins in inner ear function
5	10:00 am - 10:20 am	Plenary Lecture 17	Prof. G. K. Pal, Program Director, Advance Center for Yoga, JIPMER, Puducherry, India. Dean, Faculty of Medicine, Pondicherry University, India	Dysfunction of Microbiota-Gut-Brain Axis in Clinical Disorders: Role of Sympathovagal Imbalance

SESSION F			***CHAIRPERSONS:*** ***1.Prof. VPVarshney, MAMC, New Delhi*** ***2.Prof. Sunita Monda, LHMC, New Delhi*** ***3. Prof. Sandeep, HIMSR, New Delhi*** ***4. Prof. Himani Ahluwalia, VMMC, New Delhi***	
6	10:20am – 10:40am	Plenary Lecture 18	Prof. Umar Ali Khan Pro-VC, Isra University, Islamabad	Translational physiology research, clinical practice and public health: A Continum
7	10:40am – 11:10am	Plenary Lecture 19	Prof. Gausal Azam Khan Fiji Medical College, Fiji	Stress induced sterile Inflammation and Insulin Resistance: Novel role of von Willebrand Factor
8	11:10am – 11:30am	Plenary Lecture 20	Prof. Samina Malik UCM, Lahore, Pakistan	First Report of Novel PTEN variant in breast cancer from Pakistan: An extrapolative variable of diagnostic significance
SESSION G			***CHAIRPERSONS:*** ***Prof. Musharraf Hussain, HIMSR, New Delhi*** ***Prof. Manisha Jindal, SMSRH, New Delhi*** ***Prof. Zahid Hassan, SAAP, Bangladesh***	
9	11:30am - 11:50 am	Plenary Lecture 21	Prof. Akhtarun Nessa Mymensingh Medical College,Mymensingh	Evaluation of Changes of BMI and serum C-reactive Protein in post-menopausal women
10	11:50pm - 12:10 pm	Plenary Lecture 22	Prof. Suvro Chatterjee	Microfluidics based investigation of vascular diseases process
11	12:10 pm - 12:30 pm	Plenary Lecture 23	Prof. Md. Obaidullah Ibne Ali Rajshahi Medical College, Rajshahi	Study of lung function tests in chronic bronchial asthma with vitamin C supplementation
SESSION H ***NO and Free radicals***			***CHAIRPERSONS:*** ***1. Prof. Somnath Gangopadhyay, University of Calcutta*** ***2. Prof. Ojaswe, VP SAAP, Nepal*** ***3. Prof. Manasi Bhattacharya, AIIMS, Guwahati***	
12	12:30 pm - 12:50 pm	Plenary Lecture 24	Prof. A. Ray, HIMSR, New Delhi	Nitric Oxide (NO) regulates gender based differences in stress susceptibility and adaptation
13	12:50 pm - 1:10 pm	Plenary Lecture 25	Prof. M I Alam, HIMSR, New Delhi	Role of Nitric Oxide and Decorin in Preeclampsia
14	1:10 pm - 1:30 pm	Plenary Lecture 26	Prof. Kavita Gulati, Patel Chest Institute, New Delhi	Newer insights into the neuromodulatory role of Nitric Oxide
1:30 pm-2:00pm(IST)		**LUNCH**		
SESSION I ***Neurosciences***			***CHAIRPERSONS:*** ***1. Prof. Suman Jain, AIIMS, New Delhi*** ***2. Prof Suhel Parvez, JH, New Delhi*** ***3. Prof. Meenakshi Chaswal, ABVIMS, New Delhi***	
15	2:00pm – 2:30pm	**Keynote Address 4**	Prof. Dr. Chae Hun Leem, FAOPS	Physiology into people's life
16	2:30 pm- 2:50 pm	Plenary Lecture 27	Dr. Eric Thelin Karolinska Institute, Stocholm, Sweden	Protein biomarkers of injury in traumatic brain injury management
17	2:50 pm – 3:10 pm	Plenary Lecture 28	Dr. Adel Helmi Department of Clinical Neuroscience Iniversity of Cambridge, UK	Clinical Studies of Neuroinflammation
4:00pm – 4:30 pm		**Valedictory Session**		

“A good physiological experiment
like a good physical
one requires that it should present anywhere,
at any time, under identical conditions,
the same certain and unequivocal phenomena
that can always be confirmed.”

Johannes Peter Müller

Abstract Book

INDEX OF KEYNOTE SPEAKER

INDEX OF KEYNOTE SPEAKER

INDEX OF KEYNOTE SPEAKER

KEYNOTE ADDRESS – 1

Julie Y.H. Chan
Ph.D.
Institute for Translational Research in Biomedicine
Kaohsiung Chang Gung Memorial Hospital
Kaohsiung, Taiwan

Julie Chan received her PhD in Physiology from Washington State University, in the field of neural control of cardiovascular functions. Following one year post-doctoral training at the same university, she returned to Taiwan in 1990 to join the Department of Medical Education and Research at the Taipei Veterans General Hospital as a principal investigator and was promoted to senior (professorial) principal investigator in 1996. In 1998, Julie moved to the Veterans General Hospital in Kaohsiung,

Taiwan, where she served as the Head of the Basic Medical Research Division until 2011 when she took on the current position in the Kaohsiung Chang Gung Memorial Hospital to chair the Department of Medical Research.

Julie Chan's laboratory has a long-standing research interest in brain stem cardiovascular regulatory mechanisms. Her pioneer research work on the roles of brainstem nitric oxide and reactive oxygen species in neural control of sympathetic outflow and blood pressure has made significant contribution to our current understanding of both signals in the pathogenesis of neurogenic hypertension. Her current research interest focuses on the engagement of mitochondria in the development of cardiovascular disorders, particularly in association with metabolic syndrome, chronic inflammation and hypertension of developmental origin.

Her honors include numerous awards for outstanding research the Ministry of Science and Technology of Taiwan, Established Investigator Award and Distinguished Professorship the Chang Gung Medical Foundation, Taiwan. Julie Chan is currently the President of the International Union of Physiological Societies (IUPS, 2017-2022). She has served the Union as the first Vice-President from 2013-2017. Julie was a council member and President of Federation of Asian and Oceanian Physiological Sciences (FAOPS, 2009-2015) and Past President from 2115-2019.

Julie has contributed to the scientific community by publishing more than 220 articles in prestigious journals, including Circulation, Circulation Research, Hypertension, Journal of Physiology and American Journal of Physiology. Julie is an Associate Editor for Journal of Biomedical Sciences and Frontiers in Physiology, Reviewing Editor of Journal of Physiology. She sits on Editorial Board of several prestigious journals, including American Journal of Physiology, Heart and Circulatory Physiology, and Biochemical Pharmacology.

ABSTRACT

The Good, the bad, and the ugly of nitric oxide in Cardiovascular Regulation: Perspectives from a Physiologist

Manifests of body functions represent the outcomes of events that are integrated at multiple levels of systems, organs, tissues, cells and molecules. When these multilevel integrations are executed in "good" rapport, our body functions are operated in the "physiological" zone. "Pathophysiological" conditions will be instigated when they turn into "bad" relationships, leading to disease development. The "ugly" scenario will emerge on break down of the multilevel integration system, which prompts "pathological" states that heads for mortality. One illustrative example of the good, bad and ugly aspects of the multilevel integration system in the operation of body functions is the control of blood pressure (BP). Maintenance of a stable BP requires integration at the level of systems (neural, hormonal, humoral and immune systems); organs (heart, blood vessel, kidney and brain); cells (endothelial cells, smooth muscle cells, neurons, immune cells and perivascular adipocytes); and an array of molecules, including at least nitric oxide, angiotensin II, and superoxide of the reactive oxygen species. Using neural regulation of BP, particularly the role of the rostral ventrolateral medulla in the control of sympathetic vasomotor activity in health and disease as examples, the good, bad and ugly roles of NO in the integrative system for the control of blood pressure will be highlighted in this presentation.

PLENARY LECTURE - 1

Robert G. Carroll

Ph.D., Brody School of Medicine,
East Carolina University, Greenville,
North Carolina, USA

Professor of Physiology and Associate Dean for Medical Student Education, Brody School of Medicine at East Carolina University, USA. Rob currently chairs the Education Committee of the International Union of Physiological Sciences and is a past chair the Education Committee for the American Physiological Society. He was editor of the journal "Advances in Physiology Education" from 2008-2013. In the past, he served on the USMLE Step I Physiology Test Material Development.

Committee of the National Board of Medical Examiners, and as Secretary for the International Association of Medical Science Educators. In 2002, he was recognized in the inaugural class of Master Educators at the Brody School of Medicine and received the Arthur C. Guyton Physiology Educator of the Year from the American Physiological Society in 2004, the Outstanding Alumni Award from the University of Medicine and Dentistry of New Jersey in 2005, the Scholar-Teacher Award from East Carolina University in 2007, was recognized as a Master Educator by the International Association of Medical Science Educators in 2013. He was selected as the 2014 Claude Bernard Distinguished Lecturer by the Teaching Section of the American Physiological Society and as the recipient of the Robert J Glaser Distinguished Teacher Award by the Association of American Medical Colleges in 2018.

ABSTRACT

Physiology benefits from the shift to Competency - Based Education

In the USA, a shift to competency-based medical education began around 2010, and the discipline of physiology remains strongly represented and respected. Our national medical education body conducts an annual survey of graduating medical students about all aspects of their educational experience. In this survey, student report that of the 14 disciplines listed, pathophysiology was #1 in preparing students for clinics, and physiology was #3. This ranking has persisted for over 6 years in spite of shifts in instruction to more learner-centered formats. Physiologists do not have to defend the discipline – only ensure that the instruction remains relevant to student needs. Part of this requires physiologists to understand that the shift from learning objectives to competency-based education is more than semantics. The prior role of physiologists in medical and professional programs has focused, often exclusively, on medical knowledge. The competency-based educational paradigm requires that we retain our focus on the knowledge needed for clinical practice, but also extend our educational responsibilities to the other competency domains of interpersonal interactions, communication skills, professionalism, and practice-based learning and improvement. Physiologists are already familiar with a competency-based educational program, as this is how we teach our MS and PhD students. The change to competency-based education will require physiologists to teach medical students more like we teach our graduate students, and to embrace the opportunity to develop the next generation of knowledgeable, effective, and compassionate care givers.

PLENARY LECTURE - 2

Dewan Syed Abdul Majid

MBBS, Ph.D., FAHA, FASN

Dr. Majid received his MBBS degree from the Sylhet Medical College under the University of Chittagong, Bangladesh in 1998. He received his PhD degree in Cardiovascular and Renal Physiology from the University of Leeds in UK in 1989 and joined the Department of Physiology in the Tulane University School of Medicine at New Orleans, Louisiana in USA in 1990 and rose at the academic rank of full professor in year 2007.

He is serving as the Director of the Phenotyping Core Facilities in the Tulane Hypertension and Renal Center of Excellence. Currently, he is also serving as the Visiting Professor of Medicine, B.M. Patil Medical College, BLDE University, Karnataka, India. Before developing his career as Physiologist, he also worked as a clinician in the Surgical departments, first at Sylhet Medical College Hospital in Bangladesh and then at AlFatah Hospital in Libya. Over the long period of academic career at Tulane, Dr. Majid has established himself as an active researcher in the fields of 'Cardiovascular and Renal Physiology' and more specifically in the field of 'Renal Mechanism of Hypertension'. The overall activities in his laboratory are mainly focused on the elucidation of the intrarenal mechanisms regulating renal hemodynamics and renal function and to define how a derangement in such regulation involves in the pathophysiology of many renal disorders including the development of hypertension. His long career in research activities have led to discover many significant scientific facts that implicates in the renal mechanism of the development of hypertension, which can summarized as follows: 1) Nitric oxide (NO) mediates pressure natriuresis mechanism in the kidney, 2) Physiological implications of reactive oxygen species (ROS) in the regulation of kidney function, 3) Imbalance of NO and ROS generation in the kidney determines the pathophysiology of hypertension, 4) Physiological role of various cytokines, particularly tumor necrosis factoralpha (TNFα) in regulation of kidney function and the 5) Regulation of intrarenal angiotensinogen production by TNFα receptors in the kidney and its implications in salt-sensitive hypertension. His research works in the laboratory has been supported by grants from different funding organization such as National Institution of Health, National Heart Lungs and Blood Institute, National Institute of General Medical Sciences, American Society of Hypertension and National Kidney Foundation. His research works yields over 240 publications (full papers, book chapters and scientific abstracts etc.) in many national and international peer reviewed journals. He served in the Editorial Boards of American Journal of Physiology, Journal of Hypertension, Journal of Clinical & Experimental Pharmacology & Physiology (CEPP) and the Antioxidant Journal and many other national and international journals. He also served as guest editor of many journals including CEPP, Antioxidant, Advanced Research in Physiology etc. He received many awards and honors in his research career including, Harry Goldblatt Award for Cardiovascular Research from American Heart Association, Hoechst Marion Roussel Scholar Award from American Society of Hypertension, Prof S. C. Mahalanobis Memorial Oration award from the physiological Society of India and Life-time Academic Achievement award from Bangladesh Medical Association in North America. He is the member and fellow of American Heart Association, American Society of Nephrology, Council of High Blood Pressure Research, and American Physiological Society.

ABSTRACT

The Physiological Role of Cytokines During High Salt Intake.

Although cytokines are generally considered to play their roles in many pathological conditions, the physiological role of many cytokines in regulating many organs' function including the kidney is increasingly recognized in recent days. Chronic high salt (HS) intake in diets induces an immune response that activates the mononuclear phagocyte system (MPS) cells to produce many cytokines including tumor necrosis factor-a (TNF) that appears in the circulation in its soluble form (sTNF). In our laboratory, we have also demonstrated that intravenous administration of a recombinant TNF in mice induces natriuretic effect which is prevented in mice pretreated with a TNF inhibitor, etanercept or in mice lacking TNF receptor type 1 (TNFR1) confirming that such natriuretic action of TNF is mediated by activation of TNFR1 in the renal tubule.

It has been shown that HS (4% NaCl) diet alone for 2 weeks increased MPS cell infiltration in the renal tissue in mice and this is associated with increases in the circulating sTNFα level in the plasma. Systemic administration of a NO inhibitor (nitro-L-arginine methyl ester, L-NAME) acutely in mice was shown to cause an increase in plasma sTNFα level which induces a natriuretic response as this response was seen attenuated in etanercept pre-treated mice. HS intake is usually considered as an aggravating factor to induce inflammatory renal injury. However, our recent findings in the laboratory have shown that during HS intake, the cytokine levels (TNF-α, interleukin-6, interleukin-10 etc) in renal tissues (measured using ELISA kits and expressed in pg/mg protein) were significantly less both in wild-type (WT) mice and in mice lacking eNOS enzyme (NO deficient mice). These findings indicate that HS induces a downregulation of cytokines in the kidney. Such HS induced reduction in cytokines, particularly TNF-α (a natriuretic agent), would facilitate more salt-retention and thus, leading to salt-sensitive hypertension in NO deficient conditions. Very recently, we have also observed that the natriuretic response to acute intravenous infusion of isotonic saline volume in mice is associated with increases in urinary excretion rate of TNFα and such natriuretic response is prevented in etanercept treated mice. These findings demonstrate for the first time that an intravenous saline volume infusion resulted an increase in TNFα level in plasma and in urine. Cumulatively, these findings strongly support a physiological role for circulating sTNFα in HS induced natriuretic responses which suggest that an increase in sTNFα level induces salt excretion by activating TNFR1 and thus serves a protective role by minimizing salt retention during chronic HS intake.

PLENARY LECTURE - 3

H R Ahmad

Sindh Institute of Transplantation and Urology, and
Department of Biological and Biomedical Sciences,
Aga Khan University, Karachi-Pakistan

HR Ahmad is a double doctorate in Physiology and Medicine from the Ruhr University Bochum, Germany. He was awarded FCPS in Physiology from College of Physicians and Surgeons. His original research dealt with the anion-exchange mechanisms contributing to the brain ECF homeostasis, control of breathing and coronary blood flow. His research was funded by the German Research Council and Max Plank Institute, Dortmund.

He is a disciple of HH Loeschcke and DW Luebbers. He has acquired vast experience in research-based-education from the institutions in Germany, Pakistan, USA, UK, UAE, Canada and Malaysia over a span of 40 years.

His current research work deals with cardiac biomarkers of heart failure, atheroma, pharmacogenomics, evolutionary proteomics and modeling in research-based education. He is fond of curriculum and faculty development being driven by unfolding their creative energy. He prefers education to training mode of learning. He has developed multidisciplinary integrated concepts in domains of cardiovascular, respiration, neuroscience, biophysics and critical thinking for MPhil and PhD students, medical students and residents. He is keen to develop bridges between natural, social and humanities sciences.

Prof HR Ahmad is a founding chairman of Pakistan Physiological Society at AKU [1987], vice president of PPS [1989] and SAAP [2008-2010], life member of Indian Association of Physiologists and Pharmacologists [1976] and member German Physiological Society [1974]. His contributions are 58 publications, >70 abstracts, >60 invited lectures, 10 Book Chapters,

3 awards and citation index 570.

ABSTRACT

Faculty Institution Relationship : Conception of a Humanistic Society

Truly, one is born twice: biologically when one enters this world and intellectually when one enters the alma mater to find the essence of life. Thus, the enabling environment of institutions should discover and nurture faculty and students' creative intellect through research, learning, and public service. Not surprisingly, in today's world we wonder whether many countries are richly endowed because their universities are intellectually and creatively rich.

In this context, let us invite Noam Chomsky to introduce Bertrand Russell. His humanistic conception of should be understood in context of a gardener nurturing a young tree. It will develop into an admirable form, given proper soil, water, air and light. This analogy refers to an individual's growth which for too many seems to be difficult. This is because the soil and the freedom, required for it, are immeasurably difficult to find or provide.

The solution may lie in Bertrand Russell and Wilhelm von Humboldt's libertarian concepts of education. They define education as an activity directed towards the world that we want our efforts to create. It should not aim at passive awareness of dead facts. Its goal should be to elicit and fortify whatever creative energy a human possesses. In the modern world, the principle of growth in most of us is hampered by tradition imbibed by laws of the simpler age and institutions built around it.

Can the solution be an ecofriendly industrial civilization? Can it free human beings from the worst form of servitude by liberating the creative energy leading to social reconstruction? Industrial civilization can challenge the old bonds of authority and liberate human beings from outdated rituals and customs. It has a capacity to enable a population to enjoy variety from basics to luxuries depending on the nature of the guardian of the state.

The institution-faculty-relationship might provide a road map for a humanistic society where science could grow from the soil of arts. It may help the society then to nurture a guardian of a republic as a “mother” who could provide education, health and infrastructure for all citizens as children. In turn, they provide resources to the republic to sustain the loop of public service.

For this to achieve, we need an integration of domains of humanity, natural and social sciences in the form of an integrated new curriculum. It should lie at the centre of the academic pursuits of the university to provide a holistic research based education. This model of education should replace the prevailing colonial compartmentalized training systems. Education should be preferred because it liberates mankind to recognise oneself and enables to conceive a new society.

Social sciences and humanities can save us from the onslaught of self-alienation, casual thinking and intolerance. This may help us to come out of the current frames of thinking for a better human civil society using a bottom up approach of egalitarian means of wealth and income leading to education and jobs based life style.

In summary, we should work on a developmental agenda so that the journey from primary to university education could chart a road map to lift us from conditions that support stagnation, elitism and nepotism. This enlightened pathway will seed the conception of a humanistic civil society for all children of the mother state.

This is dedicated to HH Loeschcke and AS Paintal for the art of giving humanness to humanity through the mentorship of science. The author is a professor of physiology at SIUT and AKU Karachi Pakistan.

PLENARY LECTURE - 4

Dr. K. K. Deepak

MD, Ph.D., FAMS, DSc

Prof. & Head, Department of Physiology

All India Institute of Medical Sciences (AIIMS), New Delhi, India

Dr. Deepak obtained his MBBS degree from GMC, Bhopal in 1981 and MD degree in 1984 & PhD Degree in Physiology in 1990 from AIIMS, New Delhi. He has been awarded DSc degree from SVYASA University from Bengaluru. He has been serving as faculty in the Dept of Physiology since 1987. Currently he is heading the department and also serving as Dean, Examinations at AIIMS New Delhi.

Dr. Deepak set up the Autonomic Function Lab in the department of Physiology in 1989. It was the first lab of its kind in the country. This lab provides clinical services, research facility and training. He has been directing research into the Autonomic investigation of various clinical disorders. He pioneered the development of Heart Rate Variability (HRV) and disseminated it throughout the country. Realizing the need of vascular assessment in autonomic testing, he set up another lab for evaluating human vascular functions in 2000. His team lead to development of indigenous software for quantification of autonomic tone by HRV & vascular tone by Blood Pressure Variability (BPV). His team has developed a cloud base program for centralized HRV system for country.

He has been interested in innovations in medical research and worked with Indian Institute of Technology (IITs) & other engineering institutions. He devised blood pressure simulation model. He also devised the techniques of EMG biofeedback for patients of hand dystonia and electro-gastro-graphy (EGG) for irritable bowel syndrome. He has worked on brain stimulation by using vagal stimulation and yogic breathing. Currently his group is exploring the role of HRV biofeedback in various disorders.

He has continued interest in basic research in the field of Yoga & Meditation and its clinical application. He is also investigating the role of yogic manoeuvres for their applications during space and gravitational exposures.

He has significantly contributed in the field of Medical Education and published several studies.

He delivered several invited talks in various countries including UIC Peoria (1991), Harvard Medical School (2009) and UCSD, San Diego (2016). He has been instrumental in bringing the MOU between AIIMS New Delhi and UCSD, San Diego, USA and with NIT Jallandhar for pursuing space physiology research. His group is pursuing research in the field of space physiology involving LBNP, LBPP and tilting protocols. He has filed a patent for a pro-gravity body gear to create gravity during microgravity exposure in 2016 and same has been published in 2018. He is co-inventor in 3 more patents pertaining to exercise and space physiology, which have been filed. He is interested in modelling human systems.

Recently he has served as Chairman for the committee to finalize various Physical activity and their assessment protocols under FIT India program of GOI. The age-appropriate protocols are available on Fit India website.

He has published 187 full length indexed research papers which have more than 3400 citations with H index of 31 in Google Scholar.

ABSTRACT

The Role and Participation of a Physiologist in WHO Global Action Plan for Physical Activity 2018-2030

According to WHO (2017 report), over 61% of all deaths in India are due to non-communicable diseases (NCDs) including lifestyle diseases. The same may be true with other countries in this region. The best antidote to all these maladies is to make people physically fit. Exercise is not only the medicine, but in true sense it is capable of shaping one's physiology. The following are the ways and means that describe the role of a physiologist in this domain.

Fitness is the need of one and all. Physical fitness is the ability to perform day to day normal activities with vigor, alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and meet any unforeseen emergencies. Physical fitness is composed of various attributes. If we are healthy and physically fit, we can perform our responsibilities more effectively and efficiently- be it personal, social or official. Physical fitness is natural and comes easy way.

Each one of us can enjoy good physical fitness provided one pays attention to it on regular basis towards achieving the set goals. In simple terms, human body is like a machine which keeps on working efficiently. However, like any other machine it needs maintenance which can be done comfortably with a little effort with continuity and consistency.

WHO Global action plan on physical activity and health 2018-2030

WHO has published their "WHO Global action plan on physical activity and health 2018-2030: More active people for a healthier world." The goal is to reduce Physical Inactivity across the globe by 10% by 2025 and 30% by 2030, setting out a detailed plan with 4 objectives and 20 recommended policy actions **(1).**

Fit India Program

The Indian Fitness Protocols and Guidelines for imparting and measuring physical fitness are designed towards achievable set goals which are easy, comprehensive and practical for all age groups (2,3). Fortunately, I have been the part of the team which has prepared the Fitness protocols for all age groups for India. The protocols contain description of information on how to assess one's own physical fitness. This can be quantified in numbers. They have detailed description of physical activity procedures including Yoga. The protocols are available in 3 booklets: for 3 age groups covering from childhood to elderly people. While preparing them we paid due consideration to the safety points and precautions from physiology point of view.

The role of a Physiologist

The professional association should come forward to implement this program in this part of world. There are associations and organizations which are engaged in public enterprise involving physiologists. The most commonly sought physiologist's expertise is in the field of exercise physiology for healthy individuals and patients. Physiology can help ensuring safe and effective workouts for healthy individuals in our society. Some of the USA based physiological societies also engage in regulation and implementation of physiologists' role in public domain. The American Society of Exercise Physiologists has evolved the regulatory measures and use physiologist's expertise for public cause. The exercise physiology standards emphasize the practice and use of 'exercise as medicine'. According to this society “Exercise physiology means the identification of physiological mechanisms underlying physical activity, the comprehensive delivery of treatment services concerned with the analysis, improvement, and maintenance of health and fitness, rehabilitation of heart disease and other chronic diseases and/or disabilities, and the professional guidance and counsel of athletes and others interested in athletics, sports training, and human adaptability to acute and chronic exercise” (4).

Physiologists should take help of their associations and their local chapters/branches to participate in innovative or traditional manner t impart knowledge of physiology to the society (5). The following may be some possible action plans:

- Tie up with public or private organizations and create space for public engagement.
- Involve the school children through participatory learning of Physiology for health and fitness.
- Adopt a local community (medical campus) or nearby school or locality for imparting physiology education and organizing innovative hands on- educational program.
- Make physiology education as healthy entertainment through street plays. Such programs will not only help in physiology education but also bring healthy entertainment. Organizing health fairs or such events is another good opportunity.
- Create newer physiological interventions e.g. use of complementary medicine, use of fitness protocols for improving health etc.
- Create and run regular health and fitness clinics for the benefit of the society. For example such facilities are already working at AIIMS, Delhi and BPKHIS, Nepal and several other places.
- Institute such measures which may serve as advisory function for regulating bodies and Govt.
- Collect data on all such activities and create evidence by publishing the same.

These activities also blend with our Goal i.e. “We need to create the physiological evidence to convince the people. To create competent and compassionate physiologists who can indulge in societal engagement to impart such endeavors which will impact health care through dissemination of physiological knowledge and integration of physiological practices with other components of health care delivery” (5).

Physiology is not only the basis of all medicine, but a pathway to move towards positive health. Let us help ourselves and WHO by achieving these goals by 2030.

PLENARY LECTURE - 5

Dr. Somnath Gangopadhyay

M.Sc., Ph.D., FABMS, FCIEHF, C.ErgHF

Professor and Former Head, Department of Physiology; In charge Occupational Ergonomics Laboratory : Coordinator Sports Science Department, University of Calcutta

Dr. Somnath Gangopadhyay began his career as an Ergonomist and Work Physiologist in a renowned steel plant under the Steel Authority of India Limited at Bhilai, India. After working for more than 5 years, He joined the University of Calcutta in 1997 as a Lecturer in Ergonomics in the Department of Physiology. Presently he is working as Professor in the same department of the University.

Till date he is actively involved in extensive research activities, which is evident from research publications (more than 250) of his work in national and international peer reviewed with high impact factor journals and books.

He has been conferred Fellow, Chartered Institute of Ergonomics and Human Factors (FCIEHF) and awarded Chartered status (C.ErgHF) title by Chartered Institute of Ergonomics and Human Factors, United Kingdom.

He has also been conferred FABMS title by the Indian Association of Bio medical Scientists (IABMS) for his contribution in the field of Biomedical Sciences and particularly in Ergonomics.

He also being awarded the ' Ramendra Sundar Sinha Memorial Oration' by The Physiological society of India and the 'Prof.

S. Subhramanian Memorial Oration' by The Indian Association of Bio medical Scientists.

He is actively involved in renowned international societies like International Commission on Occupational Health, International Ergonomics Association and South Asian Association of Physiologists.

Presently he is holding the post of the Secretary of Scientific Committee on SME and Informal Sectors of International Commission on Occupational Health (ICOH) and Honorary General Secretary of the Physiological Society of India . He was Treasurer and Assistant secretary of Indian Society of Ergonomics (ISE) for twice, now he is one of the Executive Committee members of ISE. He has been elected as a member of ERGONOMICS Section, Bureau of Indian Standards (BIS), Government of India and also the expert member of the Committee of Rural Bio Technology of Department of Bio Technology, Government of West Bengal.

Till now, he is extending his expertise in the field of ergonomics for the benefit of more than 25 national and international industries in different sectors and domains.

He is visiting regularly different countries like USA, UK, Taiwan, Austria, South Africa, Netherlands, China, France, Indonesia, Malaysia, Bangladesh, Ireland, Algeria, Turkey etc for different academic purposes. He is receiving scholarships from different renowned international Universities, Organizations and Institutions to deliver lectures abroad as distinguished speaker and Visiting Faculty.

In 2016 he was invited to deliver lecture as Guest Speaker in the School of Design at the University of Loughborough, United Kingdom. In 2017, he was invited to deliver lecture at the Chartered Institute of Ergonomics and Human Factor (London Ergonomics Group), London and UK Royal Navy, United Kingdom.

Currently, he is acting as the consultant editor of the International Journal of Occupational Safety and Health (IJOSH), Associate Editor of BMC Musculoskeletal Disorder and also serve different national and international journals as a member of the editorial board.

ABSTRACT

Health and Safety in Indian SMEs during New Normal situation

A new normal is a state to which an economy and society settles following a crisis The small and medium businesses (SMEs) in India include 63.4 million units and accounts for nearly 30% of India's GDP, employing about 460 million people.
In COVID 19 time, many small and medium enterprises have temporarily shut their businesses
The survey drew responses from close to 500 Indian micro, small and medium enterprises (MSMEs) in the first two weeks of June 2020.
One third of the respondents confirmed that they are temporarily shutting their business until normalcy resumes
Characteristics of New Normal

Following characteristics of new normal has been identified

- Lower Consumption
- Digital Transformation Accelerates
- Health Check Besides Security Check
- Work From Home

It has been presumed that after COVID 19 the following incidents may occur:

- Stronger Will Become Stronger: The current economic disruption will make those with a strong balance sheet, stronger. They will be able to manage cash flows in this situation, and then procure resources at a lower cost.
- Era of Personalized Marketing: Right product, right time, right context. No-wastage-media will be the new mantra

To survive such conditions SME must observe and implement of six Ergonomic Considerations

- Work Planning
- Layout
- Hardware
- Environmental
- Health and Wellbeing
- Program Management and Sustainability

Implementation of these considerations may improve the economic crisis of SMEs

KEYNOTE ADDRESS - 2

Prof. Sinerik Ayrapetyan

Life Sciences International Postgraduate Educational Ceneter,
UNESCO Chair in Life Sciences
E-mail : info@biophys.am
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Prof. Sinerik Ayrapetyan has received his PhD in Cell Biophysics in the Institute of Physiology of Ukraine Academy of Sciences, Kiev during the period of 1966-1970. Currently, he is the coordinator of UNESCO Chair at Life Sciences International Postgraduate Educational Center, Yerevan, Armenia. His research has included the study of metabolic regulation of cell function in norm and pathology.

He is serving as a Chief Editor for the Journal of "Bioequivalence and Bioavailability", "Biomedical Engineering Current Research", "Basic, Applied Pharmacy and Pharmacology" and "Pharmacology & Pharmaceutical Research". He is also an editorial member of several reputed journals like "Electromagnetic Biology and Medicine", "BBA General Subjects", "Clinical Investigations", "Genetic Engineering and Biotechnology" etc. Prof. Sinerik Ayrapetyan is a member of a number of international societies, such as International Society of Invertebrate Neurobiology (ISIN), International Society for neurochemistry (ISN), European Society for Neurochemistry (ESN), International Brain Research Organization (IBRO), International Union of Pure and Applied Biophysics (IUPAB), Bioelectromagnetics Society (BEMS), WHO International Advisory Committee on Electromagnetobiology. He has authored 7 international books and 115 research articles.

Research interest

Current research interest is "Intracellular Signaling System in Norm and Pathology".

ABSTRACT

"The Metabolic Driving water efflux from the cell is a Fundamental Mechanism for Metabolic control of Semipermeable Properties of cell Membrane"

It is known that cancer cells are characterized by overhydrated state and contain more than 90% of water (Kircuita et al., 1973). Cell overhydration serves as one of the diagnostic parameters for carcinogenesis (Damadyan 1971). However, the nature of metabolic mechanism, the dysfunction of which causes generation of cancerous cells has not been elucidated yet. The discovery of our laboratory reveals that the electro-genic Na/K pump-induced net water efflux from the cell is a fundamental mechanism controlling semipermeable properties of cell membrane, the dysfunction of which is a common consequence of cell pathology, including cancer.

Two quantum-sensitive families of high affinity (10-11-10-10M and 10-9-10-8M) ouabain receptors in cell membrane have been identified which, unlike low affinity ouabain (>10-7M) receptors with inactivation effect on Na efflux, have activation effect on Na efflux, which is accompanied by water efflux from the cells. The highest affinity receptors stimulate Na/K pump by activation of cGMP-activated Ca efflux from the cell, while the receptors with middle affinity stimulate the cAMP- activated Na/Ca exchange in reverse ® mode, which controls Na gradient on membrane by pushing out Na and decreasing membrane permeability for these ions.

Thus, the dysfunction of cGMP-dependent Ca efflux from the cells leading to cAMP-dependent RNa/Ca exchange-induced elevation of intracellular Ca is suggested as a primary mechanism for cell pathology, including cancer and cGMP-stimulated Ca efflux from the cell is considered as an effective tool for detection of earlier periods of carcinogenesis, thus becoming a target for tumor therapy.

PLENARY LECTURE - 6

Dr. Maulee Hiromi Arambewela

MBBS (SJP), MD (Col), MRCP (UK)

Consultant Endocrinologist, Senior Lecturer, Department of Physiology

Faculty of Medical Sciences, University of Sri Jayewardenepura

Undergraduate Qualifications

- MBBS -Faculty of Medical Sciences University of Sri Jayewardenepura – Graduated in 2007 with Second class (Upper) honors at the final MBBS examination

Post Graduate Qualifications

- MD (Medicine) 2014
- MRCP (UK) 2015
- Board Certified as a Consultant Endocrinologist 2019

Overseas Training - Royal Hallamshire Hospital Sheffield , UK

Memberships held

- Council member, Sri Lankan College of Endocrinologists 2021
- Member of International Society of Clinical Densitometrists (ISCD)
- Member of Sri Lanka Medical Association
- Member of Royal College of Physicians

Positions Held

- Assistant Treasurer, Sri Lanka College of Endocrinologists 2021 to date
- Sri Lankan representative for ISCD Asia Pacific Regional Panel 2020-2021
- Secretary of the Sri Lanka Diabetes Federation 2019

Areas of interest

Diabetes (type 1 and type 2), Osteoporosis, Obesity

ABSTRACT

Exploring the Tsunami of "Diabesity"

The pandemic of "Diabesity" is a major challenge we face in the 3rd millennium. The term coins the intricate relationship between obesity and diabetes. Global prevalence of type 2 diabetes (T2DM) is estimated to double by the year 2045, while prevalence of obesity has tripled over the last 40 years. What is more disturbing is the alarming increase in youth onset obesity and diabetes. South Asia is no exception and set to be hit hard.

Obesity plays an important role in the pathogenesis of T2DM. Visceral fat manifesting as central obesity secretes substances such as fatty acids, adipokines and numerous inflammatory mediators regulating insulin resistance and inflammation giving rise to metabolic complications such as diabetes, hypertension, dyslipidemia and cardiovascular disease. South Asians are at higher risk of developing central obesity due to higher percentages of fat mass and limited capacity of subcutaneous fat storage paving the way for adverse metabolic profiles. There is growing concern on the increasing gestational diabetes mellitus, maternal obesity and the role of epigenetics in development of metabolic complications in offspring and thus transmission of these to the next generation. Genetic, epigenetic, phenotypic predisposition combined with over nutrition, lack of exercise predisposes the youth to obesity, diabetes and other metabolic complications causing huge impact on individuals, families, societies and nations. Awareness and prevention are probably the best vaccines against tackling this pandemic.

PLENARY LECTURE - 7

Chandimani Undugodage

MBBS, MD (Medicine), MRCP (UK), FRCP (Lon)
Consultant Respiratory Physician & Senior Lecturer
Faculty of Medical Sciences, University of Sri Jayawardenapura

Honors

- Council Member of the Ceylon College of Physicians from 2016 to date
- Honorary Joint Secretary of the Ceylon College of Physicians - 2014 and 2015
- Member of the Specialty Board in Respiratory Medicine, PGIM -2016 -2018
- Clinical examiner for the MRCP UK PACES examination
- Postgraduate trainer in sleep medicine for Senior Registrars in Respiratory Medicine
- Chair – Sleep & Clinical Physiology Assembly – Sri Lanka College of Pulmonologists Research interests – Sleep disordered breathing, OSA

Other

- Pioneered the establishment of sleep services at the Colombo South Teaching Hospital and at the Central Chest Clinic, Colombo.
- Runs a specialized sleep clinic and is supervising 2 sleep laboratories and a home sleep testing service.
- Instrumental in commencing the first sleep multi-disciplinary team (MDT) discussion at the Colombo South Teaching Hospital.

Awards

- Gold Medal for Best Overall Performance at the Final MBBS.
- Silver Medal at SLMA Innovations 2020

ABSTRACT

Burden of Obesity on the Respiratory System

"Under loves heavy burden do I sink" -
Romeo - William Shakespeare

Obesity is a burden. It adds to the health and the socio-economic burden in the world. With the rapid rise in obesity across the globe, a sound knowledge on the impact of obesity on health is vital.

Obesity affects the respiratory system by deposition of fat around the pharynx and the thoracic cavity, leading to mechanical compression of the lungs, diaphragm and the upper airway. This gives rise to disorders of ventilation and sleep disordered breathing. The pulmonary function is affected, with low lung volumes especially expiratory reserve volume and functional residual capacity. Further the adipose tissue acts like an endocrine organ, resulting in systemic inflammation.

Obesity is the commonest risk factor for the development of obstructive sleep apnoea and obesity hypoventilation syndrome. Obesity affects airway inflammation with adverse effects on asthma and COPD. It is known to increase the risk of respiratory infections. Respiratory complication in an obese patient undergoing surgery is much higher and this is especially important with the rise in the number of bariatric surgeries.

Caring for obese patients is challenging, thus a good understanding of the effects of obesity on the respiratory system is important to effectively manage such patients.

PLENARY LECTURE - 8

Prof. Shelina Begum
Professor of Physiology,
BSMMU, Dhaka

ABSTRACT

Relationship of Cardiac Autonomic Dysfunction with Iron Status in Metabolic Syndrome Patients

Background: Concomitant occurrence of some interlinked cardiovascular risk factors in an individual is termed as metabolic syndrome (MetS) and it is one of the major public health challenges worldwide nowadays. These patients have potential risk of developing cardiac autonomic dysfunction characterized by low heart rate variability and iron overload. Both of them may further increase the risk of cardiovascular morbidity in this group of patients.

Objectives: To observe the relationship between cardiac autonomic nerve function and iron status in MetS patients.

Methods: This cross-sectional study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Shahbag, Dhaka from March, 2019 to February, 2020. For this study, 35 MetS female patients aged 25 to 45 years were enrolled in MetS group and equal number of age and sex matched apparently healthy subjects constituted comparison group. Cardiac autonomic nerve function was assessed by analyzing frequency domain parameters of Heart Rate Variability (HRV). HRV was recorded and analyzed by a data acquisition device, Powerlab 8/35, AD instruments, Australia. For evaluation of iron status, serum iron, serum ferritin, total iron binding capacity (TIBC) and transferrin saturation (Tsat) were measured. Data were expressed as mean ± SD. Statistical analysis was done by Independent sample 't' test and Pearson's correlation coefficient test as applicable. Results: In this study, resting pulse rate, systolic blood pressure (SBP), diastolic blood pressure (DBP), LF norm and LF/HF were significantly higher ($p \leqslant 0.001$) and total power, LF power, HF power, HF norm were significantly lower ($p \leqslant 0.001$) in MetS patients compared to healthy subjects. Among the parameters of iron status, serum ferritin was significantly higher ($p \leqslant 0.05$) and serum TIBC was significantly lower ($p \leqslant 0.05$) in MetS patients than healthy subjects. On correlation analysis, only the serum TIBC showed significant ($p \leqslant 0.05$) positive correlation with total power, LF power, HF power, HF norm in MetS patients.

Conclusion: This study concludes that cardiac autonomic dysfunction may be related to higher iron status in MetS.

Keywords: Metabolic syndrome, iron status, heart rate variability

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PLENARY LECTURE - 9

Dr. Muhammad Ayub

MBBS (Pesh), M. Phil (Pb)

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Born in 1954, he graduated from Khyber Medical College and obtained degree of MBBS in 1978 from University of Peshawar, Pakistan. After one year house job in Medicine and Surgery at DHQ Teaching Hospital Abbottabad, joined Ayub Medical College Abbottabad in 1979 as a pioneer faculty as Lecturer in Physiology.

During his early service at Ayub Medical College, he obtained M. Phil. in the subject of Physiology from Postgraduate Medical Institute, University of Punjab, Lahore. He continued his uninterrupted teaching career in Ayub Medical College and was promoted to Professor, Vice Principal, Principal, and Chief Executive Officer of Ayub Medical College & Hospital Complex Abbottabad. He also remained Dean Basic Sciences Khyber Medical University up to 2015.

Prof. Ayub is a founding member, and currently President of Pakistan Physiological Society for the 3rd time as a tribute to his services for Physiology and Medical Education besides being a past Vice President of South Asian Association of Physiologists. He is also a Member of American Physiological Society. He won 'XVTH Star Award 2004' and 'Millennium Life Time Award 2007' from South Asia Publications, Pakistan.

He pioneered introduction of 'Entry Test/MDCAT' for admission in medical colleges in 1996 for the first time in Pakistan, and remained affiliated with the test conduction in the province till his retirement from Ayub Medical College. He has on his credit more than 42 years significant work on Modular, Integrated, Problem-based, Community-oriented, and Learner-based education besides traditional medical education.

Author of more than 30 research papers and two books, he is Editor of Pakistan Journal of Physiology (Pak J Physiol/PJP) and Kashmir Journal of Medical Sciences (Kashmir J Med Sci/KJMS). He was Chief Editor and is Advisor of Journal of Ayub Medical College Abbottabad (J Ayub Med Coll Abbottabad/JAMC).

Prof. Muhammad Ayub has served Ayub Medical College, Abbottabad, and AJK Medical College Muzaffarabad. Currently he is serving Muhammad College of Medicine, Peshawar as Professor of Physiology and Dean Medical Education. His special interests are Respiration, Altitude, Exercise, Kidney, and GIT Physiology, Distant/online education, Innovations in Medical Education, Curriculum development, Medical editing, Medical publishing, and Research.

ABSTRACT

Pakistan Physiological Society - Past, Present, and Future

Formation of Societies at scientific, research, education, institution or community brings people of similar interests closer together for exchange of their knowledge, and experiences, and paving the path forward for their welfare. The professional Societies help in bringing up individual efforts to a more effective platform.

Pakistan Physiological Society (PPS) was founded in 1987 as the only registered society of physiologists of Pakistan. Besides its role to suggest steps to improve Physiology Teaching and Curriculum development, it regularly holds Biennial Scientific Conferences. It was the 11th Biennial Conference held in Islamabad where the South Asian Association of Physiologists (SAAP) came into existence.

Introduction of 'Alamdar Hussain Prize' and 'Attique Younas Shield' revived the scientific research in the field of physiology. Quiz competitions, seminars, workshops and webinars are well-attended and ranked as 'fruitful'. These activities are free for member physiologists.

Pakistan Journal of Physiology is the scientific journal published quarterly by the Society. It is recognized by Higher Education Commission (HEC) and Pakistan Medical Commission (PMC) as a Standard Medical Journal. The Journal is currently placed in category 'Y'.

The PPS is working hard for keeping pace with rapidly growing scientific knowledge and teaching methodology and pioneered some modern tools for medical education

PLENARY LECTURE - 10

Amal Kanti Bera
Professor
Department of Biotechnology
Indian Institute of Technology Madras
Chennai - 600 036, Tamil Nadu, India

ABSTRACT

Pannexin - P2X7 receptor - Calcium: a nexus for cell survival and death

Pannexins are the major ATP release channel in many cell types including astrocytes. Extracellular ATP acts as a ligand for purinergic P2X and P2Y receptors. The opening of ATP-gated P2X7 receptor (P2X7R) causes an influx of Ca2+, which in turn activates pannexin-1 (Panx1). This interdependency of P2X7R and Panx1 requires their spatial proximity for efficient and fast functional coupling. Earlier reports have suggested physical interaction between Panx1 and P2X7R. Based on their interaction, we hypothesized that Panx1 might influence the function of P2X7R. The effect of Panx1 on P2X7R-mediated intracellular Ca2+ rise was studied. Panx1 was found to attenuate P2X7R-mediated intracellular Ca2+ rise in CHO cells and HEK-293 cells. The inhibition was also observed in rat cortical astrocytes. Panx1-knocked down astrocytes exhibited significantly higher rise of P2X7R-mediated intracellular Ca2+. For identifying the regions of Panx1, associated with P2X7R-inhibition, different deletion mutants were generated by removing amino acids sequentially from the C-terminus of Panx1. The ability of different truncated Panx1 to inhibit P2X7R-mediated Ca2+ influx were tested. The region from Leu350 to Cys426 was found to be crucial for inhibiting P2X7R. Like full-length Panx1, the C-terminus alone was also able to attenuate the Ca2+ influx through P2X7R. This inhibitory modulation of P2X7R possibly plays an important role in physiology and pathophysiology.

PLENARY LECTURE - 11

Dr. Rita Khadka
Additional Professor
Department of Basic and Clinical Physiology
B. P. Koirala Institute of Health Sciences
Dharan, Nepal

ABSTRACT

Cardiovascular Autonomic Dysfunction in Patients with Hypo-and Hyperthyroidism

The thyroid hormones exert effects on the heart and the vascular system directly or indirectly influencing on protein synthesis, peripheral resistance and autonomic nervous system. In patients with hypo- and hyperthyroidism cardiovascular autonomic nervous functions are found altered. Recently, it has been proposed that thyroid hormones have organ specific functions. It affects differently on different tissue of the body. We studied influence of thyroid hormones on cardiovascular autonomic activity and reactivity in newly diagnosed patients with hypo- and hyperthyroidism. We also studied whether thyroid hormones affect differently on autonomic and peripheral somatic nervous functions. My talk will especially focus on parasympathetic and sympathetic reactivity and activity in hypo- and hyperthyroid patients.

PLENARY LECTURE - 12

Dr. Amit Bandyopadhyay

M.Sc., Ph.D., FICN
Assistant Professor, Sports and Exercise Physiology Laboratory
Department of Physiology, University of Calcutta
University Colleges of Science and Technology
92, A.P.C. Road, Kolkata: 700009, India.
E-mail: bamit74@gmail.com

Teaching Experience

- More than 20 years of UG and 15 years of PG Teaching
- 3 Yrs teaching experience in Overseas University

Serving other postgraduate departments as Guest Faculty:

- M.Sc. in Sports Science, University of Calcutta
- M.Sc. in Human Physiology, Rammohan College, University of Calcutta • M.Sc. in Human Physiology, Midnapore College (Autonomous). • M.Sc. in Human Physiology, Raja N.L. Khan Women's College, Midnapore • M.Sc. in Human Physiology, University of Kalyani.

Fields of Research Interest:

- Sports and Exercise Physiology
- Ergonomics and Work Physiology

Awards

- National Scholarship Scheme, Government of India
- Dr. Satya Ranjan Dasgupta Memorial Prize in the year 1998.
- Prof. B.B. Sarkar Memorial Research Prize 2001 by PSI
- Bharat Jyoti Award–2014, conferred by India International Friendship Society.

ABSTRACT

Prediction of Cardiorespiratory Fitness in Sportspersons and Sedentary Individuals : an Indian Perspective

Background: Maximum oxygen consumption (VO2max) and physical fitness index (PFI) are the indicators of cardiorespiratory fitness which is often evaluated by indirect methods due to unavailability of well-equipped infrastructure, especially in the field based studies where large number of samples are evaluated.

Methods: Such methods include Queen's College step test, Cooper's 12 min walk run test, Fox protocol, 20 m multi–stage shuttle run test, heart rate ratio method, modified Harvard step test, etc. These methods are extensively used in different populations although these protocols were originally standardized and recommended in Western populations. These methods validated in sportspersons and healthy sedentary individuals of different age groups of both genders in Kolkata and its suburban regions.

Results: Observations varied significantly between adults and school going children as well as in different categories of sportspersons of different genders belonging to similar age group. Application of these prediction models revealed the necessity to modify these tests. Accordingly, necessary amendments were executed in the experimental procedures to fit the protocols to the respective study population.

Conclusion: Thus, recommended protocols were found to produce reliable results and thus it proves the essentiality of population specific standardization of indirect protocols to acquire consistent data.

KEYNOTE ADDRESS - 3

Chandan K Sen

Distinguished Professor and J. Stanley Battersby Chair Professor and Vice-Chairman (Research), Department of Surgery
Director, Indiana Center for Regenerative Medicine & Engineering
Executive Director, IU Health Comprehensive Wound Center (NIH CRU)
Associate Vice-President (Research), IU
Associate Dean, School of Medicine
Associate Director, IN CTSI
Lily INCITE Scholar

Chandan K. Sen is an Indian-American scientist who is known for contributions to the fields of regenerative medicine and wound care. He is currently Indiana University Distinguished Professor. At Indiana University, Sen is the director of the Indiana Center for Regenerative Medicine and Engineering (ICRME), J. Stanley Battersby Chair and Professor of Surgery and as the Associate Dean of Research. He is an Editor-in-Chief of the Antioxidants & Redox Signaling as well as the Advances in Wound Care. Sen is known for his co-invention of the tissue nanotransfection technology for in vivo tissue reprogramming. His work has included the study of the electroceutical management of infection, and tocotrienol form on natural vitamin E. Sen has an H-index of 97.

Chandan Sen received his BSc and MSc from the University College of Science at Calcutta University where he received his Bachelor of Sciences (Honors in Physiology) in 1987 and his Masters of Science in Human Physiology in 1990.

Sen then moved to Finland for further studies. In 1994, he received his PhD in Physiology from the School of Medicine at the University of Eastern Finland - Kuopio Campus. In January 1995, Sen went to the University of California Berkeley for his postdoctoral studies on redox signaling in the Molecular and Cell Biology department (1995-1996). In 1997, Sen received his first faculty position at the Lawrence Berkeley National Laboratory in Berkeley California.

ABSTRACT

Tissue Nanotransfection for In Vivo Tissue Reprogramming in Regenerative Medicine

Induction of cell plasticity typically relies on the ectopic expression of a cocktail of genes using viral vectors. In vitro reprogramming followed by implantation of limited number of cells in vivo have shown limited translational significance. Tissue nanotransfection (TNT) technology achieves tissue reprogramming in vivo such that the functional fate of pre-existing tissue is modified as needed under conditions of ongoing immune surveillance. The TNT chip hardware is nanfabricated utilizing silicon wafers which can be diced according to required dimensions. TNT involves electromotive gene transfer that delivers select plasmids optimized to achieve specific functional outcomes. TNT can be applied at the point-of-care and does not require sophisticated laboratory infrastructure as required for in vitro reprogramming. Powered by nanoelectroporation, TNT the need for viral gene transfer which poses several risks including uncontrolled gene transfer and genomic integration. Vasculogenic TNT include has achieved conversion of cells in the live skin tissue in vivo to functional blood vessels such that the ischemic limb has been rescued. Neurogenic TNT has converted cells in the live skin tissue in vivo to electrophysiologically active neural cells which were successfully used to rescue against injury to the brain. Neurotrophic TNT has productively made the skin more rich in neurotrophic factors. This response can be utilized to rescue pre-existing nerve fibers in the body that are threatened with neuropathic consequences in response to diabetes or injury. TNT can also be utilized for in vivo gene editing, tumor regression and cell specific exosome labelling. Overall, TNT represents a novel technology platform that can be adapted to a wide range of applications.

PLENARY LECTURE - 13

Jasimuddin Ahamed

Assistant Member (Equivalent to Assistant Professor)
Cardiovascular Biology Research Program
Oklahoma Medical Research Foundation (OMRF)
825 NE 13th Street, Oklahoma City, OK 73104,
USA Tel: (405) 271-2560 (Office); (405) 271-2565 (Lab);
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Email: ahamedj@omrf.org; jahamed2@gmail.com
Website: www.omrf.org/research-faculty/scientists/ahamed-jasim/ORCID: 0000-0001-6455-0296 LinkedIn: https://www.linkedin.com/in/jasimuddin-ahamed-99072861
Google Scholar:https://scholar.google.co.in/citations?user=npaCK6YAAAAJ&hl=en

Jasim Ahamed, Ph.D. is an Assistant Member at the Cardiovascular Biology Program at OMRF. He obtained his Ph.D. from the University of Calcutta, India and carried out two postdoctoral terms at the University of Pennsylvania, Philadelphia, PA, and The Scripps Research Institute, La Jolla, CA. He then joined Rockefeller University as a Research Assistant Professor, and in 2015 joined OMRF.

ABSTRACT

Covid-19 and Cardiovascular Disease

Dr. Ahamed's primary research focus has been on blood clotting and platelet activation, and the resulting release of transforming growth factor beta1 (TGF- 1) from platelets, which contain more than 100-times more TGF- 1 than all other blood cells. Dr. Ahamed's laboratory studies the role of platelet-derived TGF- 1 in cardiac and valvular disease. Since COVID-19 affects the heart, his talk will discuss current therapeutic management and the use of animal models to test the mechanism by which the virus and/or viral-derived components affect heart and valvular functions. He will also discuss biomarkers and potential future therapies for cardiovascular disease.

PLENARY LECTURE - 14

Dr. Sunil Dhungel
Ph.D., Department of Clinical Physiology,
Nepal Army Institute of Health Sciences,
Kathmandu, Nepal
Currently: Course Director, Professor of Neuroscience and Neurology
The Medical University of the Americas (MUA)
Nevis, West Indies
Email: s.dhungel@mua.edu

ABSTRACT

Cross talk between Covid and Chemosensation

Coronaviruses have been shown retrograde and anterograde spread along the nerve to/from the peripheral nerve endings, across the synapses, and thus enter the brain, in several small animal studies. Recentstudiesare showing the possibility of viral invasion of nerve cells by several mechanisms. These include the transfer across the synapses of infected cells, entry into the brain through the olfactory nerve, infection of the vascular endothelium, and the migration of infected white blood cells across the blood-brain barrier (BBB).My talk will focus on current understanding of chemosensation and its pathophysiology in order to understand the mechanism of anosmia and ageusia with special focus on olfactory pathway from perception to detection.

PLENARY LECTURE - 15

Dr. Raghavendra V. Kulkarni

BLDEA's SSM College of Pharmacy and Research Centre,
BLDE University Campus, Vijayapur 586103, Karnataka
E-mail: rvkulkarni75@yahoo.com

Dr. Raghavendra V. Kulkarni is presently working as Professor & Vice-Principal of BLDE Associations's SSM College of Pharmacy & Research Centre, Vijayapur, He is also shouldering the responsibility Chief Administrative Officer (CAO) of BLDE Association and BLDE (Deemed to be University), Vijayapur. He has worked as Director for 'Central Research Laboratory' at BLDE University.

He completed his B.Pharmacy in 1997 from Karnataka University, Dharwad with distinction & 3rd Rank to university, M.Pharmacy in 1999 from Rajiv Gandhi University of Health Sciences, Bangalore with distinction and completed Ph.D in 2009 from Jadavpur University, Kolkata. He has 21 years of teaching and research experience. He has guided over 37 postgraduate students and 07 Ph.D. students. His areas of research comprise novel drug delivery systems including hydrogel based oral and transdermal drug delivery systems.

Dr. Kulkarni received research grants worth of Rs. 51 Lakhs from Vision Group on Science & Technology, Govt. of Karnataka, RGHUS Bangalore, AICTE and ICMR, New Delhi. He published 110 research and review papers in various national and international journals, and presented more than 87 papers in national and international conferences with an 'h' index of 27 and more than 2400 citations. He has filed 07 patents and wrote 06 book chapters. He has delivered 17 invited talks and organized 04 national seminars.

Dr. Kulkarni is a recipient of (1) Prof. K. Raghottama Rao National award at 107th Indian Science Congress, Bangalore for the year 2019-20, (2) Award for Best Research Paper from VGST, Government of Karnataka for 2012-13 and (3) Best Research Paper Award from Association of Pharmaceutical Teachers of India for 2014-15. He also received 07 “Best scientific poster awards” in AICTE & ICMR sponsored National Seminars.

Dr. Kulkarni is an editorial/advisory board member of 09 journals including Bentham Science Journal “Drug Delivery Letters” and “BLDE University Journal of Health Sciences”. He is a reviewer for more than 65 national and international journals including Elsevier, Bentham Science, Taylor & Francis, Wiley Interscience and Dove Press Journals to name a few. He was an expert member of committee for syllabus revision of G & PG and also a “Doctoral committee member” of Rajiv Gandhi University of Health Sciences, Bangalore.

ABSTRACT

Chronotherapeutic Responsive Drug Delivery Systems

Chronotherapeutics refers to the management of diseases in which plasma drug concentration is mapped with the rhythms of diseases for better clinical outcomes and to minimize the drug adverse effects. Time of drug administration is the key point as it has noteworthy impact on successful clinical outcomes. When the disease symptoms show circadian variation, the clinical outcome is suffered even though drug plasma concentration is constant. In such cases, the drug release should be tailored to vary with time/ disease symptoms; therefore, variations both in a disease state and in plasma drug concentration need to be considered in formulating the drug delivery devices. A range of drug delivery systems including pulsed, triggered and programmed devices have been designed in recent past for Chronotherapeutic drug delivery.

In recent years, the drug delivery approach has been changed from the concept of conventional to smart drug delivery, in which polymers play a crucial role. Progress in the polymer field has given many novel biomaterials for modified release of medications. One such instance is responsive polymer, which has a distinctive character of responsiveness to stimulus like temperature, electricity, pH, ionic strength, enzymes, glucose etc. The stimulus can be applied through “external” sources or originated through “internal” atmosphere due to pathophysiological conditions within the body. The Chronotherapeutic responsive drug delivery devices that can respond to internal or external stimulus are need of the day for management of diseases.

PLENARY LECTURE - 16

Deepthi C de Silva
Professor Deepthi C de Silva
Department of Physiology, Faculty of Medicine
University of Kelaniya, Sri Lanka

ABSTRACT

Connexins and their Role in the Cochlea

Connexins (Cx) are cell membrane proteins, six of which are assembled to form connexon hemi-channels. Connexon hemi-channels enable movement of ions and molecules between intra and extracellular compartments. Connection between hemi-channels of adjacent cells form gap junctions spanning the membranes of two cells to enable transport of ions and molecules (including ATP and miRNA) which are critical for intercellular communication.

The organ of Corti, the sensory apparatus for hearing is located within the cochlea. The organ of Corti expresses multiple Cx including Cx26 (GJB2), Cx30 (GJB6), Cx31 (GJB2), Cx29 (GJE1) and Cx32 (GJB1). Homotypic and heterotypic connexins form gap junctions in the organ of Corti. Their expression starts before auditory function develops with spatial and temporal changes in the pattern of connexin expression during embryological development.

Connexins, in particular Cx26, was postulated to have a role in K+ recycling in the cochlea to maintain the endocochlear potential (EP). Their role in early development in addition to the development and maintenance of the EP is now recognized.

The role of connexins in maintaining the endocochlear potential and their relationship to pannexin channels will be discussed with reference to the association of Cx mutations in congenital deafness

PLENARY LECTURE - 17

Dr. G. K. Pal

Professor (Senior Scale) of Physiology JIPMER, Puducherry.
Dean, Faculty of Medicine, Pondicherry University, Puducherry.
Program Director, Advance Center for Yoga, JIPMER.

Academic Qualifications : MBBS, M.D.(Physiology), Ph.D., D.Sc., B.N.Y.T. (Naturopathy & Yoga therapy), M.D. (Yoga), M.D. (Alt. Medicine)

Experiences :

Teaching Experience : 32 years

Research Experience : 35 years

Administrative Experience : 15 Years

Field of Research : Neurophysiology, Hypertension, Diabetes, HRV, Baroreflex sensitivity, and Yoga

Research Awards / Prizes received: Recipient of 17 National Research Awards that include ICMR Scientist Award (1999), BK Anand Research Award of APPI (2011), JIPMER Senior Faculty Oration (2019).

UPSC Recognition of Merit:

Union Public Service Commission (UPSC) had awarded Five Advance Increments in salary at the time of recruitment for the Post of Assistant Professor of Physiology, for excellent performance in UPSC interview during selection. This is considered as an outstanding achievement, as UPSC rarely confers such honors to highly meritorious candidates based on their accomplishment in interview.

Author of Five Medical Textbooks in Physiology: that includes Comprehensive Textbook Medical Physiology, Textbook of Medical Physiology, Textbook of Practical Physiology.

Positions held in National Bodies: President, IABMS, Vice-President, FIPS, General Secretary, ASSOPI.

Cumulative Research Funds obtained from various funding agaencies: Rs. 2.8 crores

Research Publications, Citations, h – index and i10 -index:

- Total Publications: 214 Research Papers
- Citations in Google Scholar: 4798, h - index : 26; i - 10 index : 52
- Citations in ResearchGate: 2288; RG Score : 38.30; h - index: 27

ABSTRACT

Dysfunction of Microbiota - Gut-Brain Axis in Clinical Disorders: Role of Sympathovagal Imbalance

The gut bacteria cooperate with their animal hosts to regulate the development and function of the immune, metabolic and nervous systems through dynamic bidirectional communication called 'microbiota-gut-brain axis'. This axis affects human health, and disruptions in microbial communities have been implicated in pathophysiology of several clinical disorders. Most insights about host–microbiota interactions come from animal models, which represent crucial tools for studying the various pathways linking the gut and the brain. We shall discuss emerging evidence of intricate and crucial connections between the gut microbiota and the brain involving multiple biological systems, and possible contributions by the gut microbiota to various diseases. Contemporary research investigates how microorganisms influence the brain through their ability to produce and modify many metabolic, immunological and neurochemical factors in the guts that ultimately impact the nervous system. The dysfunction in gut-brain axis has been implicated in neuropsychiatric disorders associated with development, for example, autism spectrum disorder (ASD), schizophrenia, mood disorders such as depression and anxiety, and neurodegenerative diseases like Parkinson disease (PD), Alzheimer disease (AD) and multiple sclerosis. Recent research has revealed the problems in sympathetic and vagal functions associated with the disorders of gut-brain axis in the causation of various clinical disorders. Therefore, it has been proposed if restoration in autonomic balance can help in the treatment of these diseases that occur due to disorders of gut-brain axis.

PLENARY LECTURE - 18

Prof. Dr. Umar Ali Khan

MBBS, MPhil, FCPS, Ph.D.

Professor of Physiology, Pro Vice Chancellor, Isra University Islamabad & Principal Al-Nafees Medical College & Hospital, Islamabad.

Email: uakone@hotmail.com Cell: +92-321-5216321

Passion for utilizing creativity, innovation and leadership experience while preparing under and post graduate medical students for the 21st century in an environment that values collaboration, integrity and diversity.

Currently serving Al Nafees Medical College, Isra University as Chief Administrative and academic officer, monitor and supervise curriculum updation. Recommend policy changes and new academic initiatives. Recruit and retain qualified and diverse full time and adjunct faculty and staff. Provide expert academic advisement to ensure student satisfaction and success all across three campuses of Isra University.

After doing his MBBS from Nishtar Medical College, Multan, Pakistan, Prof. Khan pursued his career in Physiology by getting his M. Phil. from Postgraduate Medical Institute, Lahore, Pakistan. He stood First in M. Phil. Physiology Examinations conducted by University of the Punjab, Lahore, Pakistan.

Later he completed his Fellowship in Physiology (FCPS) from College of Physicians & Surgeons of Pakistan. He did his PhD from Isra University, Pakistan.

During his student life at Nishtar Medical College, Multan Pakistan, Prof. Khan remained playing member of college Badminton Team for five years; he was Captain of College Team and was awarded College Color. He Played for Baha ud Din Zakriya University and remained runners up for two consecutive years in All Pakistan Inter University Tournament of Badminton. He was also awarded Certificate of Honor and University Color in Badminton from Baha ud Din Zakriya, Multan.

Prof Khan is Winner of Prof. Syed Alamdar Hussain shield for BEST PAPER PRESENTOR at 5th Biennial International Physiology Conference at Ayub Medical College, Abbottabad, Pakistan. He was Faculty Supervisor of Dr Attique Memorial Best Undergraduate Paper Presenter Award at 8th Biennial International Physiology Conference at Nishtar Medical

College, Multan-Pakistan.

ABSTRACT

Translational Physiology Research, Clinical Practice and Public Health : A Continuum

It is way back in 1938 when JS Weiner in his article Physiology and Public Health wrote that there should be application of physiology in practice of hygiene. In that time courses of Applied Physiology were taught to students of public health to deal the practical entities like maternal & child health, school health, personal, occupational and industrial hygiene.

Currently public health has become of utmost important. Public Health deals with physical, mental and environmental impact on community. Public Health is now a multidisciplinary subject. It helps improve the quality of life of population in an interdisciplinary manner.

These days there is an ongoing debate on future of physiology. Although physiological research has contributed to the clinical and Public Health levels. But in 1993 National Cancer Institute in America used a term translational research. Nowadays this term is used to explain the process through which basic science research is translated into clinical practice and Public Health.

A latest mini review concludes that non-communicable diseases are among the leading causes of death globally, deeper understanding of the interactions between physiology of sleep and nutrition are required to investigate the implications for both public health and clinical practice.

Translation physiology is a platform to investigate physiological events from molecular to population levels. This improves clinical practice and Public health, which proves the competence of physiologist in impacting societal needs.

PLENARY LECTURE - 19

Gausal A Khan

Department of Physiology & Physiotherapy
Fiji School of Medicine, CMNHS
Fiji National University, Suva, Fiji Islands

ABSTRACT

Stress induced sterile Inflammation and Insulin Resistance : Novel role of von Willebrand Factor

Hypoxic respiratory diseases or hypoxic stress are frequently accompanied by Insulin resistance (IR) and impaired nitric oxide (NO) production. However, the mechanism of IR by hypoxia due to impair NO production remains obscure. Here, we explored the possible mechanism of impaired NO production and IR during hypoxia in an animal model. Hypoxic exposure resulted in a time-dependent increase in IR as well as the multimeric forms of von Willebrand factor (vWF) and a decrease in NO production. Pre-incubation with hypoxic plasma or recombinant human vWF inhibited insulin-induced NO production, but larger doses of insulin reversed the effect. Far-western blotting, CO-IP as well as SPR study showed the interaction of vWF with eNOS. These resuuls suggest that vWF, an antagonist of eNOS, inhibits insulin-induced NO production and IR. We further investigated transcriptional regulation of vWF and found that hypoxia significantly upregulates high mobility group box-1 (HMGB1). Pre-treatment with an HMGB1 inhibitor, TLR2-immunoneutralizing antibody, TLR2 silencing or SP1 inhibitor significantly decrease vWF expression. This suggests that hypoxia induced vWF expression and its secretion is mediated through TLR2-MyD88-SP1 pathway which acts as novel inhibitor of insulin and decrease insulin-induced NO and IR. Therefore, vWF would be a potential target for developing therapeutics in the management of stress induced IR. insulin-induced NO and IR. Therefore, vWF would be a potential target for developing therapeutics in the management of stress induced IR.

PLENARY LECTURE - 20

Samina Malik

Professor & HOD Physiology, University College of Medicine,
University of Lahore, Lahore, Pakistan
Pioneer Faculty Development Program,
University College of Medicine, University of Lahore
Chairperson, Mentoring Program,
University College of Medicine, University of Lahore
Pakistani representative,
Education Committee, Fedeartion of Asian & Oceanian Physiological Sciences (FAOPS) comprising of 40 countries from Asia-Pacific region

Associate Editor, Pakistan Journal of Physiology.
National & International Publications : 25
Author of the book "SEQs and MCQs in Physiology" with references from Guyton textbook.
Organizing Secretary for South Asian Association of Physiologists (SAAP) Conference 2018, at UCMD, UOL.
Organizing Secretary for All Pakistan Inter Medical College Physiology Quiz 2020, at UCMD, UOL.
Chief Organizer of First Undergraduate Role play competition on Physiological mechanisms at UCMD, UOL.
Chief Organizer of First International Photography and Arts Festival with focus on Physiology at UCMD, UOL.
Facilitator, International Certificate in Medical Teaching Course, affiliated by University of Liverpool.
Facilitator of Physiology Teaching workshops in South Asian Association of Physiologists, Kathmundu, Nepal on 10th Nov 2016

WORKSHOPS FACILITATED
"How to incorporate research in undergraduate medical curriculum" at FAOPS, Kobe, Japan 2019.
"How to be a good follower, in order to become a great future leader" at ICHPE, UOL, Lahore 2019 and at ICME Islamabad, 2019.
"How to make good quality MCQs?" in FDP 2019 at UOL, Lahore.
"Lecturing at a Higher cognitive level involving critical thinking and roleplay" at PCW SAAP VI & PPS CON 2018.
"How to be a Happier person" during orientation week of new first year MBBS in Dec 2017 at UCMD, UOL & at AEME 2018.
"Goal setting & goal-achievement: Secret Revealed" at PPS Sahiwal 2017 and AEME Aga Khan 2017.
"Communication Skills & Stress Management" as Pre-symposium workshop at UCMD, UOL on 23rd April 2016.

How to Improve Emotional Intelligence?

- at CMH Lahore Medical & Dental College, Lahore in International Conference on: The integrated curriculum for an un-integrated practice: is seamless transition from education to practice really possible? at the University of Health Sciences, Lahore 30-31st October 2015.
- at KMU, Peshawar, in AEME 4-6 March, 2016
- at UOL, in CCME 2016 held at UHS
- at Kathmundu Medical College, Nepal in South Asian Association of Physiologists (SAAP) V Conference on 10-12 Nov 2016

How to Develop Principle Centered Leadership? at CMH Lahore Medical & Dental College, Lahore in International Conference on: The integrated curriculum for an un-integrated practice: is seamless transition from education to practice really possible? at the University of Health Sciences, Lahore 30-31st October 2015.

Mental Filing System to enhance Memory immediately, in International Conference on: The integrated curriculum for an un-integrated practice: is seamless transition from education to practice really possible? at the University of Health Sciences, Lahore 30-31st October 2015 & at KMU, Peshawar, in AEME 4-6 March, 2016.

Faculty Development Program Workshops at University of Lahore:

a) How Students Learn? (3 Interactive Workshops)
b) Making Effective Power Point Presentation (3 Interactive Workshops)
c) Small group Facilitation: Collaborative Learning (3 Interactive Workshops)
d) Interactive Lecturing; Using Active Learning Strategies (3 Interactive Workshops)
e) How to conduct Small Group Discussion in Case Based Learning format
f) How to give feedback to students
g) How to make good MCQs
h) Mentoring and Feedback

Facilitated an online workshop on "How to let go of stress being a medical student in Covid-lockdown by metacognition & mindfulness intervention" on 29th Aug, 2020 for students of University College of Medicine.

Facilitated an online workshop on "How to Develop Faculty by Metacognition and Mindfulness Intervention" in ICHPE4 at University College of Medicine on 17th Oct, 2020

ABSTRACT

First Report of Novel PTEN variant in breast cancer from Pakistan: An Extrapolative Variable of Diagnostic Significance

Introduction: Breast Cancer is the number one cause of cancer related deaths in Pakistani women with an incidence of 1 in 9. This abstract is a part of a larger study that we conducted to identify the variants in 27 possible genes known for breast and ovarian cancer along with several oxidative stress markers. The current objective is to report a predictive novel variant of diagnostic importance in local females with breast cancer. Furthermore, to study the epidemiological and clinical presentation that may be predictive of this variable. Methods: After ethical approval and informed consent, we extracted DNA from peripheral blood and conducted next generation sequencing followed by Sanger confirmation. Results: Our results indicate that an identical novel Phosphatase and Tension Homolog (PTEN) variant is present in 69% patients. It is a homozygous frameshift substitution (GCGCCG > CCGCCGC) at amino acid position C65S on exon 2 of chromosome 10 from 89623901 to 89623906. It acts at Micro-RNA and Cellular Senescence level of cancer pathways. All PTEN cases showed significant triple negative behavior at estrogen, progesterone and HER2 receptors, associated with adverse outcome. A total of 85% were premenopausal with mean age of 35 years +/- SD 5.611; SE 1.255; range 27-46 years). Their mean age at menarche was 13.25 years +/- SD 0.716; SE 0.160. The mean BMI showed overweight status. Family history was positive and known in only 35% but they were mainly (60%) the outcome of related parents. In majority (75%) of them history of breast feeding was positive and had no difficulty in breast feeding (70%). Around 80% were non-smokers and 100% were non-alcoholics. Most of them (85%) presented with Invasive Ductal Carcinoma and 55% with grade III. They all were homemakers, most (85%) being married and majority (75%) did not receive education above grade 10. Nearly 70% used tap / filtered-tap-water for drinking. They all had unilateral breast cancer of right side mainly (60%). Almost all (95%) detected it by feeling the lump. Mastectomy was performed only in 30% and all of them underwent chemotherapy. Radiotherapy was offered to only 10%. A total of 35% among them had only 1 year post-diagnosis survival. Conclusion: This novel variant may be useful for researcher and clinician to expect similar outcome in its carriers. It can be offered as a screening tool to achieve pre-diagnosis around 13 years of age to predict similar clinical manifestation using affordable Sanger technique, even before the breast development. The early diagnosis may improve the outcome.

Key words: High throughput sequencing, Genomics, Sanger sequencing, PTEN, Breast Cancer.

PLENARY LECTURE - 21

Professor Dr. Akhtarun Nessa
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ABSTRACT

Evaluation of the Changes of BMI and Serum C-reactive protein (CRP) in Postmenopausal Women

Background : The period during which the menstrual cycle ceases and the female sex hormones diminish to almost none is called menopause. In post menopausal women, elevated C-reactive protein (CRP) is one of the most significant predictors of cardiovascular disease and heart attack risk. Body mass index (BMI) and serum CRP are significantly higher among postmenopausal women. Objective: To asses the BMI and Serum CRP level changes in postmenopausal women in order to compare with reproductive aged women. Methods: This cross-sectional study was carried out in the Department of Physiology, Mymensingh Medical College, Mymensingh, Bangladesh from July 2018 to June 2019. Total number of 200 women was enrolled in this study. Among them 100 were postmenopausal women, age range between 45-65 years as study group (Group II) and 100 were apparently healthy reproductive aged women, age range between 25-45 years as control group (Group I). BMI was calculated as weight in kilogram divided by the height in meter square. Serum CRP was done by CRP-Latex Test (Slide agglutination procedure) method. Data were expressed as mean±SD and statistical significance of difference among the group was calculated by unpaired student's 't' test. Results: In this study it was found that BMI was significantly ($p<0.001$) increased in study group (28.74±2.69kg/m2) in comparison to control group (22.98±2.57kg/m2). Serum CRP level was also significantly ($p<0.001$) increased in study group (9.84±5.75mg/L) in comparison to control group (4.96±0.46mg/L). Conclusions: This study concludes, BMI and Serum CRP level increased in postmenopausal women due to loss of female gonadal steroids. Therefore, routine estimation of these parameters is important for prevention of complications in menopausal women for leading a healthy life.

Key words: Menopause, BMI, Serum CRP, Gonadal steroids

Dr Mahmuda Islam Dipa, Assistant Professor, Department of Physiology, President Abdul Hamid Medical College, Kishoreganj, Bangladesh

Speaker: *Professor Dr Akhtarun Nessa, Professor & Head of Physiology, Mymensingh Medical College, Mymensingh, Bangladesh; Cell Phone: 01718010872; E-mail: nessa.akhtarun45@gmail.com

PLENARY LECTURE - 22

Prof. Suvro Chatterjee

UGC-FRP Associate Professor, Department of Biotechnology, Anna University, and Coordinator, Life Science Division, AU-KBC Research Centre, Chennai, India. Suvro Chatterjee's research interests revolve around nitric oxide signaling in vascular remodeling. He is B.Sc and M.Sc in Human Physiology from Calcutta University (1992).Trained as cell biologists at Devi Ahilya University Indore (Ph.D. 1999), McGill University (1998-2000) and Mayo Clinic Rochester (2001-2004) (Postdoctoral trainings). He has 125 research articles published in peer reviewed journals like PNAS, Circ Res, American Journal of Physiology, American Journal of Pathology, British Journal of Pharmacology and Journal of Cell Sciences to his credit.

He is the first recipient of UGC Faculty Recharge Programme (FRP) Professorship in Life Sciences and accordingly joined the Department of Biotechnology, Anna University in 2014. Dr. Suvro is a Fulbrighter since he was selected for the Fulbright Nehru Fellowship for Academic and Professional Excellence in Bio-engineering for the year 2018.

ABSTRACT

Microfluidics Based Investigation of Vascular Diseases Process

Despite of advancement in clinical care and public education, cardiovascular diseases remains the leading cause of death worldwide. Particularly, atherosclerosis the disease of artery accounts for most of death related to cardiovascular diseases and stroke. The disease is manifested with plaque development inside the arterial walls which grows silently for long time in arteries; and at the later stages it leads to stenosis and impediment of the blood flow, or rupture and leads to thrombosis. Though plaque development correlated with the higher low density lipoprotein (LDL) cholesterol level in blood, it has been strongly proven that plaque develops in localized regions where blood flow is turbulent. We use microfluidics based models to study plaque formation in vascular bed that ultimately pave the path for vascular blocks and acute pathologies.

PLENARY LECTURE - 23

Prof. Md. Obaidullahibne Ali
Associate Professor
Department of Physiology
Rajshahi Medical College, Rajshahi

ABSTRACT

Study of Lung Function Test in Chronic Bronchial Asthma with Vitamin C Supplementation

Abstract

In chronic bronchial asthma inflammation may be accompanied by intensive air flow limitation. Endogenous oxidants produced by overactive inflammatory cells destroy airway epithelium which slough into bronchial lumen and thus aggravates asthma. When oxidant overwhelm anti- oxidants, tissue injury and disease results.

Background

Respiratory disease is a major cause of death and disability in many countries. In chronic asthma inflammation may be accompanied by intensive air flow limitation? There are evidence that endogenous oxidants produced by overactive inflammatory cells destroy airway epithelium which slough into bronchial lumen and thus aggravates asthma.' Free radicals are always being produced in our body.

Methods

The study has been design to observe the lung function in patients with chronic bronchial asthma both before and three month after supplementation of vitamin C. Total number of 60 apparently healthy male suffering from chronic bronchial asthma. All patients randomly divided in to study group consist of 30 patients Group - A1 subdivided in to Group A1 (before supplementation of vitamin C), Group - A2 (after supplementation of oral vitamin C 500 mg) and control group consist of 30 patients. Pulmonary function variables such as FVC, FEV1, FEV1/FVC% and PEFR were measured by spirometer on standing position of all groups of patients.

Results

In present study, mean FVC, FEV1, FEV1/FVC% and PEFR of control group did not significantly change than that of their study group values. The mean FVC, FEV1, FEV1/FVC% and PEFR following vitamin C was significantly raised ($P<0.001$) than the pre supplementation values in patients with chronic bronchial asthma.

Conclusions

Improvement of pulmonary function values were significantly increased after supplementation of vitamin C

PLENARY LECTURE - 24

Prof. A. Ray

Prof. Arunabha Ray, MD, Ph.D, FAMS, is Professor and Head, Dept. of Pharmacology at HIMSR. Formerly, he was Director, Vallabhbhai Patel Chest Institute (VPCI), University of Delhi; and, Dean, Faculty of Medical Sciences, University of Delhi. Prof. Ray is a medical graduate (MBBS) from the Calcutta University, with MD and PhD degrees from the Faculty of Medicine, University of Delhi, has more than 40 years of teaching and research experience. He continues to be a prolific researcher with extramurally funded projects and is chair/expert member of several national and international technical/scientific advisory committees/boards.

In recognition of his contributions in the area of medical education and biomedical research, he has been the recipient of several awards and honors from apex scientific and professional bodies, and has actively contributed to the development of several national/international professional societies. Prof. Ray was elected Fellow of the National Academy of Medical Sciences (FAMS, 2005), Fellow of the Indian Pharmacological Society (FIPS, 2007) and Fellow of the International Academy of Cardiovascular Sciences (FIACS, Canada, 2016). He has more than 200 publications, contributed several text and reference book chapters, is editor of 05 books in his areas of expertise, and has authored a Textbook in Pharmacology.

ABSTRACT

Nitric Oxide (NO) Regulates Gender Based Differences in Stress Susceptibility and Adaptation

Stress is any aversive emotional or environmental stimulus capable of altering physiological homeostasis and inability to cope/adapt results in stress-related disorders. Exposure to such stressors result in a series of orchestrated biological responses often referred to as 'stress responses`, which involve interactions between the CNS, neuroendocrine and immune systems. Recent studies indicate that males and females differ in their physiological and behavioral responses to stressors. Nitric oxide (NO) is a complex messenger molecule with widespread distribution and multidimensional physiological functions in the body as well as in various pathophysiological processes. The CNS and immune systems are particularly susceptible to stress and the possible role of NO as a regulatory molecule for determining possible gender based differences in stress responsiveness was evaluated. Restraint stress (RS) induced an anxiogenic response in the elevated plus maze test, which was greater in males than females. This was associated with similar differential reductions on NOx and elevations in MDA levels in brain homogenates. These neurobehavioral and biochemical responses were attenuated by pharmacological treatments with NO mimetics and aggravated by NO synthase inhibitors. In immunized rats, RS induced suppression of adaptive immune responses were also greater in males than females, as evidenced by the differential effects seen in the antibody responses, splenic plaque forming cell counts and DTH assay. Th1 and Th2 cytokine levels were also dysregulated, whereas, the pro-inflammatory cytokines were elevated, in response to RS – with males showing greater responsiveness to such immune modulations. These changes were closely paralleled by changes in plasma NOx levels and oxidative stress markers. Prior treatment with NO mimetics attenuated RS induced immune alterations whereas, L-NAME, aggravated them, in both males and females. In female rats, pretreatment with the estrogen antagonist, tamoxifen, induced stress responses similar to those seen in males. It is inferred that gender differences play an important role in stress susceptibility and estrogen-NO interactions play a crucial regulatory role in this phenomenon.

PLENARY LECTURE - 25

Prof. M. I. Alam

Dr. Md. Iqbal Alam is Professor and Head of Department of Physiology at HIMSR, Jamia Hamdard. Dr. Iqbal Alam joined HIMSR, Jamia Hamdard in April 2012. He has obtained his Masters and Ph.D. degrees from Department of Physiology, University of Calcutta.

Dr. Alam has served as a Chairman and Professor of Physiology, Department of Physiology, Faculty of Medicine, Sebha University, Sebha, Libya. He has more than 30 years of teaching and research experience in the field of Physiology. Many research funding agencies such as ICMR, CSIR, DBT, DST etc. have sponsored various projects, in which he has completed successfully.

He has got many National and International recognition and awards for his research work, from different reputed organizations like INSA, UNESCO-ICRO, DST, CSIR, NAMS and UGC. Dr. Alam has got the membership award from National Academy of Medical Sciences (India).

Dr. Alam has Life membership of various societies like Indian Science Congress Association, Indian Pharmacological Society, Indian Physiological Society, National Academy of Medical Sciences, International Cardiovascular society, Society for nitric oxide and allied radicals, Delhi Pharmacological society and Association of Physiologist and Pharmacologist of India. He has made a significant contribution in Research and Development in India and abroad by bringing prolific innovation in the area of Venoms and Toxins and in vascular physiology. He has visited and presented several of his research papers in different countries like Paris, France; Istanbul, Turkey; Adelaide, Australia; Kuala Lumpur, Malaysia; Tehran, Iran; Stanford, California, US. His research area includes Venom & Toxins, translational research, Preeclampsia and on cardiovascular system. He has contributed and published more than fifty research papers in national and international journals with high impact factor.

ABSTRACT

Role of Nitric Oxide (NO) and Decorin in Preeclampsia

Preeclampsia (PE) is a common, pregnancy-specific disease that belongs to the family of “hypertensive disorders in pregnancy” and is characterized by hypertension, proteinuria and other systemic disturbances at or after 20 weeks of gestation. PE is a major contributor to maternal and fetal morbidity and mortality. Eventhough the precise mechanisms of PE pathogenesis remains unknown, it is widely acknowledged that the placenta is the central organ in its pathogenesis, and PE is caused by maternal responses to abnormal placentation and associated with an increased inflammatory state. Pre-eclampsia is closely related to maternal malfunction of the vasculature and is a major cardiovascular risk for the duration of the pregnancy, post-parturition and in later life. Also, endothelial dysfunction may contribute to elevate the peripheral resistance of blood vessels, which forms an essential component of the maternal syndrome.

This study is aimed at the study of sterile immunomodulatory profile of normal-pregnant versus pre-eclamptic subjects and focuses on the identification of potential biomarkers for the early detection of PE and the changes in the hemodynamic parameters leading to the pathophysiology of PE. There have been a lack in the proper understanding of the pathophysiology of PE & hence, no effective therapy or treatment is available so far.

The levels of NO were significantly decreased in PE as compared to healthy pregnant subjects. As NO is a potent vasodilator, when its level in circulation decreases, the contraction of blood vessels increases which leads to elevation in the blood pressure. In our study, we observed that there is a marked increase in the expression level of SI markers (DAMPs) such as HMGB1, HSP90, vWF and DCN in plasma as well as in the placental tissue. From these observations, we can conclude that these inflammatory markers play an important role in the commencement of the pathophysiology of PE. We observed a decreasing trend in all SI markers when the pre and post-delivery samples of PE patients were compared, however significant reduction was seen only in the case of DCN for the SI markers. Therefore, it can be deduced that the DCN is one of the most important molecules which plays a significant role in the pathophysiology as well as progression of PE.

On comparing the biochemical reports of the PE and normal subjects we have found that there is statistically significant increase in the biochemical parameters of the patients versus normal subjects. We observed that certain biochemical parameters such as S. Alkaline phosphate, SGOT, SGPT and protein concentration were significantly increased in PE as compared to healthy controls while no significant change was observed in blood urea and serum creatinine levels. We also analysed the blood parameters from the CBC (complete blood count) reports of patients. On comparing both the reports we observed that the NLR (neutrophil to lymphocyte ratio) was significantly increased in PE as compared to healthy pregnant subjects.

On combining all the observations, we can conclude that low levels of NO lead to placental hypoxia which induces DAMPs expression. Increased expression of DAMPs in turn acts as a stimulus for neutrophil activation in increasing the NLR in PE patients.

PLENARY LECTURE - 26

Prof. Kavita Gulati

Dr. Kavita Gulati is Associate Professor in Pharmacology at Vallabhbhai Patel Chest Institute, University of Delhi. She obtained her masters degree in Pharmacology from the All India Institute of Medical Sciences and subsequently did her Ph.D from the University of Delhi. Dr Gulati has more than 22 years of teaching and research experience in Clinical and Experimental Pharmacology and Toxicology in different capacities in India and abroad. She is the recipient of several national awards including the Achari Prize and Uvnas Prize and the prestigious Prof. B.N. Ghosh Oration of the IPS. She is member of several professional bodies/societies relating to pharmacology and allied sciences (viz. National academy of Medical Sciences, International Neuroendocrine Federation, New York Academy of Sciences, Society of Toxicology, Society of Pharmacovigilance, Indian Pharmacological Society, etc. Her biography has also been include in the Marqui`s "Who is Who" in the world in science. Her research interests are in Respiratory Pharmacology and Toxicology, Neuropharmacology and Stress Research, and she is the Principal Investigator of several extramurally funded research projects (viz. DST, AYUSH, CSIR, ICMR, etc.). She has the distinction of being invited to present talks at prestigious international meetings like IUPHAR (China), CMB Congress (France), World Stress Congress (Hungary), and CPT Congress (Australia). She has been visiting scientist to reputed international institutions like Semmelwies Medical University (Budapest, Hungary), University of Pittsburgh Medical Center (USA), Army Medical Institute (Xian, China), University of Minnesota at Minneapoilis (USA), University of Illinois at Chicago (USA), etc and expert member at different Institutions and Government organizations in her field. She has published extensively in leading national and international journals, is co-author of several chapters in reference and textbooks of Pharmacology, and co-editor of three books in Pharmacology.

ABSTRACT

Newer Insights into the Neuromodulatory role of nitric oxide

Department of Pharmacology, Vallabhbhai Patel Chest Institute, University of Delhi, Delhi; and 2Department of Pharmacology, Hamdard Institute of Medical Sciences and Research (HIMSR), Hamdard University, New Delhi.

Nitric oxide (NO) is a complex and multifunctional molecule with ubiquitous distribution throughout the biological system. The neuromodulatory role for NO is well documented and its involvement in CNS pathophysiology is suggested. Anxiety and seizures are closely similar neurobehavioral disorders and the regulatory role of NO in both brain disorders was evaluated in preclinical models. Anxiety was induced by exposing rats to restraint stress (RS) and observed on elevated plus maze (EPM) in rat. RS induced anxiogenic behavior as evident by reduced open arm entries and open arm time in the EPM. Pretreatment with the NO mimetic, L-arginine and glyceryl trinitrate (GTN) attenuated the RS induced anxiogenic behavior, whereas, L-NAME and 7-nitroindazole (7-NI), aggravated this effect. In another model, theophylline was used to induce anxiogenic response and observed that a low dose of the drug reduced both open arm entries and open arm time in rats. Similar to earlier findings pretreatment with L-arginine attenuated theophylline induced anxiogenesis whereas the L- NAME aggravated the anxiogeneic response. Such RS and theophylline induced neurobehavioral suppression in the EPM activity was accompanied by increases in MDA levels and reductions in GSH and NO metabolite (NOx) activity in brain homogenates – changes which were reversed by L-arginine pretreatment. In tests for seizures, theophylline induced seizures and mortality at higher dose level of the drug in rats. Interestingly, theophylline induced seizures & mortality were antagonized by L-NAME pretreatment, and L-arginine tended to potentiate seizures after sub threshold doses of the methylxanthine. Theophylline induced seizures were accompanied by greater elevations in brain MDA and NOx levels, whereas, GSH levels were consistently lowered. Further, the changes in oxidative stress markers were attenuated by L-arginine pretreatment. It is inferred that anxiety and seizures are two ends of a neurobehavioral spectrum, which are differentially modulated by NO.

KEYNOTE ADDRESS - 4

Prof. Chae Hun Lee

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ABSTRACT

Physiology into People's life

Physiology is an essential knowledge to understand the human body and consists of the basis of the modern medicine. Recent advances in clinical medicine have mostly focused on clinical application. In particular, the development of medical devices has focused on how to better measure the indices used in clinics and how to provide services to patients based on these data. To this end, the recent development of wearable devices based on various bio-signals is remarkable. However, due to the development of overly clinical-focused medical devices, it is relatively weakened to discovering and utilizing new physiological bio-signals. Personalized life management of ordinary people who are not subject to disease is increasing in demand due to recent changes in living patterns. Physiology is a study that can explain the various systems of the human body, but there is a lack of data to apply and to use in real life. For example, when you want to see pulse rate and blood pressure. With these indices alone, it is impossible to identify various physiological functions for understanding and applying the circulatory functions of individuals such as a stroke volume, a cardiac output, a cardiac work, the material transport capacity of the blood etc. Beyond the existing overly clinical development system, the discovery of biological signals and the development of instruments that can be used in everyday life should be made based on a physiological knowledge system. The developments in various fields, especially bio-signal repository, human model-based digital twin, and AI-based bio-signal interpretation techniques, should also be made together. Based on this system, knowledge that has only been learned in physiology books should be sent out to the world so that physiology can move to the center of the lives of ordinary people.

PLENARY LECTURE - 27

Dr. Eric Thelin
Department of Clinical Neurosciences
Institutes of Neurosurgery Unit
Karolinska Institute,
Stockholm, Sweden

Monitoring the pathophysiology of the injured brain, primarily using brain specific proteins of tissue fate ("biomarkers") as well as advanced intracranial monitoring equipment. While in Cambridge, I will focus on neuroinflammation and potential therapies negating the harmful effects of traumatic brain injury.

ABSTRACT

Protein Biomarkers of injury in Traumatic Brain Injury Management

Serum protein biomarkers are used in many fields of medicine, and are becoming more frequently used in the management of patients with traumatic brain injury (TBI). Currently, the brain enriched proteins S100B and Neuron-Specific Enolase (NSE) have clinical automated assays, while other proteins including Glial fibrillary acidic protein (GFAP), Ubiquitin carboxy-terminal hydrolase L1 (UCH-L1), tau and Neurofilament Light (NF-L) are in development. The most commonly used area for brain biomarkers are in emergency rooms where they may be used to rule out the need for radiological imaging in mild TBI patients. S100B has been introduced into the 2013 Scandinavian Guidelines in the management of TBI, where low levels can safely discharge patients. GFAP, which is more brain-enriched than S100B, will presumably be used more in the future when good reliable assays become readily available. Serial sampling of protein biomarkers may also be used to effectively monitor injury progression and to detect new lesions in unconscious TBI patients. Here, effective serum half-life is important as it will result in different temporal dynamics and kinetics which are key for results interpretation, with S100B presenting a very short and NF-L a very long half-life. Biomarkers may also be used for outcome prediction, which could assist in research allocation but also for treatment efficacy validation where they can be used as surrogate outcome metrics in clinical TBI trials. In summary, protein biomarkers are increasingly used in the management of TBI patients where they present clinical utility in several different areas.

PLENARY LECTURE - 28

Dr. Adel Helmy

Adel Helmy is a University Lecturer at the University of Cambridge and an Honorary Neurosurgical Consultant at Cambridge University Hospitals NHS Trust. He combines an active neurosurgical clinical practice with a research portfolio focused on acute brain injury and neuroinflammation in particular

Adel research interests are in Acute Brain Injury (Traumatic Brain Injury (TBI) and Subarachnoid Haemorrhage (SAH)) and in particular the innate inflammatory response following TBI. Inflammation plays a role in secondary injury following TBI, but is also the starting point for reparative processes.

Adel also have an interest in cerebral metabolism multi-modality monitoring as a means of refining and personalizing treatment for patients. This includes a collaboration with the MRC Biostatistics Unit on multivariate statistical methods.

ABSTRACT

Clinical Studies of Neuro - Inflammation in Traumatic Brain Injury

Traumatic Brain Injury (TBI) is a common and devastating form of brain injury around the world. The role of neuroinflammation as a mechanism of neuronal injury has previously been under-recognised. The central nervous system was previously thought to be shielded from peripheral immune surveillance and lacking in immunocompetent cells. In recent years this has been empirically refuted and there is accumulating evidence that neuroinflammation is an important and potentially tractable target for therapeutic intervention.

The neuroinflammation group have an interest in central nervous system inflammation following acute brain injuries such as Traumatic Brain Injury (TBI) and Subarachnoid Haemorrhage (SAH). Innate inflammation comprises of a complex sequence of cellular and humoral responses following any neurological insult. These responses can be protective leading to clearance of cellular debris and promoting a reparative environment, but they can also exacerbate neuronal injury. We are a clinically focussed group that aims to determine how neuroinflammatory responses impact on metabolism and how this can be modulated as a therapeutic target.

Microdialysis Monitoring of Inflammatory Mediators

Microdialysis is an invasive method of sampling the brain extracellular space and is used clinically as a monitoring tool following both TBI and SAH. The same catheters can be used to recover cytokines and chemokines directly from the human brain.

Clinical Trials of Neuromodulatory Agents

❖ We are actively trialling neuroprotective agents in TBI, to modify the neuroinflammatory cascade and ameliorate the damaging effects of neuroinflammation.

Statistical Methods

❖ Inflammatory mediators act in complex cascades and their concentrations in the brain are highly correlated: in statistical terms they show high collinearity. Specialised methods for interpreting this data are necessary to determine which mediators are injurious.

Cellular Drivers of Inflammation

❖ We are actively developing a methodology for extracting and separating single cells from the human brain to investigate the source of the cytokines and chemokines that we detect following acute brain injury.

“Physiology seeks to derive the processes in our own nervous system from physical forces, without considering where these processes are or are not accompanied by process of consciousness.”

Wilhelm Wundt

PRE CONFERENCE CME ON MEDICAL EDUCATION

INDEX

PRE CONFERENCE CME ON MEDICAL EDUCATION

Pre Conference CME on MEDICAL EDUCATION

Date: 17th March 2021

PROGRAM SCHEDULE

TIME	TOPIC	RESOURCE FACULTY
SESSION I		
Chairpersons	Dr. M Aslam, President SAAP Dr. K.K. Deepak, AIIMS, New Delhi Dr. G.K. Pal, JIMPER, Puducherry Dr. Rokeya Begum, President, BPS Bangaladesh	
8:30 am -9:00 am	Inauguration and Welcome address	
9:00 am- 9:50 am	Aligning Assessment with CBME Objectives	Prof. Robert G Carroll, Greenville, USA
9:50 am-10:30 am	Assessment Planning and quality assurance	Dr. Renuka Sharma New Delhi, India & Dr. Manasi Bhattacharjee AIIMS, Guwahati
10:30 am- 11:00 am	Student Assessment: fail or pass for teachers in the system of Assessment	Dr. Amaranath Karunanayake Sri Lanka
11:00 am-11:40 pm	Conducting Assessment for Undergraduates-Experience from southeast region	Prof. Md. Ruhul Amin Bangladesh
11:40 am-1 2Noon	**Tea Break**	
Session II		
Chairpersons	Dr. Savithri Wimalasekera, Secretary General, SAAP Dr. Iqbal Alam, HIMSR, New Delhi Dr. Farah Khalique, UCMS, New Delhi Dr. Dr. Prasun Priya Nayak, AIIMS, Jodhpur	
12 Noon-12:40 pm	Assessment of Knowledge by constructing Quality MCQs	Prof. Samina Malik & Prof. Mahwish Arooj, Lahore, Pakistan
12:40 pm-01:20 pm	Assessment using long and short answer question: Advantages and Disadvantages	Prof. Bishnu Hari Paudel, Nepal
01:20 pm-2:00 pm	OSCE/OSPE in Resource poor setting	Prof. Musharraf Husain, New Delhi, India
2:00 pm – 2:30 pm	LUNCH	
Session III		
Chairpersons	Dr. Yogesh Tripathy, Shardah University, New Delhi Dr. Himani Ahluwalia, VMMC, New Delhi Dr. Ramanjan Sinha, AIIMS, Raipur Dr. Bharti Bhandari, GIMS, Greator Noida, UP	
2:30 pm-3:00 pm	Online Assessment- Relevance in current scenario	Dr. Sabina Khan New Delhi, India
3:00 pm-3:30 pm	Blueprinting in Assessment	Dr. Aqsa Shaikh New Delhi, India
3:30 pm-4:00 pm	Assessment of clinical skills	Dr. Lata Mullur Dept. of Physiology, BLDE, University, Vijyapura
4:00pm	VOTE OF THANKS	

ME – 1
Aligning Assessment with CBME Objectives

Prof. Robert G. Carroll,

Ph.D., Brody School of Medicine, East Carolina University, Greenville, North Carolina, USA

The incorporation of competencies has transformed medical education across the globe. This transition requires implementing instructional approaches that emphasize learner centered activities, such as case-based instruction, problem-based instruction, and the flipped classroom. Assessment also has to expand to those emphasizing observation, as competency-based education requires documentation of knowledge, skills, and attitudes. The Medical Council of India established five competency domains as the organizing principles of medical education in their 2015 Vision Statement: Clinician, Leader and Member of the Healthcare Team and System, Communicator, Lifelong Learner, and Professional. There are three challenges to assessment that must be overcome. First, assessments have to be mapped to competencies. While not every course will contribute to every competency, each competency must be assessed multiple times throughout the curriculum. Second, assessments have to adopt a longitudinal perspective emphasizing formative processes. Implementing progress testing is one way to attain document the attainment of competencies. Third, reliance on observation as a dominant tool for assessment requires faculty development to reduce interrater reliability. Behavioral anchors are useful to provide a shared expectation among the learners and the instructors. In conclusion, the shift to competencies aligns both education and assessment to the knowledge, skills and attitudes expected of a medical professional.

ME – 2
Assessment planning and quality assurance

Dr. Renuka Sharma

Department of Physiology, 1VMMC and Safdarjung Hospital, New Delhi, India

Assessment has a powerful positive steering effect on learning and the curriculum. In planning and designing assessments, it is essential to recognize the high stakes and the consequent implications of the assessment outcomes. of the An overarching strategic and systematic approach to assessment, including blueprinting of an appropriate assessment format for each outcome, is imperative to plan a robust curriculum, ensure accreditation and foster student's learning. The strategy should cover formative and summative assessment, since the former is informal, frequent, dynamic and contributes greatly to the student's learning curve. A wide range of assessment methods currently available includes essay questions, OSCE, logbooks, MCQs, long case assessment and simulators, which need to be chosen with a view to their utility. Concomitant Faculty development is an essential prerequisite to standardise the training and assessment protocols across all institutions.

Quality assurance is one of the defining aspects of any profession. Conscious measures taken in order to assure quality of a medical graduate is an important step towards professionalization of the medical education process. QA depend on the complexity of the end product, number of processes through which a product passes and the level of precision required. It is therefore evident that QA in medical education is not an easy task. Likewise, most of the regulatory bodies focus more on quantity rather than quality. A more pragmatic way to ensure QA in medical education would be to apply the principles of QA in assessment. Aligning assessment to the goals and objectives with constant internal and external QA may ensure to a considerable extent the quality of medical graduates.

ME –3
Student Assessment: Pass or fail for the teachers in the system of Assessment

Dr. Amaranath Karunanayake Faculty of medicine, University of Ruhuna, Sri Lanka

One of the key elements of the successful functioning of an educational institution is the conduct of examinations according to accepted norms, rules and regulations in a transparent manner and release of results on time. Furthermore, different modes of assessments used should be able to accurately grade the students based on the expected outcomes of the course.

Setting question papers, marking answer scripts and processing marks are three important stages of the assessment process. The meticulous planning of all three stages is essential for accurate estimation of students' achievements.

Accurate assessment of students' attainment of learning outcomes, confidentiality, accountability, transparency, compliance with by-laws and avoiding conflicts of interest are the key principles to be considered in planning of an assessment. Setting the mechanism in motion at the correct time is an important responsibility of the administration and the academic head.

Large failure rates in an examination may expose the weaknesses in the students as well as the weaknesses in the curriculum, delivery of teaching-learning process or the evaluation process. Particularly in the rapidly advancing fields of medicine and related subjects, it is important that academics strive hard to incorporate new developments in the field as well as new developments in the medical education and assessment techniques into their teaching-learning process. As academics we shall not miss the indirect message meant for us in the result sheets of students; success or failure of academics and academic programme.

ME – 4
Uniform Medical Education in South Asia - Role of SAAP

Prof. Md. Ruhul Amin

Shahabuddin Medical College Dhaka, Bangladesh

South Asia is the southern region of Asia with a huge population and geopolitically very important area in the world map. This year's Virtual Biennial SAAP VII & PSI Conference-2021 will be held on March 23-25, 2021, at Hamdard Institute of Medical Sciences & Research, New Delhi-India. Pre-Conference Medical Education workshop on 17th march 2021.

Assessment system is a key point by which we can open the door of uniform Medical Education in South Asia and can make history . It is an essential part of SAAP. . I spoke at SAAP 3 conference Sri Lanka on “Assessment System.in Physiology”, and at the SAAP V Scientific Conference at Kathmandu University, Nepal on “Advance of Physiology in South Asia”. Therefore planning and conducting student assessment will be helpful for Medical Education in South Asia. In Bangladesh we published a book named “MAT Modern Assessment Technique in medical physiology which led to overcome the traditional examination system. Now MCQ, SAQ, SOE, OSPE, summative and formative methods of assessment have been introduced in the present curriculam . We have some strong recommendations about the Inter South Asian examination system and external examiner exchange system should be discussed. SAAP should come forward to improve the quality of assessment and also development of physiologists. It is an interesting, encouraging and valuable direction in Medical Education in South asia.

Practical development of Physiology started in ancient India, Egypt and later on Europe, America (Ref: SAAPCON-2016. Pg: 159). Our environment, culture, socioeconomic variations, disease pattern, lifestyle, education, health and so many things are similar in South Asia. This inspires us to work for Uniform Medical Education in South Asia. SAAP can play a vital role. SAAP VII Conference ‘21 at Hamdard University, India may find out the right path for forward movement.

ME – 5
How to assess knowledge by making quality MCQs in Physiology

Prof. Samina Malik

University College of Medicine, University of Lahore, Lahore, Pakistan

Multiple Choice Questions (MCQs) are used as one of the means of assessment in medical colleges and postgraduate exams. Most of the published books on MCQs contain item-writing flaws. They frequently violate item-writing guidelines. Likewise, most in-house questions have been shown to be flawed due to lack of formal faculty training in item construction. Scores of students have been observed to improve by pre-hoc and post-hoc item-analysis. It has resulted in removing or rephrasing the flawed items.

The interactive talk will discuss the common technical item flaws in MCQs. It will be followed by examples of MCQs with technical item flaws to receive corrective feedback from faculty. Finally item-writing guidelines will be revealed with focus on writing high cognitive level scenario-based MCQs.

Handout will be provided to registered participants to consult while designing multiple choice questions.

Expected outcome: Faculty will be able to critique on flawed MCQs and exhibit improvement in the quality and cognitive level of their multiple choice items for effective assessment of learning.

ME – 6
Assessment using short and long answer questions: advantage and disadvantage

Bishnu Hari Paudel,
Professor of Physiology & Medical Educationalist BP Koirala Institute of Health Sciences, Dharan, Nepal.

Appropriate assessment of knowledge has been a challenge in medical education. Thus, a search is going on for better assessment tools. Essay-type questions are in use for assessing cognitive domain; they are modified for better validity, reliability, acceptability, educational impact, and cost of the test tools. Improving essay-type questions has produced: structured long answer questions (SLAQ), modified essay questions (MEQ), short answer questions (SAQ), very SAQ, etc. These types of questions along with multiple-choice questions are widely used in many medical schools around the globe. At postgraduate and clinical years of undergraduate levels, long answer questions are in use after structuring them for better understanding by students and 'standardized' easier marking of their responses. Using MEQ (clinical scenario-based sequential questions) is increasingly considered better as compared to traditional essay-type questions. Frequent tests by using varieties of question types, wide coverage of curricular content would improve the quality of an examination.

ME – 7
Objective Structured Clinical Examination

Dr. Musharraf Husain
Department of Surgery, Coordinator, Medical Education Unit, HIMSR, Jamia Hamdard, New Delhi, India

OSCE is an assessment tool in which the components of clinical competence (History taking, Examination, Procedural skills, Communications etc.) are tested against an agreed checklist by rotating the students around the number of stations. It was introduced by Dr. Harden in 1975.

All three domains can be tested by employing OSCE as an assessment tool. It usually test the "shows how" level of Millers Pyramid. Various advantages of OSCE are- they are objective, all domains of competencies can be tested simultaneously, contents are identical for all students with equal timings, same examiners and systematic feedback as an integral part.

There are three types of OSCE stations- observed or procedure, unobserved or question station and couplet stations. The total number of OSCE stations will vary based on the number of skills to be tested. The total usually vary from 10-25. Fewer than 10 are probably inadequate and greater than 25 become difficult to conduct. The duration is usually determined by the competency to be tested. The length of time will range from 5-20 min. The time allocated per station should be as uniform as possible thus facilitating the smooth movement of examinees from station to station. Transit time must be built into the total time allocated for each station.

Various skills that can be tested by OSCE include history taking, physical examination, laboratory data and radiographic interpretation, technical and procedural skills, Counselling and attitudinal behaviours and Communication skills.
The most critical component of OSCE is preparation of Checklist for each station and it is truly considered as heart of OSCE. Preparation requires predetermined objective criteria that are agreed upon by the concerned faculty. Checklist should be concise, unambiguous and written to contribute to the reliability of the station.

OSCE is also not without criticism, the most important drawback is the non-holistic approach and compartmentalization of knowledge. Oobserver's fatigue is very common, they are difficult to make, expensive and extensive human resources are required. There are always chances of leaking of stations.

Even with all these concerns, OSCE is still considered as very good assessment tool with high reliability and validity if constructed well.

ME – 8
Online Assessment – Relevance in Current Scenario

Prof. Sabina Khan

Department of Pathology, Member, Medical education Unit, HIMSR, Jamia Hamdard, New Delhi, India

Assessment being a core component of learning is at the heart of medical education. In medical training, assessment is largely conducted in offline mode. However, current COVID-19 crisis has opened the doors for introducing online innovations for assessment of students. The online portal has been a vital tool for both teaching as well as assessment during the SARS- Cov 2 pandemic. It is important to develop creative ways of assessment that continue to maintain the standards of medical education.

Online assessment involves the use of electronic or digital devices to construct or deliver assessment tasks. This may also be used to monitor progress of learners, to mark or grade assessments, and for record keeping of these data. The digital devices can range from simple devices such as smart phones or tablets, to laptops and desktop computers, and can go up to complex simulators and gaming devices. Wherever possible, we should plan to conduct online assessment after an online teaching session.If teaching becomes electronic then assessment too will need to take that route to ensure alignment between the modes of teaching and assessment.

Principles of Online assessment are same as face to face assessment, maybe more vigorous. It is important to frame your own questions /scenarios in an assessment, which is all the more important in an online assessment .It offers various advantages such as higher flexibility, easy accessibility from remote areas, automated marking, immediate feedback, increased motivation to enhance performance. However, there are various myths/assumptions about E Assessment; eg- it will be objective, can only test recall or low level learning outcomes, reliability and plagiarism issues and cost of online assessment.

With E-assessment, a whole range of different question formats are possible. include Multiple choice questions and their variations, Short answer questions, Fill in the gap/Cloze, Picture based questions Videos, Simulations, Electronic portfolios, Open book examination, online or electronic OSCEs. Various popular online assessment tools are available namely Google Forms, Socrative, Mentimeter, Poll Everywhere, Kahoot etc

To conclude, Online assessment is now an integral part of the assessment toolbox. To be fully acceptable, we will have to seek tools which make assessment valid, reliable, cost-effective and acceptable. It is not the ultimate solution to all our woes. The bottom line of using e-assessment tools in the field of medical education is that it offers substantial potential benefits but needs to be carefully managed to minimize potential risks. E-assessment methods at present are not well established and creating awareness may help to change the outlook of both teachers and learners.

ME – 9
Blueprinting in Assessment

Dr. Aqsa Shaikh

Dept. of Community Medicine, Member, Medical Education Unit, HIMSR, Jamia Hamdard, New Delhi, India

Blueprinting is a map or specification for an assessment program which ensures that all the aspects of the curriculum are covered over a specified period of time. It links assessment to specific learning objectives. Blueprinting specifies the design in operational terms. This helps in making clear all the dimensions of a question (objective, form, content area and the marks). The need for blueprinting arises as it helps in making the assessment clear, explicit and transparent to students, helps to match competencies with the assessment. Further, it gives students and idea as to what is being examined and also helps paper setters in avoiding biases. The attributes of an assessment instrument is that it is relevant, valid, reliable, objective and feasible. Blueprinting helps avoid construct under representation and construct irrelevance. Before starting blueprinting we should be clear about scope and purpose of assessment – whether it is undergraduate or postgraduate, formative or summative assessment, which domain of learning is to be tested, what is the level to be tested and assessment methods to adopted. The process involves with deciding weightage to be given to various content areas and assignment of weightage to various assessment methods.

ME – 10
Assessment of clinical skills

Dr. Lata Mullur
Department of Physiology BLDE, University Vijayapura, Karnataka, India

Traditionally, assessment has focused on educational outcomes such as the acquisition of knowledge or the demonstration of certain competencies in controlled settings. With CBME comes a shift to work-based assessment, and our thinking must shift to assessments that take into account the impact of trainees' competence on the quality of care provided to the patient.

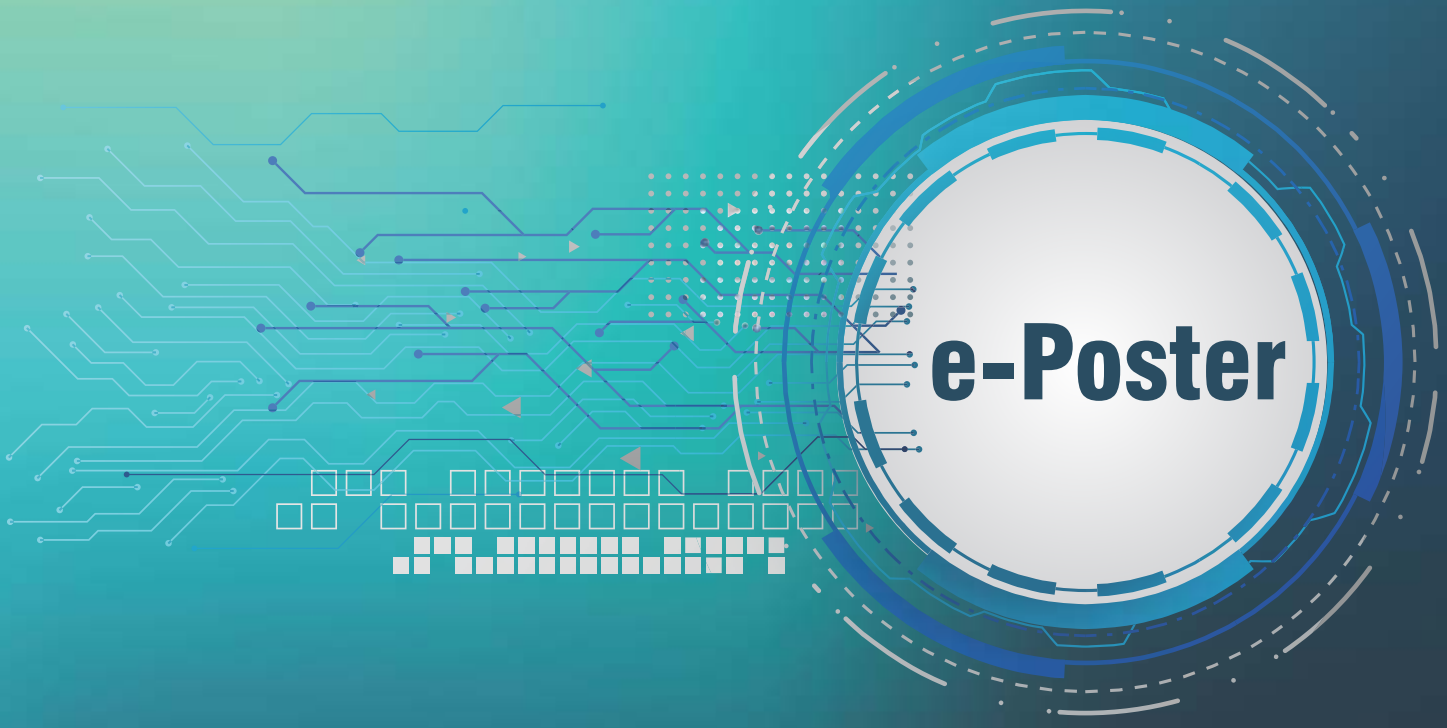
In medical education, clinical evaluation and assessment is one of the most important and challenging tasks for the teaching faculty. Medical students are required to learn a number of practical skills, many of which can be lifesaving. Assessment in medical education is especially important because we are certifying students as fit to deal with human lives.

Assessment is an authentic and systematic process to know/certify the progress of learning. It is not only needed to categorize students' 'pass' or 'fail' but it has other roles like rank ordering the students, measuring improvement over a period of time, providing feedback to student and teaches about areas learnt areas requiring further attention, maintaining the quality of educational programs. It improves learning by refining the assessment program and/or T-L methods.

Blueprinting or detailed planning of the assessment, well ahead of the actual assessment is very essential to make it satisfactory, authentic and effective.

Optimizing an assessment program in the era of CBME will require multiple methods, multiple assessors, training of assessors, reconceptualization of the role of psychometrics and recognition of the importance of group process in reaching critical decisions about competence.

> *"Eventually the process of aging,*
> *which is unlikely to be simple, should be understandable.*
> *Hopefully some of its processes can be slowed down or avoided.*
> *In fact, in the next century,*
> *we shall have to tackle the question*
> *of the preferred form of death."*
>
> *Francis Crick*


e-Poster

LIST OF E-POSTER PRESENTATION

BANGLADESH

PP 1

Effect of music therapy on cardiac autonomic dysfunction in generalized anxiety disorder
Bithi Mallik | bithimallik1985@gmail.com
SRGIH Dhaka

PP 2

Cardiovascular responses to tilting in Type 2 Diabetic patients
Iffat Rejwana | iffat.rezwana.ananna@gmail.com
BSMMU

PP 3

Effect of slow breathing exercise on glycaemic status in type 2 diabetic male patients
Dr. Jenefer Yesmin | jene.bsmmu@gmail.com
National Institute of ENT

PP 4

Does vitamin D3 supplementation affect antioxidant enzymes in D3 deficient patients with asthma COPD overlap (ACO)? - A randomized controlled trail
Dr. Maksuda Bitey Mahmud | maksudalima2@gmail.com | BSMMU

PP 5

Teaching MBBS students physiology in a government medical college of Bangladesh during COVID 19 pandemic- a personal experience
Mohammad Uzire Azam Khan | uzire@yahoo.com | Abdul Malek Ukil Medical College

PP 6

Effects of Spirulina platensis on neuropathic pain in wistar rats
Dr. Monira Shahnaz | monirapurbasha9@gmail.com
Ashiyan Medical College

PP 7

Physiological variation of bleeding time and clotting time in respect to gender
Dr. Raheena Akter | raheenadr@gmail.com
Bangladesh Medical College

PP 8

Effect of green tea on glycemic status in female metabolic syndrome patient
Dr. Sabira Tabassum | sabira.tabassum77@gmail.com
Delta Medical College

PP 9

Vitamin D3 supplementation on plasma antioxidant enzymes in D3 deficient patients with COPD - A randomized controlled trail
Dr. Salma Anjum | salma.fmc@gmail.com | BSMMU

PP 10

Serum Calcium and Phosphate in Children with Autism Spectrum Disorder
Dr. Sharmin Afroz | sharminbright@gmail.com
BSMMU

LIST OF E-POSTER PRESENTATION

BANGLADESH

PP 11

Evaluation of cardiovascular autonomic nerve function status in overweight and obese individuals
Dr. Suraiya Pervin | drnarju@gmail.com | Prime Medical College

PP 12

Pulmonary rehabilitation on anthropometry and exercise tolerance in copd patients
Lt. Col (Dr.) Mohammad Nesar Uddin Ahmed
nesarj9@gmail.com | Armed Forces Medical College, Dhaka

PP 13

Cardiovascular responses to tilting in Type 2 Diabetic patients
Iffat Rejwana
iffat.rezwana.ananna@gmail.com | BSMMU

PP 14

Prevalence of Cardiovascular Disease Risk Factors among students of School of Medicine and Health Science, University of Papua New Guinea
Nayma Sultana | nayma_sultana@yahoo.com | University of Papua New Guinea

PP 15

Microalbuminuria and e-GFR in newly diagnosed type 2 diabetic patients in comparison with healthy adults in Rajshahi city
Rumana Ferdous | akhi62001@gmail.com | Rajshahi Medical College

PP 16

Serum calcium, magnesium and C-reactive protein levels in women with metabolic syndrome in Bangladesh
Sumaiya Mohammad | sumaiyanwadud@gmail.com | BSMMU

PP 17

Does vitamin D3 supplementation affect antioxidant enzymes in D3 deficient patients with asthma COPD overlap (ACO)? - A randomized controlled trail
Dr. Maksuda Bitey Mahmud | maksudalima2@gmail.com | BSMMU

LIST OF E-POSTER PRESENTATION

INDIA

PP 1
Pre-hypertension: A study in 18-20 year age group
Dr. Abhay Kumar Panday
abhay.physiology@gmail.com | Government Allopathic Medical College

PP 2
"Prediction of Cardiorespiratory Fitness in Sports persons and Sedentary Individuals : an Indian Perspective"
Dr. Amit Bandyopadhyay | bamit74@gmail.com | University of Calcutta

PP 3
Pulmonary function and body Composition of young Muslim males during the month of Ramadan
Dr. Anindita Singha Roy
anindita.tarapukur@gmail.com | University of Calcutta

PP 4
Immediate effect of short duration of slow deep breathing on autonomic parameters in healthy young adults
Bhavna | bhavnac685@gmail.com | Teenthankar Mahaveer University

PP 5
A probable mechanism of Bamboo shoots (Bambusa balcooa) induced thyroid dysfunction
Deotima Sarkar | deotima_s@yahoo.com | University of Calcutta

PP 6
Smartphones: Do they smarten the brain?
Dr. Anjali N Shete | dranju01@yahoo.com | GMCH, Aurangabad

PP 7
Status of oxidative stress markers in Type II Diabetes mellitus patients with Vitamin D deficiency
Dr Ayesha Juhi
juhiayesha@gmail.com | Apollo institute of medical science and research, Hyderabad

PP 8
Anti - inflammatory activity of ten indigenous plants in carrageenan Induced paw oedema in albino rats
Dr. Manjula SD | manjula.sd@manipal.edu | KMC, MAHE, Manipal

PP 9
Perception of altered Smell and Taste sensation post COVID-19 vaccination: Impact on psychological wellbeing
Dr Mythri G | g.mythri@gmail.com | IMER, Ramnagar

PP 10
Influence of body fat, lean body mass and BMI levels on maximal oxygen consumption using sub-maximal exercise in young adults: Observational study | Dr Nagalakshmi v
drlakshmi26medicine@gmail.com | SDM College of Medical Sciences & Hospital, Karnataka

LIST OF E-POSTER PRESENTATION

INDIA

PP 11
Assessment of arterial stiffness in women with hypothyroidism during pregnancy
Dr Priyanka Garg
priyankagarg9288@gmail.com | Government Allopathic Medical College, Banda (U.P.)

PP 12
Assessment planning and quality assurance
Dr Renuka Sharma
drrenukasharma@yahoo.co.in | VMMC and Safdarjung Hospital

PP 13
Bilateral vagotomy significantly attenuates the bradykinin- induced vasosensory reflex responses in anesthetized rats | Dr Sanjeev K. Singh
drsks07@bhu.ac.in | Institute of Medical SciencesBanaras Hindu University, Varanasi

PP 14
Effect of repeated exposures to experimental cold pain stimulus on pain unpleasantness in healthy young Indian men
Dr. Savitha D | savitha.d@stjohns.in | St. John's Medical College, Bangalore

PP 15
An Association of respiratory symptoms on the pulmonary function parameters in the residence of mine tailing community: Cross sectional survey
Dr. Usha G Shenoy | ushaudupi@gmail.com | Sri Devraj Urs Medical College

PP 16
Anti - inflammatory activity of alcoholic and aqueous extract of andrographis paniculata in carrageenan induced paw oedema in albino rats
Dr. Vasanthalaxmi | kvl.upadhya@manipal.edu | kmc, mahe, manipal

PP 17
Does Psychological Health Of Future Doctors Affects Academic Performance? Unmasking The Masked.
Dr. Afshan Kausar | dr.afshankausar@gmail.com | JIIUS, IIMSR, Badnapur

PP 18
Impact of handedness and anthropometric measures on hand grip strength in university students
Dr. Akansha Singh | akansha.singh91@gmail.com | SMS&R, Sharda University

PP 19
Effect of yoga on stress levels among first year medical students: a non- randomized study
Dr Aman Gupta | dramanguptarunning@gmail.com | M S Ramaiah Medical College, Bangalore

PP 20
Evaluation of Anxiety ,Stress &Depression in first year medical students of Government Siddhartha Medical College – A Cross Sectional Study
Dr. Amrita Makhijani | m.amrita25@yahoo.com | Siddhartha Government Medical College, Vijaywada

LIST OF E-POSTER PRESENTATION

INDIA

PP 21
Comparison of corticomotor excitability of Chronic migraine and healthy population of North-India: an exploratory study
Dr. Anant Kumar | anantkumar39458@gmail.com | AIIMS, Jodhpur

PP 22
The cognitive ability of short-interval time estimation & reaction time and their association with sleep-wake variables in patients with chronic obstructive pulmonary disorder (COPD)
Dr. Babita Pande | babitatime2014@gmail.com | All India Institute of Medical Sciences (AIIMS), Raipur

PP 23
A study on gender differences on selective attention among students of age group 18 to 20 years.
Dr. Humera Ayesha | humeraayesha717@gmail.com | Osmania Medical College

PP 24
Peripheral neuropathy in pre-diabetes: a case controlled study
Dr. Jayshri R. Ghateghate | jayshri@aiimsraipur.edu.in | AIIMS Raipur

PP 25
Anti-nidatory action of Ala8,13,18-magainin II amide (AMA) on human placentalcytotrophoblast cells
Dr. Mudasir Bashir | beingmudasirbaba@gmail.com | GMC, Srinagar

PP 26
Comparison of EEG findings among Schizophrenia patients and healthy controls
Dr. Nikita Verma | vermanitika17@gmail.com | Lady Hardinge Medical College, New Delhi

PP 27
Recovery cardiovascular and SpO2 responses post exercise in young sedentary and physically active individuals
Dr. Noorain Sultana | sparklenoorain@gmail.com | Gandhi Medical College, Hyderabad

PP 28
Relative afferent pupillary defect in Glaucoma
Dr. Padmavathi Kasa | dineshkumar2010first@gmail.com | Osmania Medical College

PP 29
Chronotherapeutic responsive drug delivery systems
Dr. Raghavendra V. Kulkarni | BLDE University, Vijayapur, Karnataka

PP 30
Algogen-induced vasosensory reflexes modulate short-term heart rate variability parameters in experimental rat models
Dr. Revand R. | revandgreat@gmail.com | Institute of Medical Sciences, BHU

LIST OF E-POSTER PRESENTATION

INDIA

PP 31
Motor Fitness and haemoglobin concentration of Male Judo and Karate Athletes of Kolkata, India
Dr. Rishna Dalui | rishna.dalui@gmail.com | University of Calcutta

PP 32
Study of Cardiovascular Autonomic Functions and Anxiety Score in Adults With recently diagnosed type 2 Diabetes Mellitus
Dr. Safura Dewani | peerzadasafura15@gmail.com | Government Medical College, Srinagar

PP 33
Effect of Slow Deep-Breathing Exercise on Systolic Blood Pressure in Normotensive adults
Dr. Sajja Madhuri | dr.madhusajja@gmail.com | Osmania Medical College, Hyderabad

PP 34
A Comparative Study of Hand grip strength in anemic and non-anemic females in a tertiary care hospital in Hyderabad
Dr. Sana Siraj | drsanasiraj1@gmail.com | Osmania Medical College

PP 35
Association between Smoking and Glycated Haemoglobin in Newly Diagnosed Type II Diabetes Mellitus Male Patients Visiting OPD: A Hospital Based Study
Dr. Shah Mohammad Abbas | Waseemabbas14waseem5@gmail.com | JNMC | AMU

PP 36
Prevalence of Internet Addiction in Indian population
Dr. Swati Bansal | swatisbbansal@gmail.com | Maulana Azad Medical College, New Delhi

PP 37
Blood pressure response to sustained handgrip test – A single test for diagnosing autonomic neuropathy in patients of Chronic kidney disease on haemodialysis
Dr. T. Kiran Kumar | gvt.kiran@gmail.com | KIMS , Koppal

PP 38
Students' perception on guided reflective narratives on ethics case vignettes integrated into Physiology curriculum
Dr. Taniya Anto | tanya.anto@gmail.com | St. John's Medical College, Bangalore

PP 39
Effects of Yoga on depression of men
Dr. Trupti Gurav | dr.trupteeborulkar@gmail.com | JIIUS, IIMSR, Badnapur

PP 40
Evaluation of risk of developing Type 2 Diabetes Mellitus in 1st year students of Government Siddhartha Medical College – A Cross Sectional Study.
Dr. Vellapalem Arhitha Sai | vellapalemarhithasai@gmail.com | SGMC, Vijaywada

LIST OF E-POSTER PRESENTATION

INDIA

PP 41 **Investigation of autonomic function test in healthy type 'A' and type 'B' personalities in adults age group**
Dr. MD. Imitiyaz Bharti | imtiyaz197981@gmail.com | VMMC & Safdarjung Hospital

PP 42 **ECG changes to Acute Mental Stress in Obese Adults**
Dr. Priya S.A. | drpriyasa@gmail.com | JSS Medical College Mysuru

PP 43 **Effectiveness of Early Clinical Exposure as an Additional Teaching Learning Method in Enhancing the Understanding of Anemia in Physiology**
Dr. Rajalakshmi.R | rajalakshmimd@yahoo.com | JIPMER, Puducherry

PP 44 **Recent advancements in therapies to prevent Alzheimer's disease**
Kashika Singh | s.kashika@gmail.com | AIPAS, Amity University

PP 45 **Carotid artery mechanics during non-hypotensive hypovolemia**
Kavita Yadav | kavee.yadav243@gmail.com | AIIMS, New Delhi

PP 46 **Archaeosomes: Nano drug delivery system to enhance drug bioavailability into plasma**
Manoj Kumar Yadav
manojyadav2093@gmail.com | Department of Biotechnology (SCLS) | Jamia Hamdard, New delhi

PP 47 **To study the Relationship between Fatty acid binding protein-3 and high sensitive-CRP in acute myocardial infarction (AMI)**
Mritunjay Kumar Mishra | mritunjaymishra007@gmail.com | SBKSMI & RC

PP 48 **Efficacy of wearable Technologies to monitor Physiological responses in children with Autism Spectrum Disorder: A Review Study**
Ms. Deepti Ahuja | dahuja2@amity.edu | Amity University, Noida

PP 49 **Effect of different concentration of boron as immunomodulator in visceral lishemaniasis**
Noor Fatima | noorjhimm@gmail.com | JHIMM

PP 50 **Occupational Stress among Female House Maids of Kolkata, India**
Piyali Mukherjee | pmcu22@gmail.com | University of Calcutta

LIST OF E-POSTER PRESENTATION

INDIA

PP 51 **Gut Microbiota Dysbiosis: Unrealized intervention strategies for the treatment of neurological disorders**
Pratik Saha | pratiksaha129@gmail.com | Amity University, Noida

PP 52 **Impact of SARS CoV 2 induced inflammation on cardiovascular system**
Rabab Syeda Mirza
rababmirza.1998@gmail.com | Department of Physiology, HIMSR, Jamia Hamdard, New Delhi

PP 53 **Quality of sleep in breast cancer patients undergoing chemotherapy**
Ritika Sharma | sharmaritika5198126@gmail.com | AIIMS, Jodhpur

PP 54 **To study sympathetic autonomic variability in Medical students of Era's Lucknow Medical College and its correlation with ABO Blood Group System**
Roohi Khan | roohikhan02733@gmail.com | Era's Lucknow Medical College, Lucknow

PP 55 **To study the association of body mass index with sympathetic function In young male adults**
Rovins Kumar | rovinskumar1111@gmail.com | Teenthankar Mahaveer University

PP 56 **Effect of duration of Type 2 Diabetes Mellitus on Long Term memory in 30-50 years of age**
Sapna Ayilliyath Maleveettil | sapnapavithran@gmail.com | GMC Kannur, Kerala

PP 57 **Impact of cardiac enzymes on ST and Non-ST segment elevation Myocardial infarction patients**
Shazli Naaz
shazianaaz27@gmail.com | Department of Physiology, HIMSR, Jamia Hamdard, New Delhi

PP 58 **SARS-CoV-2 infection predisposes pregnant women to a greater severity of preeclampsia: A possible association** | Sheema Wajib
sheemawajib1996@gmail.com | Department of Physiology, HIMSR, Jamia Hamdard, New Delhi

PP 59 **Effect of Exercise and Manual Therapy on Pain And Dynamic Balance in Osteoarthritis Patients: Pilot Study**
Shorab Ahmad Khan | sohrab18sep@gmail.com | Jamia Hamdard

PP 60 **Evaluation of Relationship between Physical Fitness and Creativity in School Going Girls of Kolkata, India**
Soma Das | somad.cal@gmail.com | University of Calcutta

LIST OF E-POSTER PRESENTATION

INDIA

PP 61

Dyslipidemia as an effect of acute aluminium exposure on female albino rats
Mr. Sutirtha Ghosh | aamisutirtha@gmail.com | AIIMS, Jodhpur

PP 62

High intensity interval inspiratory muscle training in hypercapnic copd patients during weaning: a case report
Tabassum saher | stabassumsaher@gmail.com | HIMSR, New Delhi

PP 63

To study the renal parameters and electrolytes in patients with sickle cell disease (SCD)
Vanraj Diyora | vanaraj.diyora@gmail.com

LIST OF E-POSTER PRESENTATION

NEPAL

PP 1

Effect of Acute Sleep Deprivation of 24 hrs on Cognitive Function in Young Medical Students of BPKIHS | Dr. Karishma Rajbhandari
Pandaykarishma@bpkihs.edu | Government Siddhartha Medical College , Vijayawada.

PP 2

Acute effect of selective yogic exercise on Brainstem Auditory Evoked Potential in stable patients of Chronic Obstructive Pulmonary Disease
Dr. Penchha Nembang | penchhalimboo@gmail.com | B.P. Koirala Institute of health sciences

LIST OF E-POSTER PRESENTATION

PAKISTAN

PP 1 **Is COVID-19 More Prevalent in Malaria Non-endemic Countries than Malaria Endemic Countries?** Abdul Rehman Arshad
ararshad312@gmail.com | CMH Lahore Medical College & Dentistry

PP 2 **How Professionalism is seen by Pakistani Medical Undergraduates in the light of "Arabian LAMPS"** | Dr. Ahmad Farooq Butt
ahmad.farooq@ucd.uol.edu.pk | UCMD, UNIVERSITY of lahore, punjab, Pakistan

PP 3 **Identifying the role of Heat Shock Proteins (HSPs) in ageing of males**
Ayesha Riaz | ayeshaiqbal1211@gmail.com

PP 4 **Prevention of diet-induced hyperlipidemia by vitamin D intervention- An RCT on mouse model** | Chaman Nasrullah
chamanarif7@gmail.comUniversity College of Medicine and Dentistry, Lahore

PP 5 **Effect of Moderate Physical Activity on Antioxidant Status in Prediabetic Population**
Dr Zubia Shah | zubiashah1971@gmail.com | Khyber Medical University, Peshawar

PP 6 **How Professionalism is seen by Pakistani Medical Undergraduates in the light of "Arabian LAMPS"**
Afreen Nabi | afreennabi01@gmail.com

PP 7 **Proteomic profiling and Identification of Potential Novel Biomarker inInfertile Polycystic Ovary Syndrome** | Dr. Ambreen Tauseef
ambertauseef@hotmail.comLahore Medical College & IOD, Lahore

PP 8 **Myotoxic effect of crude venom of echis carinatus: a study on isolated ileum Preparation of rabbit**
Dr. Arifa savanur | arifa.savanur@gmil.com | University of Karachi

PP 9 **Chronic periodontitis a possible threat towards CVD**
Dr. Ayesha Sadiqa | ayeshaias@yahoo.com | Shalamar Medical and Dental College, Lahore

PP 10 **Correlation of BMI Variation with Tidal Function in Healthy Young Adults**
Dr. Ayesha Sadiqa | ayeshaias@yahoo.com | Shalamar Medical and Dental College, Lahore

LIST OF E-POSTER PRESENTATION

PAKISTAN

PP 11
Mild chronic periodontitis: a possible threat towards cvd in males with raised C-RPp
Dr. Ayesha Sadiqa | ayeshaias@yahoo.com | Shalamar Medical and Dental College, Lahore

PP 12
Correlation of glycemic index with thyroid function tests in patients of type 2 diabetes mellitus
Dr. Farhat Ijaz | farhat_khurram_rana@cmhlahore.edu.pk | CMH LMC & IOD, Lahore

PP 13
Impact of Lockdown due to Coronavirus Disease of 2019 (COVID-19) on the Weight related Quality of Life
Dr. Farhat Ijaz | farhat_khurram_rana@cmhlahore.edu.pk | CMH LMC & IOD, Lahore

PP 14
Association of Sleep paralysis with Insomnia and sleep quality among medical undergraduates
Dr. Farhat Ijaz | farhat_khurram_rana@cmhlahore.edu.pk | CMH LMC & IOD, Lahore

PP 15
Effects of COVID-19 lockdown on mental health and sleep disturbances in medical and dental undergraduates from a private medical college in Pakistan
Aiza Anwar | dr_humakhan@hotmail.com | CMH Lahore Medical College

PP 16
Irisin; a promising muscle hormone
Dr. Madiha Imran | madiha.imran@fui.edu.pk | Foundation University, Islamabad

PP 17
Role of Vitamin-D in Fibromyalgia Development: Cross Sectional Study
Dr. Maher Sohail Yaseen
soh_amb@hotmail.com | D.G Khan Medical College, Dera Ghazi Khan-Pakistan

PP 18
Effect of preferred learning styles on academic achievements: a cross sectional descriptive study
Dr. Maryam Rao | dr.maryamrao@gmail.com | Fatima Jinnah Medical University, Lahore, Pakistan

PP 19
Protective role of hericium erinaceus consumption in ischemic reperfusion injury in middle cerebral artery occlusion rat model of stroke
Dr. Nazish Iqbal Khan | nazzik@live.com | University of Karachi. Karachi. Pakistan

PP 20
Association of novel Stop Gained Leukemia Inhibitory Factor Receptor Gene (rs121912501) Variant, Leukemia Inhibitory Factor and Ovarian Steroids with Unexplained Infertility among Pakistani women
Dr. Rabiya Rehan | rabiya.rehan@gmail.com | Karachi Institute of Medical Sciences, Malir Cantt, Karachi

LIST OF E-POSTER PRESENTATION

PAKISTAN

PP 21

Evaluation and comparison of the effects of conventional and newer antiepileptic drugs on lipid profile of epileptic patients
Dr. Sadia Islam | sadiamurtaza98@yahoo.com | Rashid Latif Medical College, Lahore

PP 22

The interplay of serum visfatin with anthropometric and glycemic parameters in non-diabetic female subjects
Dr. Tashfeen Ikram | dr.tashfeenikram@gmail.com | Rashid Latif Medical College, Lahore

PP 23

Prevalence of Digital Eye Strain (DES) among the Video Gaming Community of Pakistan
Ibtehaj Munir | ibtehajmunir009@outlook.com | CMH Lahore Medical College, Pakistan

PP 24

Evaluation of reproductive toxicity potential of carica papaya linn. Seed extract
Nazneen Zehra | naznynz@gmail.com | University of Karachi

PP 25

Impending role of lipid peroxidation products in the development of oral submucousal fibrosis
Nooria Naeem | dr.noorianaeem@gmail.com

PP 26

The purpose of this study is to measure the prevalence of Pre menstrual syndrome (PMS) levels among female population of Pakistan, to check the association of PMS with depression, anxiety and stress and to get a comparative analysis of PMS symptoms between medical professionals, non medical professionals, working and non working females.
Talha Bin Fazal | talhabinfazal@gmail.com | CMH LMC & IOD, Lahore

PP 27

Differential expression and specificity of mmp-9, malondialdehyde (mda) and 8 hydroxy guanosine (8ohdg) in newly dianosed schizophrenics
Zoobiah Hafiz | drzobiahhafiz@gmail.com

LIST OF E-POSTER PRESENTATION

SRI LANKA

PP 1

Psychosocial determinants of adolescents impacts cognitive functions; a Sri Lankan study
Dr. LS Kaththiriarachchi
lasakamd@ymail.com | General Sir John Kotelawala Defense University, Rathmalana, Sri Lanka

PP 2

Effectiveness of Peer Assisted Learning for medical undergraduates Faculty of Medicine, Wayamba University of Sri Lanka | Dr. R.A.N. Ranathunga
pavithrananayakkara1991@gmail.com, ranayomi@wyb.ac.lk | Wayamba University of Sri Lanka

PP 3

Effect of pulmonary rehabilitation in COPD patients in a low resource setting in Jaffna, Sri Lanka
Dr. (Mrs) M. Sooriyakanthan | bsmmathanki@gmail.com | University of Jaffna, Sri Lanka

PP 4

Cardiovascular autonomic neuropathy and diabetic peripheral neuropathy among a periurban type 2 diabetic population in Colombo district, Sri Lanka
Ms.Nilushi Nisansala | nilushinisansala00@gmail.com | KIU, Srilanka

PP 5

Comparison of prevalence of osteoporosis and the association between bone mineral density and selected risk factors among pre-menopausal and post-menopausal women attending a health camp in urban Sri Lanka | Prof. Piyusha Atapattu
piyushaa@physiol.cmb.ac.lk | Faculty of Medicine, University of Colombo

PP 6

Post-stroke homecare skills of family-caregivers of dependent stroke survivors on care related to Activities of Daily Living, a study from Colombo, Sri Lanka
S. A. M. H. Kumara | mkumara200@gmail.com | University of Sri Jayewardenepura, Sri Lanka

PP 7

Non-contact distance measurer (NCDM) for median and ulnar motor nerve conduction velocity studies (NCS)
Dr Amaranath Karunanayake | a2222nath@gmail.com | University of Ruhuna, Srilanka

PP – 1

Effect of music therapy on cardiac autonomic dysfunction in generalized anxiety disorder

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Background: Poincare plot analysis of heart rate variability (HRV) is a complex method for assessing cardiac autonomic nerve function (CANF) in generalized anxiety disorder (GAD). This study aimed to observe the effect of music therapy on HRV by poincare plot analysis in GAD patients.

Method: This prospective interventional study was done in 2019 on 60 newly diagnosed GAD patients aged 20-40 years, both male and female. Among them 30 patients were under music therapy with Raga Bhairabi based Rabindrasangeet for 3 months and 30 patients were without music therapy for three months. Healthy controls who were enrolled in this study, were Age, sex and BMI matched. HRV of all GAD patients and control were recorded at baseline and after three months of follow up. HRV were recorded by Power Lab 8/35. For statistical analysis Bonferroni's Post Hoc test and paired Student's 't' test were done.

Result: SD1, SD2 and SD1/SD2 were significantly lower in all GAD patients compared to healthy control at baseline. After 3 months of music therapy, significant increment of these parameters occurred whereas no changes of these except SD1 were noted in patients without music after 3 months. Moreover these parameters were not significantly different in music therapy compared to control at the end of three months.

Conclusion: Music therapy can improve cardiac autonomic dysfunction in GAD patients.

PP – 2

Cardiovascular Responses to tilting in Type 2 Diabetic Patients

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Background: Diabetes mellitus (DM) is a disorder with a debilitating effect on cardiac autonomic control. Multiple major cardiovascular risk factors associated with DM led diabetic patients at high risk of Cardiovascular Disease.

Methods: This experimental study was conducted on 60 patients of Type 2 DM (T2DM). Among them, 30 patients were with normal cardiovascular reflex test (group DN) and 30 patients were with abnormal test (group DA). Thirty (30) apparently healthy subjects with similar age and BMI without any physical illness were enrolled as control. Tilt table test of all subjects was done by tilting at 60° for 10 minutes by using a motorized tilt table.Cardiovascular response to tilt test was assessed by calculating ? Heart rate (Acceleration index and Brake index); ? SBP (SBP 30s-0 and SBP1 min -0), ? DBP (DBP 30s-0 and DBP1 min -0) after tilting. For statistical analysis, one-way ANOVA followed by Bonferroni post hoc was used.

Results: In this study, the Acceleration index was significantly higher in patients of group DN compared to control and DA ($p<0.001$). But the Brake index was significantly ($p<0.01$, $p<0.05$) lower in both group of patients compared to control. In addition, SBP 30sec-0 and SBP1min-0 were significantly higher in DA than those of control and DN.DBP30sec-0 and DBP1min-0 were significantly ($p<0.001$) lower in DA patients compared to DN and control.

Conclusion: This study concluded that cardiovascular response to tilting was weak in T2DM patients and it was greatly affected in T2DM patients with abnormal autonomic function test.

PP – 3

Effect of slow breathing exercise on glycaemic status in type 2 diabetic male patients

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Background: Slow breathing exercise (SBE) improves the chronic disease. This study designed to observe the effects of slow breathing exercise on glycaemic status in male patients with type 2 diabetes mellitus (DM).

Methods: This interventional study recruited sixty (60) diagnosed male type 2 diabetes mellitus (T2DM) patients aged 45-55 years with disease history 5-10 years, from Out Patients Department (OPD) of Endocrinology, Bangabandhu Sheikh Mujib Medical University, Bangladesh. Thirty patients performed SBE for 30 minutes 2 times daily for 3 months (study group) and 30 patients did not perform any breathing exercise (Control) and were under follow up for similar duration. Fasting plasma glucose (FPG), 2 hours post prandial plasma glucose (PPPG) and glycosylated hemoglobin (HbA1c %) of all patients were assessed at baseline and after 3 months of study. Independent sample and paired t-test were used for statistical analysis.

Results: In this study the mean FPG, 2 hrs PPPG and HbA1c significantly ($p<0.05$) reduced in patients with SBE after 3 months whereas no significant changes in FPG, 2 hrs PPPG was observed, moreover HbA1c significantly increased ($p<0.01$) after 3 months in patients who were not under SBE.

Conclusion: Glycaemic parameters were significantly improved after slow breathing exercise in type 2 diabetic patients.

PP – 4

Does vitamin D3 supplementation affect antioxidant enzymes in D3 deficient patients with asthma COPD overlap (ACO)? - A randomized controlled trail

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Background: Asthma COPD overlap (ACO) is a new disease entity where respiratory tract is continuously exposed to oxidants causing oxidative stress. Vitamin D3 has few evidences of increasing antioxidant enzymes level which neutralize these oxidants.

Methods: A double blinded placebo controlled RCT was carried out on 60 D3 deficient [serum 25(OH)D<30 ng/ml], male, smoker, stable ACO patients (40-80 years). After final selection, all patients were randomly allocated to D3 supplemented 'Study' (n=30) or placebo treated 'Control' (n=30) groups. Baseline plasma superoxide dismutase (SOD) and catalase (CAT) were measured. Subsequently, standard pharmacological treatment of ACO and sunlight exposure (within 11-16 hrs; 20 minutes daily) were prescribed, for all patients. Along with them, 'Study' patients received 80,000 IU (2 oral capsules) of D3 per week, for first 13 weeks. Thereafter, according to their serum 25(OH)D or calcium concentration, they received 40,000 IU (1 oral capsule) of D3 per 1 week or per 2 weeks or per 6 weeks or no further supplementation, for subsequent 13 weeks. Whereas, all the 'Control' patients received 2 oral capsules of placebo weekly, for consecutive 26 weeks. After 26 weeks, both enzyme levels of all patients were again measured by ELISA. Data were analyzed by Student's paired and unpaired 't' tests, where $p \leq 0.05$ was accepted as significant.

Results: Initially a total 60 patients were enrolled and randomized, but ultimately 40 of them completed the trial. The baseline enzymes levels of two groups were not significantly different. However, mean of both enzymes was increased in both groups after 26 weeks, but it was statistically significant ($p<0.001$) only in 'Study' patients. In addition, SOD ($p<0.05$) and CAT ($p<0.01$) were significantly higher in D3 supplemented patients than those with placebo, after 26 weeks.

Conclusion: Vitamin D3 supplementation increases the plasma antioxidant enzyme in D3 deficient stable ACO patients.

PP – 5

Teaching MBBS students physiology in a government medical college of Bangladesh during COVID 19 pandemic- a personal experience

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Background: The authority instructed to continue medical education through online classes during COVID-19 pandemic. The objective of the study was to have experience of teaching 1st year MBBS students online during the pandemic.

Methods: This qualitative pilot study was conducted in the Department of Physiology, Abdul MalekUkil Medical College Noakhali, Bangladesh during July'20 to January'21. Of four teachers posted in the department of Physiology for 138 1st phase MBBS students, two were available to take online classes. Firstly, three lectures were taken by using 'PowerPoint' slides projecting on LED-TV monitors and shared with the students through 'Facebook'. Thinking it to be more time consuming to complete the syllabus in time, the investigator wrote notes on the topic manually and sent it to the students through mobile apps 'IMO'. Then 'whiteboard and marker' were used to take lectures and shared through Facebook. Finally, 'Zoom meeting apps' was used to take lecture with screen sharing of 'PowerPoint' lecture. 'Google class room' was installed for notices and exams.

Results: Students expressed satisfaction on lectures using 'whiteboards and marker' and 'Zoom meeting' apps but were not satisfied with hand written notes. Lecture with 'Zoom meeting' apps was appreciated by a veteran physiologist of the country as it involved latest technology. Sharing physiology lectures in Facebook was praised by an African Physiologist and she commended it a 'great task'.

Conclusion: Teaching medical students Physiology online couldn't yield expected outcome perhaps due to lack of knowledge of technology and proper instructions to follow.

PP – 6

Effects of Spirulina platensis on neuropathic pain in wistar rats

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Background: Spirulina platensis (Sp), a medicinal herb, shown to possess several beneficiary biological activities while conventional analgesics showed various adverse effects in the treatment of neuropathic pain.

Methods: This experimental study was conducted on 120 Wistar rats of both sexes (200±50 gm). On the basis of treatments, all rats were grouped into control [normal saline (NS) 5 ml/kg], sham control [sham surgery + NS], CCl control [CCl + NS], Sp experimental (CCl + Sp 400 mg/kg), Gli experimental [CCl + Sp (400 ml/kg) + glibenclamide (15 mg/kg)] groups. Sp and NS were administered orally once daily for consecutive 21 days and single dose of glibenclamide was given intraperitonially. Further every group was subdivided again according to neuropathic pain evaluation tests into 'a' (walking track analysis), 'b' (cold tail immersion test), 'c' (Von frey test),'d' (hot plate test). Statistical analysis was done by one way ANOVA followed by Bonferroni post-hoc test.

Results: Here, Sp showed significantly (p 0.001) higher sciatic functional index, tail flick latency, paw withdrawal threshold and reaction time in Sp experimental rats when compared to those of CCI control rats. Moreover, there were significant (p 0.001) differences in the above-mentioned variables between rats of Sp experimental group and Gli experimental group.

Conclusion: From this study it might be concluded that, Spirulina platensis prevents development of neuropathic pain in Wistar rats by opening of KATP channel

PP – 7

Physiological variation of bleeding time and clotting time in respect to gender

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Background: Determination of bleeding time and clotting time is essential prior to do any surgical procedure. Some studies found that females have longer bleeding and clotting time than males.

Methods: A cross-sectional study was conducted in the Department of Physiology, Dhaka Medical College, Dhaka from July 2016 to June 2017. After fulfilling the ethical aspect a total number of 150 1st year M.B.B.S students were selected with age ranging from 17 to 20 years from student's register of Dhaka Medical College on the basis of inclusion and exclusion criteria. The research work was carried out after obtaining ethical clearance from Ethical review committee of Dhaka Medical College. The study parameters included bleeding time and clotting time and were estimated in the Department of Physiology, Dhaka Medical College, Dhaka. Data were collected and recorded pre-designed questionnaire form. For statistical analysis unpaired Student's t-test was performed as applicable using SPSS for Windows Version 22.0.

Results: In this study, bleeding time and clotting time were significantly prolonged ($p<0.001$) in female than male.

Conclusion: The present study revealed that the bleeding time and clotting time are significantly higher in female compared to male.

PP – 8

Effect of green tea on glycemic status in female metabolic syndrome patient

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Background: Metabolic syndrome (MetS) is becoming the major public health problem as it is associated with development of cardiovascular diseases (CVD) and Type 2 Diabetes. Different organizations have recommended to modify lifestyle and dietary habit as primary intervention. Some epidemiological studies provided the evidence that pronounced cardiovascular and metabolic health benefit can be obtained by regular consumption of green tea.

Methods: After fulfilling the ethical aspect, this interventional study was conducted on 48 females with MetS with the age range from 40 to 50 years. Participants were randomly assigned in study group (26 women) and control group (22 women). Study group consumed green tea one cup/three times daily, 30 minutes after meal for 12 weeks and the control group did not consume green tea. The subjects were asked to maintain former food habit, physical activities and type and doses of medicine (oral hypoglycemic drugs, antihypertensive or lipid lowering agent). Finally, 22 subjects from study group and 20 subjects from control group had completed the study. In both groups fasting serum glucose (FSG) and glycosylated hemoglobin (HbA1c) were measured by glucose oxidase (GOD/PAP) method and modified high performance liquid chromatography (HPLC) method respectively 2 times (at baseline and after 12 weeks). Data were analyzed by paired Student's't' test and unpaired Student's 't' test where $p<0.05$ was considered as level of significant.

Results: After 12 weeks of intervention, FSG & HbA1c were found significantly (ð<0.001) lower in the study group than those of their baseline value, also significantly ($p<0.05$) lower in comparison to those of control group.

Conclusion: Regular consumption of green tea may improve glycemic status in patients with metabolic syndrome.

PP – 9

Vitamin D3 supplementation on plasma antioxidant enzymes in D3 deficient patients with COPD - A randomized controlled trail

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Background: Oxidant is a crucial factor for progression of COPD. Antioxidant enzymes, including superoxide dismutase (SOD) and catalase (CAT) have been well known to reduce morbidity of chronic disease. Vitamin D3 has antioxidant effect in human body.

Methods: A double blinded placebo controlled RCT was carried out on 30 D3 deficient [serum 25(OH)D<30 ng/ml], male, smoker, stable COPD patients (40-80 years). After final selection, all patients were randomly allocated to D3 supplemented 'Study' (n=15) or placebo treated 'Control' (n=15) groups. Baseline plasma SOD and CAT were measured. Subsequently, standard pharmacological treatment of COPD and sunlight exposure (within 11-16 hrs; 20 minutes daily) were prescribed, for all patients. Along with them, 'Study' patients received 80,000 IU (2 oral capsules) of D3 per week, for first 13 weeks. Thereafter, according to their serum 25(OH)D or calcium concentration, they received 40,000 IU (1 oral capsule) of D3 per 1 week or per 2 weeks or per 6 weeks or no further supplementation, for subsequent 13 weeks. Whereas, all the 'Control' patients received 2 oral capsules of placebo weekly, for consecutive 26 weeks. After 26 weeks, both enzyme levels of all patients were again measured by ELISA. Data were analyzed by Student's paired and unpaired 't' tests, where $p \leqslant 0.05$ was accepted as significant.

Results: Initially a total 30 patients were enrolled and randomized, but ultimately 20 of them completed the trial. The baseline enzymes levels of two groups were not significantly different. However, mean of SOD ($p \leqslant 0.01$) and CAT ($p \leqslant 0.001$) were increased in both groups after 26 weeks, but it was statistically significant only in 'Study' patients. In addition, both of these enzymes were significantly ($\leqslant 0.001$) higher in D3 supplemented patients than those with placebo, after 26 weeks.

Conclusion: Vitamin D3 supplementation increases the plasma antioxidant enzyme in D3 deficient stable COPD patients.

PP – 10

Serum Calcium and Phosphate in Children with Autism Spectrum Disorder

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Background: Autism spectrum disorder (ASD) is a complex disorder of neuronal development which may cause lifelong disability. The etiology of ASD involves gene-environmental interaction. Calcium signal is crucial for neuronal communication and neuro-plasticity and phosphate is related to neural energy metabolism. Therefore, deficiency of these minerals may act as an environmental risk factor for the development of ASD. This study aimed to assess serum calcium and phosphate in children with ASD.

Methods: This cross-sectional comparative study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU) Dhaka from March 2018 to February 2019. For this, 50 ASD children of both sex (age 3 to10 years) diagnosed by pediatric neurologist were included as 'Study' participants through 'Parents Forum of differently abled children, Mohakhali, Dhaka' and for comparison, age, BMI and sex matched 50 apparently healthy children were enrolled, as 'Control'. Serum calcium and phosphate level of all children were estimated by colorimetric method. All data were expressed as mean ± SD, range and percentage. For statistical analysis, Chi Square test, Shapiro Wilk test and independent sample 't' test was done, as applicable.

Results: The mean serum calcium was significantly ($p<0.01$) lower in ASD children compared to control, though the mean values were within normal reference range in both groups. However, hypophosphatemia was found in 4% of ASD children.

Conclusion: From this study, it may be concluded that ASD children was associated with lower serum calcium level and hypophosphatemia. Therefore, adequate dietary intake of calcium and phosphate is recommended for children with

PP – 11

Evaluation of cardiovascular autonomic nerve function status in overweight and obese individuals.

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Background: Overweight and obese individuals are increasing at an alarming rate throughout the world and this has been called “New world syndrome”. Overweight and obesity are important risk factors for non-communicable diseases and also associated with autonomic nervous system dysfunctions.

Methods: This cross sectional analytical study was conducted from July 2017 to June 2018 in the Department of Physiology, Rangpur Medical College, Bangladesh. Total number of 120 age matched subjects were selected, among them 40 were normal weight as control (group A), 40 were overweight (group B) and 40 were obese (group C). The evaluation of cardiovascular autonomic nerve functions were done by six simple noninvasive cardiovascular autonomic reflex tests. Data were analyzed by ANOVA tests, where $p \leqslant 0.05$ was considered as significant.

Results: In case of obese group resting heart rate, resting systolic blood pressure and diastolic blood pressure were significantly higher ($p<0.001$), whereas in overweight group only the resting systolic blood pressure was significantly higher ($p<0.05$) than control group. Among the parasympathetic nerve function parameters heart rate response to valsalva maneuver and deep breathing were significantly lower in overweight ($p<0.05$) and obese group ($p<0.001$), heart rate response to standing was significantly lower in overweight ($p<0.01$) and obese group ($p<0.001$). Among the sympathetic nerve function parameters blood pressure response to sustained handgrip were significantly lower in group B ($p<0.05$) and group C ($p<0.001$) but blood pressure response to standing were non-significantly lower ($p>0.05$) in both group B and group

C. Again, in cold pressor test both systolic and diastolic blood pressures were significantly lower in group B ($p<0.05$) and group C ($p<0.001$). Impaired cardiovascular autonomic nerve functions were observed in 13(32%) overweight and 29(72%) obese subjects.

Conclusion: Overweight and obese individuals exhibit modifications in cardiovascular autonomic nervous system characterized by a reduction in both sympathetic and parasympathetic activity.

PP – 12

Pulmonary rehabilitation on anthropometry and exercise tolerance in COPD patients

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Background: COPD is a major cause of morbidity and mortality throughout the world. Drug treatment alone does not optimize therapy. Objectives: Concerning the improving effect of individual Pulmonary rehabilitation (PR) on anthropometry and physical efficiency of COPD patients this study was designed to evaluate the effects of combination of breathing exercises (pursed lip breathing and diaphragmatic breathing) and lower extremity endurance training on 6 Minute Walk Distance (6MWD), on peripheral capillary O2 saturation (SpO2%), on level of dyspnea and level of fatigue in stable patients with moderate COPD.

Methods: This prospective interventional study was conducted in the Department of Physiology, BSMMU, Dhaka from July 2010 to June 2011 on 116 male stable moderate COPD patients aged 50 to 65 years. They were enrolled from the out patient department of the Department of Medicine, BSMMU and NIDCH, Dhaka. Fifty six (56) patients without PR constituted control group and 60 patients intervened with PR were designated as experimental group. The experimental patients were advised to perform the PR program for 30 minutes duration per session at home twice daily, for consecutive 60 days along with the standard drug treatment of COPD. The control patients were advised to continue their standard drug treatment alone for consecutive 60 days. For the assessment of anthropometry, BMI was recorded and for exercise tolerance, 6MWD, SpO2%, the level of dyspnea and level of fatigue of all subjects were recorded on day 0 and day 60 for both the groups. 6MWD was measured by 6 minute walk test (6MWT), SpO2% was recorded by portable Pulse Oximeter and the level of dyspnea as well as fatigue were recorded by Modified Borg Scale. Statistical analysis was done by independent sample't' test and paired Student's't' test, as applicable.

Results: Significant improvements were observed in BMI, 6MWD, SpO2%, the level of dyspnea and fatigue in experimental patients in comparison to control, at day 60. In addition, significant improvements were observed in all these variables after completion PR program compared to their baseline in the experimental patients.

Conclusion: The study concludes that regular exercise of all components of PR program improve BMI and exercise tolerance in stable COPD

PP – 13

Role of fractional exhaled nitric oxide in distinguishing asthma-COPD overlap among patients with COPD: A cross-sectional study

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Background: Asthma COPD overlap (ACO) and COPD shares much of their clinical presentations, ensuring difficulties in their differentiation. Since, both of them are characterized by airway inflammation, fractional exhaled nitric oxide (FeNO), as an inflammatory biomarker, can be used for this purpose. This study aimed to assess the role of this local biomarker in distinguishing ACO among patients with COPD

Methods: We enrolled pulmonologist diagnosed, 63 male stable patients of COPD during the period March 2019 to February 2020 from 2 tertiary care hospital of Dhaka, Bangladesh. Among them, 51 patients were finally selected according to inclusion and exclusion criteria and divided into two study groups, ACO (n=26) and COPD-alone (n=25), according to GINA-GOLD joint guideline on syndromic approach. FeNO of all patients were measured by NOBreath FeNO Monitor (Bedfont, England).

Results: ReNO was significantly higher (p? 0.01) in patients with ACO than that of COPD-alone. In addition, area under the receiver operating characteristic curve of this biomarker was found 0.724 and the optimal cutoff value was 29.5 ppb to get the best diagnostic accuracy. Furthermore, at optimal cutoff value, sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio, negative likelihood ratio, accuracy of FeNO were found as 72.00%, 84.60%, 81.82%, 75.86%, 4.67, 0.33, 78.43%, respectively.

Conclusion: FeNO can play substantial role in distinguishing ACO among the stable patients of COPD with good diagnostic accuracy.

PP – 14

Prevalence of Cardiovascular Disease Risk Factors among students of School of Medicine and Health Science, University of Papua New Guinea

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Background: About 31% of all deaths worldwide are caused by cardiovascular diseases (CVDs) alone with more than 75% occurring in low-income and middle-income countries. Their incidences are increasing among young adults with no data existing on the prevalence of risk factors among the students of School of Medicine and Health Science (SMHS).

Methods: This cross-sectional study was done on 169 students at the School of Medicine and Health Sciences, University of Papua New Guinea. In addition to taking history of CVD risk factors, study parameters also included anthropometric measurements (i.e. BMI, mid-arm circumference, and waist-hip circumference), pulse rate and blood pressure measurements.

Results: More than 50% of students being overweight or obese. Systolic blood pressure was higher in males than females. 38.5% and 5.8% had systolic blood pressure 120 – 139 mm Hg and 140-159mm Hg respectively. 28.9% had diastolic blood pressure 80 – 89 mm Hg and 1.9% had diastolic blood pressure 90 – 99 mm Hg. 19.2% are current smokers, 48.1% consume alcohol. 32.6% do no exercise at all. Furthermore, 34.6% had a CVD history.

Conclusion: CVD risk factors were prevalent, even among the apparently healthy young medical students. The young adults are at risk of CVD at a much earlier stage in their life than expected. Strategies to prevent cardiovascular disease among the young population should be put in place.

PP – 15

Microalbuminuria and e-GFR in newly diagnosed type 2 diabetic patients in comparison with healthy adults in Rajshahi city.

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Background: Diabetes Mellitus (DM) is one of the common and challenging health problems in the 21st century. The incidence of DM related complications are increasing enormously but there are scarcity of studies focusing the issue in comparison to normal individuals. So, this study was designed to measure urine microalbumin level and e-GFR in diabetic and non-diabetic subjects for their utility in diagnosis of diabetic nephropathy.

Methods: This hospital based cross-sectional analytical study was conducted at the Department of Physiology of Rajshahi Medical College in collaboration with Diabetic Association Hospital, Rajshahi, Bangladesh from January 2019 to December 2019. Study subjects were approached and diabetic subjects of 40-70 years age group (FPG $\geqslant$ 7.00 mmol/L or 2 h PG $\geqslant$ 11.1 mmol/L) were included as cases and age matched non-diabetic subjects were included as controls. Any respondent with conditions that might increase microalbuminuria such as urinary tract infection, haematuria, heart failure, febrile illness, severe hypertension was excluded. Following informed written consent, detailed history, physical examination and necessary investigations including OGTT, serum creatinine, urinary microalbumin were performed. Calculation of e-GFR will be done by Cockroft-Gault formula using the result of serum creatinine.

Results: Patients having increased level of urinary microalbumin was 31.25% among cases while none in control group. Number of subjects having decreased eGFR was also significantly higher in case group than control group (23.75% vs 8.75%). The mean urine microalbumin was higher in diabetic patients than in healthy adults (24.63±14.75 mg/day vs 11.59±5.41 mg/day) while eGFR level was lower in diabetic patients (95.63±17.84 ml/min vs 100.65±13.52) with statistical significance ($p<0.05$).

Conclusion: This study observed significant alteration in urine microalbumin and eGFR level among type 2 diabetic patients than healthy adults. So, these simple tests would be helpful in newly diagnosed Diabetic patients to assess the renal function.

PP – 16

Serum calcium, magnesium and C-reactive protein levels in women with metabolic syndrome in Bangladesh

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Background: Metabolic syndrome is a risk factor for cardiovascular, chronic lung, liver and kidney diseases. Hypercalcaemia, hypomagnesaemia and elevated C-reactive protein (CRP) produce various complications such as cardiac arrythmia, renal stones, depression, osteoporosis, atherosclerosis etc. Some researchers suggested that hypercalcaemia, hypomagnesaemia and elevated CRP occur in metabolic syndrome patients.

Methods: A cross sectional study was conducted from March 2019 to July 2020 in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka, Bangladesh. Thirty female metabolic syndrome patients age ranging twenty five to forty five year, diagnosed according to International Diabetes Federation criteria in the Outpatient department of Endocrinology in BSMMU were selected for the study. Thirty age and gender matched apparently healthy female subjects were also selected for comparison between the groups. Serum calcium, magnesium were measured by colorimetric method and serum CRP was measured by immuno-turbidimetric method using automated analyzer. For statistical analysis, independent sample't' test was performed for serum calcium and Mann-Whitney U test was performed for serum magnesium and CRP to observe comparison between groups. Chi-square test was performed to observe associations of serum calcium, magnesium and CRP with metabolic syndrome.

Results: In this study, serum mean value of calcium was significantly higher (p value $\leqslant 0.05$) and median value of serum. CRP was significantly higher (p value $\leqslant 0.01$) in metabolic syndrome patients than that of controls. 53.3% of metabolic syndrome patients had elevated level of CRP.

Conclusion: This study may conclude that serum calcium and CRP levels elevate in metabolic syndrome patients. It can further conclude that elevated CRP is associated with metabolic syndrome.

PP – 17

Does vitamin D3 supplementation affect antioxidant enzymes in D3 deficient patients with asthma COPD overlap (ACO)? - A randomized controlled trail

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Background: Asthma COPD overlap (ACO) is a new disease entity where respiratory tract is continuously exposed to oxidants causing oxidative stress. Vitamin D3 has few evidences of increasing antioxidant enzymes level which neutralize these oxidants.

Methods: A double blinded placebo controlled RCT was carried out on 60 D3 deficient [serum 25(OH)D<30 ng/ml], male, smoker, stable ACO patients (40-80 years). After final selection, all patients were randomly allocated to D3 supplemented 'Study' (n=30) or placebo treated 'Control' (n=30) groups. Baseline plasma superoxide dismutase (SOD)

and catalase (CAT) were measured. Subsequently, standard pharmacological treatment of ACO and sunlight exposure (within 11-16 hrs; 20 minutes daily) were prescribed, for all patients. Along with them, 'Study' patients received 80,000 IU (2 oral capsules) of D3 per week, for first 13 weeks. Thereafter, according to their serum 25(OH)D or calcium concentration, they received 40,000 IU (1 oral capsule) of D3 per 1 week or per 2 weeks or per 6 weeks or no further supplementation, for subsequent 13 weeks. Whereas, all the 'Control' patients received 2 oral capsules of placebo weekly, for consecutive 26 weeks. After 26 weeks, both enzyme levels of all patients were again measured by ELISA. Data were analyzed by Student's paired and unpaired 't' tests, where $p \leqslant 0.05$ was accepted as significant.

Results: Initially a total 60 patients were enrolled and randomized, but ultimately 40 of them completed the trial. The baseline enzymes levels of two groups were not significantly different. However, mean of both enzymes was increased in both groups after 26 weeks, but it was statistically significant ($p<0.001$) only in 'Study' patients. In addition, SOD ($p<0.05$) and CAT ($p<0.01$) were significantly higher in D3 supplemented patients than those with placebo, after 26 weeks.

Conclusion: Vitamin D3 supplementation increases the plasma antioxidant enzyme in D3 deficient stable ACO patients.

"The experimenter who does not know what hi is looking for will never understands what he finds."

Claude Bernard"

PP – 1

Pre-Hypertension: A study in 18-20 year age group

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Background: Youth of 18 to 20 year age range making successfully to medical college admission represent struggling lot. Genotype, phenotype and environmental interactions that drive cardiovascular and other lifestyle diseases may be recognized meaningfully at such stage. Early detection of disease and its determinants can guide timely interventions and correction toward prevention/reduction of morbidity and mortality in modern lifestyle maladies.

Method: 23 subjects (16 male & 7 female) in 18-20 year age range found to be prehypertensive upon screening were studied in comparison with 15 matched normotensive peers. Familial, psychological behavioral, clinic-demographic and biochemical parameters were examined do define relevant associated trait of prehypertension.

Result: History of maternal hypertension was significant determinant of prehypertension. Dietary and physical activity profiles did not differ but psychological morbidity was more prevalent in prehypertensives as opposed to the normotensives. Overweight/obesity and activation of sympathetic nervous system were particularly associated with prehypertension group. Hyperinsulinaemia and insulin resistance was significantly associated while changes in lipid profile and level of inflammatory marker homocystein did not differ statistically significantly in prehypertensive group versus the normotensive controls.

Conclusion: Screening at early age is sound approach to unravel prehypertension and metabolic syndrome, in subjects with family history of such disorders. Detection of risk factors would help their timely modification for prevention/reduction of full grown disease.

PP – 2

Prediction of Cardiorespiratory Fitness in Sportspersons and Sedentary Individuals: an Indian Perspective

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Maximum oxygen consumption (VO2max) and physical fitness index (PFI) are the indicators of cardiorespiratory fitness which is often evaluated by indirect methods due to unavailability of well-equipped infrastructure, especially in the field based studies where large number of samples are evaluated within a short span of time. Such methods include Queen's College step test, Cooper's 12 min walk run test, Fox protocol, 20 m multi–stage shuttle run test, heart rate ratio method, modified Harvard step test, etc. These methods are extensively used in different populations although these protocols were originally standardised and recommended in Western populations. Attempts were made to validate these norms in sportspersons and healthy sedentary individuals of different age groups of both genders in Kolkata and its suburban regions. Observations varied significantly between adults and school going children as well as in different categories of sportspersons of different genders belonging to similar age group. Application of these indirect prediction models revealed the necessity to modify these tests. Accordingly, necessary amendments were executed in the experimental procedures to fit the protocols to the respective study population followed by authentication of the modified protocols in the confirmatory group to recommend the norms. Recommended protocols were found to produce reliable results and thus it proves the essentiality of population specific standardisation of indirect protocols to acquire consistent data.

Key words: VO2max, PFI, QCT, Cooper test, Fox protocol.

PP – 3

Pulmonary function and body Composition of young Muslim males during the month of Ramadan

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Background: Altered dietary and sleep patterns affect the pulmonary structure and function as well as body composition during Ramadan intermittent fasting (RIF). Present study was aimed to investigate the effects of RIF on pulmonary function tests (PFTs) and body composition in healthy young Muslim males of Kolkata, India.

Methods: Fifty healthy young Muslim male individuals (20-25 yrs age) who were undergoing RIF were recruited as the experimental group (EG). Another 50 untrained Muslim male participants of same age range who were not participating in RIF were recruited as Control group (CG). PFTs and body composition were measured by expirograph and skin fold measurement, respectively.

Results: PFTs were within normal range and did not show any significant inter–group variation. Simple and multiple regression equations were computed to predict PFTs from body mass and body height in the studied population. One–way repeated measure ANOVA depicted significant difference in PFTs and body composition parameters in EG whereas the CG showed insignificant difference.

Conclusion: RIF adversely affected the body composition although body mass and PFTs were not influenced by RIF in young Muslim males of Kolkata, India. Computed regression equations were recommended to predict the PFTs in the studied population.

PP –4

Immediate effect of short duration of slow deep breathing on autonomic parameters in healthy young adults

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Background: Pranayama is an ancient technique involving rhythmic and slow breathing. It is proven that regular practice of pranayama decreases sympathetic activity, increases parasympathetic tone, improves physical and mental health, decreases the effect of strain and stress on the body and improves respiratory and cardiovascular functions.

Methods: Heart rate, blood pressure, galvanic skin response and fingertip temperature of the subjects (n=140, age=18-25 years) was recorded following standard procedure. First, subject had to sit comfortably. The subject is directed to inhale through both nostrils slowly up to maximum for about 5 seconds and then exhale slowly up to maximum through both nostrils for about 5 seconds. These steps complete one cycle of slow deep breathing (respiratory rate 6/min). After 5 minutes of this breathing practice, all the autonomic parameters were recorded again.

Results: It was noted that after slow deep breathing (respiratory rate 6/min) for 5 minutes, heart rate, blood pressure, galvanic skin response decreased and fingertip temperature increased.

Conclusion: This study suggested that practicing of slow deep breathing (respiratory rate 6/minute) for 5 minutes could improve autonomic nervous system imbalance towards parasympathetic dominance.

PP – 5

A probable mechanism of Bamboo shoots (Bambusa balcooa) induced thyroid dysfunction

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Background: Bamboo shoots (BS) is a cyanogenic plant food that now is consumed popularly worldwide. It reportedly causes endemic goiter in North eastern states of India on regular consumption. The possible mechanism by which it causes disruption of certain thyroid hormone synthesizing regulatory elements at the cellular and molecular level was therefore explored.

Methods: Water extract of commonly consumed BS, Bambusa Balcooa Roxb (BBR) was analyzed by GC MS; three doses below IC50 were administered to thyrocytes in culture with and without iodine. Expressions of sodium iodide symporter (NIS), thyroid peroxidase (TPO), thyroglobulin (Tg), pendrin (PDS) and monocarboxylate transporter 8 (MCT8) were evaluated in thyrocytes with cell cycle analysis, reactive oxygen species generation, DNA oxidation and apoptotic regulation through Bax, Bcl-2 and p53.

Results: In BBR extract the precursors and metabolic end products of cyanogenic glycosides were found present. Dose dependent decrease in expression of NIS, TPO, Tg and PDS with associated decrease in gene expression of these with MCT8 were observed. Increased ROS, DNA oxidation and associated imbalance were found through increased Bax and p53 with decreased Bcl-2 that disconcerted thyrocytes cell cycle.

Conclusions: Cyanogenic constituents of BBR produces oxidative changes in thyrocytes due to increased ROS, associated with DNA damage and oxidation and cell cycle disruption followed by inhibition of thyroid hormone synthesizing regulatory elements; addition of extra iodine showed limited prevention.

Keywords: Thyroid, Bamboo Shoots, Tg, PDS, Iodine

PP – 6

Smartphones: Do they smarten the brain?

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Background: Technology has become part of our life and mobile phones are one of them. These smart phones are equipped with the capabilities to display photos, play games, watch videos and navigation, etc. Adoption of new technology has been challenging to the elderly. But, elder population is also moving towards digitally connected lives. As age advances there is a decline in the motor and cognitive functions of brain and hence the reaction time is affected. The study was undertaken to assess the usefulness of smartphones in improving the cognitive functions.

Material and Methods: 100 elderly subjects were enrolled for this study randomly from the urban areas. They were divided into two groups according to the scores of mobile phone addiction scale.(MPAS) Simple reaction time was estimated by Ruler drop method . The data was analyzed using mean, standard deviation and Pearson correlation test.

Results: The mean reaction time in Group A is 0.27+ 0.040 and the in Group B is 0.20 + 0.032 . The values show statistically significant change in reaction time.

Conclusion: Hence, the study concluded that the use of Smartphones in elderly is useful delaying the neurological decline and smarten the brain.

PP – 7

Status of oxidative stress markers in Type II Diabetes mellitus patients with Vitamin D deficiency

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Background: Deficiency of vitamin D has been associated with increased risk of developing Type II diabetes mellitus. In Diabetes Mellitus, augmented oxidative stress is due to the enhanced free radical-generating process and/or impaired capacity of the antioxidant defence system to scavenge the excess free radicals which are induced by chronic hyperglycemia. Vitamin D is a potent membrane antioxidant, it prevents the lipid peroxidation of the cell membranes there by preventing damage to the cells. Hence, this study was taken up with an objective to study the status of oxidative stress markers in diabetes mellitus patients with vitamin D deficiency.

Methods: This cross-sectional study was conducted on 55 newly diagnosed Type II diabetes mellitus patients of both the gender in the age group of 40- 80 years with the FBS of >125mg/dl. Biochemical parameters studied were HbA 1 C, Vitamin D levels and oxidative stress markers MDA (Malondialdehyde) , TAC (Total antioxidant capacity).

Results: Vitamin D levels and HbA1C had highly significant ($p<0.01$) negative association ($r=-0.402$) between them. Vitamin D also had a highly significant ($p<0.01$) negative association with MDA ($r=-0.410$).HbA1C had a negative correlation($r=-0.250$) with TAC but not statistically significant ($p>0.05$).

Conclusions: Vitamin D deficiency could be one the factors contributing to the development of hyperglycemia and progression into diabetes mellitus. Due to both conditions prevailing together could have led to increased oxidative stress in the body. Hence, it is important to periodically monitoring of Vitamin D levels and also including its supplementation in the treatment plan to improve the glucose tolerance in diabetes type II patients to avoid oxidative stress injury.

PP – 8

Anti - inflammatory activity of ten indigenous plants in carrageenan induced paw oedema in albino rats.

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Background: The anti-inflammatory activity of crude extracts of leaves of Jasminum grandiflorum (Jg), Vinca rosea (Vr), Azadirachta indica (Ai), Lawsonia inermis (Li), Nerium indicum (Ni), Calotropis gigantea (Cg), Tectona grandis (Tg), Andrographis paniculata (Ap), Tabernaemontana corymbosa (Tc) and Marsedinia volubilis (Mv) as well as alcoholic extracts of leaves of Calotropis gigantean(Cg),Tectona grandis(Tg) and Andrographis paniculata (Ap) were evaluated in Wistar rats.

Method: Anti-inflammatory activity was studied by calculating the volume changes in the hind paw after injecting carrageenan in rats treated with crude extracts of ten indigenous plants and alcoholic extract of leaves of Ap,Tg and Cg.

Results: The groups treated with crude extract & alcoholic extract of Cg, Tg and Ap showed significant reduction in the oedema compared to control and other plant extracts.

Conclusion: Plants have the ability to synthesize a wide verity of phytochemical compounds as secondary metabolites which shows anti-inflammatory activity

Keywords: Indigenous plants, carrageenan, anti-inflammatory, rats

PP – 9

Perception of altered Smell and Taste sensation post COVID-19 vaccination: Impact on psychological wellbeing.

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Background: The world is in the midst of a COVID-19 pandemic with considerable subjects experiencing smell and taste disorder (STD) as the first symptoms. Vaccines are a critical new tool in the battle against COVID-19 in saving lives and ending this pandemic. We wanted to assess the prevalence of smell and taste alteration post COVID-19 vaccination and its psychological impact.

Methods: The study was conducted during January-February 2021 after obtaining Ethical Clearance, CDSIMER. Data was collected from 192 health care workers following vaccination. Analysis was done using SPSS 21.

Result: Out of 192 respondents, we had 4.7% individuals having altered smell and 8.9% having altered taste sensations. 61% of those with STD were feeling disturbed because of the same.70% of all those with STD who got RT-PCR were negative for COVID-19 post vaccination.

Conclusion: True absence of taste or smell is rarer than dysfunction but are often neglected. The olfactory taste dysfunction may be due to interaction with the cranial nerves (Olfactory, Vagus, Facial, and Glossopharyngeal) via the angiotensin-converting enzyme receptor-2 causing desquamation of olfactory epithelium. Further studies with large cohort sizes and global collaborations with an objective assessment of STD are required to fully establish.

PP – 10

Influence of body fat, lean body mass and BMI levels on maximal oxygen consumption using sub-maximal exercise in young adults: Observational study.

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Background: Increased cardiovascular mortality in young adult due to overweight and obesity. To assess the association of body fat and lean body mass on maximal oxygen consumption (cardio respiratory fitness) in young adults of 18-20 years.

Methods: 66 (n=66) young adults in the age group of 18-20 of both the gender were included in the study. Total body weight was measured using weighing scale and height was measured using stadiometer. BMI was calculated using formula weight (kg)/ Height (mt 2). Body fat was measured using skin fold thickness with the help of calipers using Durnin- womersley equation. Lean body mass was calculated by subtracting total body weight with body fat mass. Maximal oxygen consumption was calculated using indirect method Rockport 1 mile walk test. Pearson's correlation matrix was used to assess the correlation between the variables.

Results: Study shows that there exists a strong negative correlation between body fat and BMI with maximal oxygen consumption. (r = -0.443: p = 0.00**) (r= -0.548: p= 0.00*).

Conclusion: Increase in BMI, especially because of increased body fat leads to reduced maximal oxygen consumption (cardio respiratory fitness) in young adults.

PP – 11

Assessment of arterial stiffness in women with hypothyroidism during pregnancy.

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Background: hypothyroidism during pregnancy can affect the mother health as well as the child before and after delivery. The present study was conducted to assess sequential profile of arterial stiffness in women with hypothyroidism during pregnancy.

Methods: Arterial stiffness indices {augmentation index (AIx) and carotid femoral-pulse wave velocity (cf-PWV)} were assessed using applanation tonometry at three time points i.e. 1st trimester:T1(11-13+5weeks), 2nd trimester:T2(20-22+5weeks), and 3rd trimester:T3(30-32+5weeks). Twenty hypothyroid pregnant women were recruited and compared with 20 age matched healthy pregnant women at three time points in a nested case control design.

Results: Two groups were similar in age, BMI and blood pressure. On sequential analysis, there was no significant difference in AIx@75 (%) [(T1vs.T2vs.T3: hypothyroid; 11.25 vs 7.4 vs 13.65 healthy pregnant group; 7.75 vs 5.5 vs 8.7)] and cf-PWV (m/s) in both the groups [(T1vs.T2vs.T3:hypothyroid; 6.1 vs 5.7 vs 5.9 healthy pregnant group; 5.5 vs 5.4 vs 5.2)]. On intergroup comparison, AIx@75 was found to be similar in two groups at all time points ($p>0.05$). cf-PWV was significantly higher in hypothyroid group than healthy pregnancy at first and third trimester of pregnancy ($p<0.05$).

Conclusions: hypothyroidism in pregnancy is associated with the increased central arterial stiffness starting from first trimester.

PP – 12

Assessment planning and quality assurance

Renuka Sharma, Manasi Bhattacharjee

Assessment has a powerful positive steering effect on learning and the curriculum. In planning and designing assessments, it is essential to recognize the high stakes and the consequent implications of the assessment outcomes of an overarching strategic and systematic approach to assessment, including blueprinting of an appropriate assessment format for each outcome, is imperative to plan a robust curriculum, ensure accreditation and foster student's learning. The strategy should cover formative and summative assessment, since the former is informal, frequent, dynamic and contributes greatly to the student's learning curve. A wide range of assessment methods currently available includes essay questions, OSCE, logbooks, MCQs, long case assessment and simulators, which need to be chosen with a view to their utility. Concomitant Faculty development is an essential prerequisite to standardise the training and assessment protocols across all institutions.

Quality assurance is one of the defining aspects of any profession. Conscious measures taken in order to assure quality of a medical graduate is an important step towards professionalization of the medical education process. QA depend on the complexity of the end product, number of processes through which a product passes and the level of precision required. It is therefore evident that QA in medical education is not an easy task. Likewise, most of the regulatory bodies focus more on quantity rather than quality. A more pragmatic way to ensure QA in medical education would be to apply the principles of QA in assessment. Aligning assessment to the goals and objectives with constant internal and external QA may ensure to a considerable extent the quality of medical graduates.

PP – 13

Bilateral vagotomy significantly attenuates the bradykinin-induced vasosensory reflex responses in anesthetized rats

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Background: It has been shown by various workers that intra-arterial (i.a.) instillation of algogens produced reflex cardiorespiratory (CVR) changes in anesthetized rats, substantiating the role of medium sized peripheral blood vessels in regulation of CVR system. The aim of this study was to understand the role of vagus nerve in algogen- induced vasosensory reflex responses altering CVR parameters.

Methods: Femoral artery was cannulated retrogradely and was utilized for the instillation of saline/bradykinin and recording of blood pressure (BP), using a double ported 24G cannula. BP, respiration and ECG were recorded for 30 min after instillation of bradykinin with or without vagotomy. Bradykinin (1 μM) was used as an algogen for the elicitation of vasosensory reflex responses altering CVR parameters.

Results: Instillation (i.a.) of bradykinin produced immediate (5-8 s) hypotensive (40 % of initial), bradycardiac (17 % of initial), tachypnoeic (45 % of initial) and hyperventilatory (96 % of initial) responses. In the vagotomised rats, bradykinin-induced hypotensive (18 % of initial), bradycardiac (1 % of initial), tachypnoeic (5 % of initial) and hyperventilatory (10 % of initial) responses attenuated significantly.

Conclusions: Pre-treatment with bilateral vagotomy significantly attenuated the mean arterial pressure, heart rate, respiratory frequency and respiratory minute volume responses indicating the role of vagus in producing these responses.

PP – 14

Effect of repeated exposures to experimental cold pain stimulus on pain unpleasantness in healthy young Indian men

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Background: Influence of repeated exposures to cold pain stimulus has remained largely unexplored. Aim was to test the effect of repeated exposures to cold pressor task on subjective pain perception and anticipatory anxiety.

Methods: Single-group experimental study. 37 healthy male volunteers (18-25 years) were exposed to cold pain for 7 consecutive days on non-dominant hand. On each day Anticipatory Anxiety (AA) was scored on Visual Analogue Scale (VAS) prior to task, pain unpleasantness was scored on VAS following the task and pain tolerance was recorded in seconds.

Results: Pain tolerance increased across 7 days ($p<0.001$). Although, the VAS score showed significant difference between days of intervention ($P < 0.001$), no consistent trend of increase or decrease was observed. Most subjects reported extreme pain initially followed by cycles of waxing and waning pain intensity. The median value for AA rating remained lowest across all days.

Conclusion: Subjective feeling of pain perception did not correlate with objective measures of pain sensitivity. Anticipatory anxiety was at its least due to prior familiarity with the task. Cold pain task is a potential experimental protocol for demonstration of objective and subjective measures of single cold-pain exposure to undergraduates as a part of Physiology practical syllabus.

PP – 15

An Association of respiratory symptoms on the pulmonary function parameters in the residence of mine tailing community: Cross sectional survey

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Background: Gold mine tailings contribute to particulate matter concentration in air for years which when inhaled increases respiratory morbidity. The aim of our study was to correlate the respiratory symptoms with lung function parameters in mine tailing community.

Methods And Materials: After the ethical clearance and consent from the volunteers of the exposed community living the mining area for more than 3years.The respiratory symptoms were assessed using ATS questionnaire and lung function was performed by spirometry.

Results: Predominant type of respiratory complaint was cough 38% and the least was smoking history 12.5% The frequency of restrictive, obstructive and normal pattern on spirometry was 63.2% ,1% and 35.8%.In bivariate logistic regression model after adjusting for covariates to test effects of respiratory symptoms on %predicted lung functions and obstructive restrictive was found that FEV1 was significantly reduced for duration of stay (OR-1.002,95% CI:0.985-4.018) & smoking (OR-1.932 ,95% CI:0.965-4.868).FVC was significantly reduced for phlegm(OR: 2.064 ,95% CI: 1.052-4.051) ,duration of stay (OR-1.014,95% CI:0.993-4.037) & smoking (OR:10.66,95% CI:1.436-79.134) FEV1 /FVC was significantly reduced for duration of stay (OR-0.977,95% CI:0.928-5.029) It also indicated that obstructive/restrictive lung disease was significantly reduced for the duration of stay (OR-0.877,95% CI:0.768-2.003).

Conclusion: Respiratory symptom questionnaire will be an effective tool with spirometry for screening respiratory illness in mine tailing community where the resources are poor.

PP – 16

Anti - inflammatory activity of alcoholic and aqueous extract of Andrographis Paniculata in carrageenan induced paw oedema in albino rats.

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Background: Andrographis paniculata (Ap) is one of the well-known medicinal plant in India used for inflammation due to its anti-inflammatory & antioxidant activity. The present study is to evaluate the anti- inflammatory activity of alcoholic and aqueous extract of Ap on carrageenan induced oedema of rat foot model.

Method : Acute anti-inflammatory activity was studied by calculating the volume changes in the hind paw after injecting carrageenan in Wistar rats treated with alcoholic and aqueous extract of leaves of Ap (200mg/kg and 400mg/kg body weight).

Results: There was significant reduction in the edema was found with the groups treated with Ap compared to control and significant results found in aqueous extract treated rats compared to alcoholic group.

Conclusion: Leaves of Ap has high concentration of flavonoids which could be the reason for anti-inflammatory activity.

Keywords: Andrographis paniculata, carrageenan,hind paw oedema model, anti-inflammatory, rats .

PP – 17

Does psychological health of future doctors affects academic performance? Unmasking the masked.

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Background: Psycholological health of a medical student remains affected throughout the course. Medical education is usually seems to be associated with substantial extent of psychological morbidity. Thus objective of the study was to collect data regarding depression anxiety and stress in first year undergraduate medical students and to correlate it with their academic performance.

Method: 42 item Depression Anxiety Stress Scale (DASS) questionnaire was administered to 1st year medical students. First terminal marks scored by students were recorded. Data was statistical analyzed.

Results: Study confirmed that amount of stress and depression was comparatively higher than anxiety. Incidence of stress was 53.007%, anxiety 36.05%, depression 44.03%. Negative corelation was found between stress anxiety and depression with academic performance.

Conclusion: There is considerable amount of depression & stress in 1st year medical students that had affected academic performance. To conclude there is need for early detection, counseling and rehabilitation to minimize the academic loss and improve the quality of health care.

PP – 18

Impact of handedness and anthropometric measures on hand grip strength in university students.

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Background: Psycholological health of a medical student remains affected throughout the course. Medical education is usually seems to bThe present study shows effect on hand grip strength due to handedness and anthropometric variables namely hand length, hand breath, forearm circumference, forearm length, wrist circumference, five fingers length.

Methods: Cross sectional study was conducted on 25 left and 35 right handers of age 18-25 years. Camry's hand dynamometer was used to assess hand grip strength, for assessing handedness questionnaire was used, anthropometry was done according to standard protocol.

Results: Statistically significant difference ($p<0.05$) was noted in wrist circumference, forearm circumference, thumb length and hand grip strength between right hand dominant and left hand dominant students. Highly significant positive correlations ($p < 0.001$) were observed between the right hand grip strength of right handers as well as in the left hand grip strength of left handers and namely hand length, hand breath, forearm circumference, forearm length, wrist circumference, five fingers length.

Conclusion: Hand grip strength as well as forearm circumference, wrist circumference, thumb length of dominant right hand versus dominant left hand had significant difference. As there is correlation between hand grip strength and these parameters than these parameters can be used as proxy in comparing right handers versus left handers in sports talent identification in which hand grip strength is needed.

PP – 19

Effect of yoga on stress levels among first year medical students: A non- randomized study

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Background: Stress is very common among medical professionals and it begins in the first year medical school. Stress decreases overall performance and leads to stress induced disorders. To combat these challenging issues, yoga has emerged as a life style method and cost effective therapy. There is a need to study the role of yoga in altering stress levels. In this study an attempt is made to study the effect of yoga on stress levels among first year medical students.

Methods: This was a Non - Randomized study. A total of 85 Medical students in age range of 18- 23 years participated. Yoga was conducted for a duration of one year. Yoga included Asana, Pranayama and meditation. The validated self-assessment questionnaire, Perceived Stress Scale-10 was administered to the subjects. It was found that regular practice of yoga reduced the stress levels in the moderate stress category. Statistical analysis by paired t- test was performed.

Results: Stress levels reduced from 69.4% to 64.9% in moderate stress category. The results were not conclusive in the other stress categories.

Conclusion: In this study, It was found that regular practice of yoga reduced the stress levels in the moderate stress category.

PP – 20

Evaluation of Anxiety ,Stress &Depression in first year medical students of Government Siddhartha Medical College – A Cross Sectional Study.

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Background: Mental Health is an integral part of health, it is more than mere absence of mental illnesss. Mental health disorders like Anxiety, Depression and Stress have an effect on academic performance of medical students .Students mental health crisis involves multiple factors like pressure to succeed in academics, financial crisis, increased social media usage, stigma around to seek help. This study is done to evaluate mental health crisis in first year medical students.

Methods: A Cross Sectional Study was done on 100 first year MBBS students. DASS Scale was used to assess Depression, Anxiety and Stress levels.

Results: Among 100 students ,78% showed anxiety, 40% depression, 42% stress,18% did not show any of three traits.

Conclusion: The present study concludes that first year medical students are more prone for Anxiety followed by Stress and Depression, and many students have minimum of 2 mental health disorders.

PP – 21

Comparison of corticomotor excitability of Chronic migraine and healthy population of North-India: an exploratory study.

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Background: Chronic migraine patients in India do not present with aura (CMw/A). Recently in western countries, Transcranial Magnetic Stimulation (TMS) have come in use for the termination of migraine attack in CM with aura (CMwA) patients. It becomes need of the hour to investigate for Corticomotor Excitability (CME) Parameters to evaluate whether the Indian CMw/A population are candidate for TMS or not.

Method: Resting motor threshold (RMT) and MEP recruitment curve (MRC) for abductor pollicis brevis were obtained for 20 CMw/A patients and 10 healthy volunteers using TMS.

Result: RMT in CMw/A patient were significantly lower than healthy population while MRC of CMw/A showed significantly lesser recruitment on all the different intensities in comparison to healthy population.

Conclusion: Presence of hyperexcitable cortex, similar to CMwA patient of western population, in these medically refractoriness CMw/A patient in comparison to healthy population suggest that they are likely to benefit from TMS for migraine attacks. Though a randomized trial covering larger CMw/A population can better confirm the same.

PP – 22

The cognitive ability of short-interval time estimation & reaction time and their association with sleep-wake variables in patients with chronic obstructive pulmonary disorder (COPD).

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Background: The cognitive status related to Short-interval time estimation (SITE) and its interrelation to sleep-wake variables in chronic obstructive pulmonary disease (COPD) has not yet been studied.

Methods: Therefore, through this ongoing study, we aim to investigate SITE and reaction time ability and their relationship with the sleep related variables using Munich Chronotype Questionnaire (MCTQ) in male patients with stable COPD (n=7) and normal healthy male subjects (n=13). The overall cognitive functions were also measured through subjective Montreal Cognitive Assessment (MoCA) questionnaire.

Results: Significant cognitive impairment was apparent in all COPD patients as indicated by lower MoCA average score of 20.29±3.50. The COPD patients exhibited significantly shorter estimates of 60 s interval, and showed more variability in reaction time compared to the normal counterparts. Positive association of sleep onset or waking times on free days with the 10 s or 60 s perceptions and of sleep quality with reaction time shows impact of sleep on cognitive functions in patients. A positive association between 60 s and MoCA score was also observed.

Conclusions: Short-time perception could be used as screening tool to evaluate cognitive impairment with respect to sustained attention, concentration, mood fluctuation in patient with COPD. However, the findings shall be confirmed in larger sample size from the ongoing study.

Keywords: Cognition, Short-interval time estimation, Chronic Obstructive Pulmonary disorder, Montreal Cognitive Assessment

PP – 23

A study on gender differences on selective attention among students of age group 18 to 20 years.

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Background: Attention is defined as the ability to focus the mind on stimuli and process specific information, while selective attention is the ability to select stimuli, out of many stimulus and to focus on only the one which we want and filtering out the other distractions, this also predicts the processing speed ability of brain. selective attention gets influenced by various factors like age, gender and IQ of subject.

Methods: 180 students (90 males and 90 females). The study was done using stroop colour word test card which has words written with different colours (red word written with green ink), subject is asked to say the colour, time taken and errors are noted and statistical analysis was done using unpaired t test.

Results: Females did less errors, was not statistically significant but results was statistically significant for the lesser time taken by females.

Conclusion: It was concluded that females have good selective attention compared to males.

PP – 24

Peripheral neuropathy in pre-diabetes: A case controlled study

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Background: Diabetic neuropathy is a debilitating microvascular complication in patients of Diabetes Mellitus type -2. In the recent literature, peripheral neuropathy has been documented in Pre-diabetes also, but with conflicting reports. Therefore, our objective was to find out occurrence of peripheral neuropathy in pre-diabetic patients by performing nerve conduction studies (NCS).

Methods: Based on oral glucose tolerance test (75 gm Glucose), 40 pre-diabetic cases (age 30-60 years) of either sex were included in the study along with age and sex matched normal subjects as controls. NCS of Peroneal motor nerve,

Sural sensory and Medial planter nerve were conducted in both the lower limbs.

Results: Pre-diabetic cases showed significant decrease in the conduction velocity (CV) of bilateral medial planer nerve compared to controls with right CV 29.75±22.35 vs 42.21± 17.10; p=0.01 and Left CV 36.18±21.93 vs 44.80±13.38; p=0.04. Also, CV was significantly reduced for right peroneal nerve in pre-diabetics (43.34±7.84) compared to controls (49.50±4.60); p=0.03. However, other nerves did not differ between groups.

Conclusions: We observed decreased CV in three of six nerves in pre-diabetic cases suggesting demyelinating type of polyneuropathy. Therefore it may be concluded that peripheral neuropathy is indicated in pre-diabetics. Also, medial planter mixed nerve conduction study may be a better tool for early detection of neuropathy.

PP – 25

Anti-nidatory action of Ala8,13,18-magainin II amide (AMA)on human placentalcytotrophoblast cells.

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Cationic anti-microbial peptides(CAMPs) targetcytotrophoblasts (CTBs) during syncytializationat the time of blastocyst implantation. CTBs from women (undergoing elective termination ofpregnancy in first trimester)and BeWo cellsgrown on collagen-I in DMEM:F12K completemedium and in RPMI 1640 complete medium respectively were exposed to AMA (modified CAMP) for24 hr.Expression microarray was donefollowed by differential expression (DE) and pathway analyses using GeneSpring and GeneGO MetaCore respectively. Changes in calciumlevels post AMA treatment were measured in Fluo-3 AM loaded BeWo cells by Live Cell imaging fluorescence microscopy.11significantDE transcriptsfound in CTBs and BeWo cells post AMA (1000 ng/mL) exposure for 24 hr, were validated by real time PCR. Protein level validation was done for 5 out of 11 significant transcripts. Toll like receptor 3 (TLR3) andTLR4-TICAM1- signaling pathways were enriched from DE.Time-lapse live cell calcium imaging revealed a significant rise in cytosoliccalcium levels in BeWo cells till 5 min post administration of AMA. Therefore, administration of AMA seems detrimental for placental cytotrophoblast developmentcompromising essentialinnate immune regulatory pathways which may lead to compromisedplacentation. Thus, usage of AMA as a therapeutic agent in pregnant women is an immunologically risk prone endeavor.

PP – 26

Comparison of EEG findings among Schizophrenia patients and healthy controls.

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Background: Schizophrenia is a major and very common mental disorder worldwide. EEG has been used as a research tool in many studies to differentiate between psychotic disorders. We performed this study to determine the differences in EEG findings between patients with schizophrenia and healthy subjects.

Materials and Methods: Our study included 69 patients with schizophrenia and 69 age matched healthy subjects. All clinical diagnoses were made according to DSM-IV diagnostic criteria. The standard 10–20 International system was used for the acquisition of the EEG data. Differences between means were analyzed by independent t tests and contingency tables by raw x2 (Chi-Square test.

Result: Of the entire sample of patients, 50.72% had abnormal EEG. Patients in the schizophrenic group were younger than those in the control group($t=4.248; p<.0001$). There were no significant differences in gender between the groups($x2=2.5193; p=0.112463$). Patients with schizophrenia when compared with healthy subjects showed increased delta, theta, and beta activity and decreased alpha activity.

Conclusion: EEG in schizophrenics showed an excessive fast activity along with some slow waves and decreased alpha-activity. But these changes were seen in only half of the patients. Therefore EEG may aid in diagnosis of schizophrenia but its routine use in such patients can not be recommended without further studies.

PP – 27

Recovery cardiovascular and SpO2 responses post exercise in young sedentary and physically active individuals.

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Background: Exercise physiology is the study of body's acute responses and chronic adaptations to physical activity. Research in this area may help trained individuals reach peak performance and untrained individuals attain good health. Recovery SBP is an important parameter for assessing Cardiovascular health. Early return to hemodynamic equilibrium among physically active individuals may be attributed to increased vagal tone.

Methods: 20 sedentary and 20 physically active (performing medium intensity cardio workout for 120-150 minutes/week), normotensive males with normal BMI within age group of 20-30 years. Individuals with any comorbidity, Smokers, alcoholics, drug abusers are excluded. Informed consent and detailed medical history is taken. BP, SpO2, HR are recorded at rest. Individuals are subjected to treadmill exercise, the speed is increased every minute until the participants reach 70% of their HRmax[208 – (0.7× AGE)] and are asked to continue for two minutes. BP, HR, SpO2 are recorded at peak,1,3,5 minutes post exercise, Percentage decrease in each parameter is compared.

Result and conclusion: Will be updated.

PP – 28

Relative Afferent Pupillary Defect in Glaucoma.

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Background: Glaucoma is one of the leading cause of blindness. It is an optic neuropathy characterized by the death of retinal ganglion cells resulting in irreversible damage. It is many a times severe in one eye. This asymmetry can cause RAPD.

Methods: A total of 60 subjects - above 40 yrs of age having Glaucoma (Open /Closed/Secondary) were included in the study. Exclusion criteria- acute ocular trauma ,congenital glaucoma. For detecting RAPD, Swinging flash light test was done. The subject was placed in a room having dim lights, then instructed to look at a distant object. Light was shown into one eye from each side using pen torch, watched for pupillary response. In RAPD, illumination of Normal eye causes constriction of both pupils ,whereas illumination of diseased eye causes reduced / no constriction of both pupils, re-illumination of normal eye results in constriction of both pupils.

Results: Chi – Square test applied. Mean age is 58.92 and standard deviation is 9.927. 45 subjects had RAPD [75%]. The test also revealed significant association between family history & RAPD ,p-value <0.03 (p value <0.05 considered as significant).

Conclusions: A clinical evaluation of the pupillary response reveals valuable information about the integrity of the structures in the eye. The study showed positive correlation with Genetic inheritance and RAPD. This test is useful as screening test for members of the families with genetic predisposition to glaucoma, because RAPD may precede apparent optic disc and visual field damage.

PP – 29

Chronotherapeutic Responsive Drug Delivery Systems

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Chronotherapeutics refers to the management of diseases in which plasma drug concentration is mapped with the rhythms of diseases for better clinical outcomes and to minimize the drug adverse effects. Time of drug administration is the key point as it has noteworthy impact on successful clinical outcomes. When the disease symptoms show circadian variation, the clinical outcome is suffered even though drug plasma concentration is constant. In such cases, the drug release should be tailored to vary with time/ disease symptoms; therefore, variations both in a disease state and in plasma drug concentration need to be considered in formulating the drug delivery devices. A range of drug delivery systems including pulsed, triggered and programmed devices have been designed in recent past for Chronotherapeutic drug delivery.

In recent years, the drug delivery approach has been changed from the concept of conventional to smart drug delivery, in which polymers play a crucial role. Progress in the polymer field has given many novel biomaterials for modified release of medications. One such instance is responsive polymer, which has a distinctive character of responsiveness to stimulus like temperature, electricity, pH, ionic strength, enzymes, glucose etc. The stimulus can be applied through "external" sources or originated through "internal" atmosphere due to pathophysiological conditions within the body. The Chronotherapeutic responsive drug delivery devices that can respond to internal or external stimulus are need of the day for management of diseases.

PP – 30

Algogen-induced vasosensory reflexes modulate short-term heart rate variability parameters in experimental rat models.

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Background: The present work was designed to study the modulatory effects of algogen-induced vasosensory reflex responses on short-term HRV parameters in naïve and vagotomized rat models.

Methods: In this study, vasosensory reflex responses were elicited by instilling algogens (bradykinin/ histamine) into a local segment of medium-sized peripheral blood vessel (femoral artery) while a continuous ECG was recorded. Short-term (5 min) ECG segments obtained from original recordings were examined in detail and relevant data of HRV parameters were pooled. Time domain and frequency domain analyses were performed using dedicated software and results were analyzed.

Results: Bradykinin-induced vasosensory reflexes caused significant alterations in both time domain and frequency domain HRV parameters as compared to time-matched saline control group. Instillation of bradykinin caused transient increase in NNi, RMSSD, TSP, HFP along with decrease in SDNN, SDNN/RMSSD, LFP, LFP/HFP. Histamine produced similar pattern of responses, but HRV alterations were less pronounced compared to those with bradykinin. Thus, algogen-induced vasosensory reflex responses caused an increase in the parasympathetic influence on heart accompanied by a decrease in sympathetic influence. HRV modulation by algogen-induced vasosensory reflexes were significantly attenuated in vagotomized rats, illustrating the principal role of vagus in the reflex HRV modulation.

Conclusions: The present study proposes a novel hypothesis regarding the cardio-protective role of inflammatory mediators during acute stress, by potentiating the vagal impact and attenuating the sympathetic impact on heart.

PP – 31

Motor Fitness and haemoglobin concentration of Male Judo and Karate Athletes of Kolkata, India.

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Background: Motor fitness and haemoglobin concentration (Hb) of Karate and Judo athletes have been reported from different countries while pertinent data are unavailable in Indian context. This study was therefore aimed to evaluate the haemoglobin concentration and motor fitness of Judo and Karate athletes of Kolkata, India.

Methods: State level male Judo (n = 40, age: 22.61 ± 0.91 yrs) and Karate athletes (n = 40, age: 22.36 ± 0.97 yrs) were recruited in the study from different sports academies of Kolkata, India. Sedentary (n = 40) control subjects (age: 22.73 ± 0.97 yrs) were sampled from same area. All parameters were measured by standard methods.

Results: Judo and Karate athletes had significantly ($p<0.001$) greater values of motor fitness parameters and haemoglobin than the sedentary control group. The study depicted that Judo and Karate training improve motor fitness and haemoglobin.

Conclusions: It is hypothesized that training duration has close relationship with the betterment in these parameters. The present data would serve as the national standard in Eastern Indian male Judo and Karate athletes and this will also help the coaches and athletic trainers to implement more specific training for betterment of performance in these athletic populations.

PP – 32

Study of Cardiovascular Autonomic Functions and Anxiety Score in Adults With recently diagnosed type 2 Diabetes Mellitus.

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CO-Guide: Prof (Dr.) Sheikh Imran Syeed (Professor and Head Department of Physiology)

Background: The most common and studied manifestation of diabetic autonomic neuropathy(DAN) is cardiovascular autonomic neuropathy(CAN) owing to its life threatening complications(arrhythmias, silent myocardial ischemia and sudden death) and its relation with other microangiopathic comorbidities. More advanced stages of CAN carry an increasingly worse prognosis. Thus, screening tests are essential to detect the condition at an earlier stage, as is also the case regarding the other diabetic complications.

Aims & Objectives: To compare the results of various cardiovascular autonomic function tests of recently diagnosed type 2 Diabetes Mellitus (T2DM) adults and controls. To compare the level of anxiety in recently diagnosed T2DM and control. Study of correlation of cardiovascular autonomic parameters, anxiety and biochemical parameters (HbA1c) in adults with recently diagnosed T2DM.

Methodology: A total of 111 subjects were recruited for this study. Out of these 54 were normal healthy subjects (controls) and 57 were diagnosed patients of type 2 DM (cases). All subjects underwent heart rate variability recording {using POWER LAB 26T (AD Instruments, Sydney, Australia) } and Autonomic Function Tests(AFT) consisting of both parasympathetic reactivity test i.e valsalva maneuver, deep breathing test(E:I ratio) ,heart rate changes from supine to standing (30:15 ratio) and sympathetic reactivity tests i.e lying to standing test and cold pressor test.It was followed by measuring anxiety levels using Hamiltons scale of anxiety (HAMA) containing set of 14 questions. Heart rate variability (HRV) indices were correlated with anxiety levels for possible results.

Results: PARASYMPATHETIC REACTIVITY TESTS: 30:15 RATIO in T2DM was found to be significantly lower as compared to controls. The E: I RATIO in T2DM was lower as compared to controls but the difference was not statistically significant. The VALSALVA RATIO was significantly lower in T2DM as compared to controls .SYMPATHETIC REACTIVITY TESTS: COLD PRESSOR TEST the resting SBP in type 2 diabetic was significantly higher as compared to controls before cold pressor test (CPT). The difference in change in systolic blood Pressure (i.e. SBP) during cold pressor test as compared to controls was seen to be statistically significant. DBP was significantly lower in T2DM as compared to controls. LYING TO STANDING TEST (LST): The basal SBP before LST was significantly higher in T2DM group. During LST; the SBP immediately upon standing in T2DM group was significantly higher than the controls, at 1 min, 2 min and 3 mins the value of SBP remained significantly higher than the controls. The resting DBP and DBP immediately on standing was higher but not statistically significant. The change in diastolic BP (i.e. DBP) immediately on standing of cases as compared to that of controls was seen to be statistically significant while as there was no statistically significant difference seen in the DBP at the 1min, 2 minutes and 3 minutes after standing, between cases and controls. HEART RATE VARIABILITY RECORDING: mean heart rate and total power (TP) was significantly higher in T2DM as compared to controls while as parameters like SDNN,RMSSD,LF(nu),HF(nu) was significantly lower. LF/ HF ratio was higher in T2DM but difference between 2 groups was not statistically significant. ANXIETY LEVEL in T2DM was significantly higher than controls. We observed a positive correlation of anxiety with LF/HF ratio, TP and Valsalva maneuver. We did not observe any correlation of any of parameter of AFT and HRV with HbA1C.

Conclusion: Our study suggests that there is both sympathetic dysfunction and parasympathetic dysfunction, but from increased value of LF/HF ratios it is inferred that there is more parasympathetic damage than sympathetic damage. We also found that with the increase in the severity of anxiety in T2DM patients, parasympathetic activity is severely reduced which leads to reduced HRV.

PP – 33

Effect of Slow Deep-Breathing Exercise on Systolic Blood Pressure in Normotensive adults.

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Background: Deep-Breathing is scientifically proven to influence the blood pressure by activating para sympathetic nervous system which decreases heart rate and dilates blood vessels reducing overall blood-pressure. This study assesses whether a single session of slow Deep-Breathing exercise can influence the blood-pressure.

Methods: This is a cross-sectional study done on 30 normotensive individuals in the age group 45-60 years at Balaji Enclave, Hyderabad. Pretest blood-pressure is recorded. Bellow breathing (slow deep inspiration followed by forced expiration) is done thrice with 30 seconds interval. Post exercise BP is recorded immediately. The values obtained are statistically analyzed using Paired T-Test. Results: Bellow-breathing (P value of SBP = 0.0056) was statistically significant.

Conclusion: Deep-Breathing rectifies autonomic imbalance which results from stress induced sympathetic activity and stabilizes the autonomic equilibrium by stimulating parasympathetic activity. Bellow breathing showed significant lowering of blood pressure.

PP – 34

A Comparative Study of Hand grip strength in anemic and non-anemic females in a tertiary care hospital in Hyderabad. (E)

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Background: Anemia, which is major health problem in women in India, is associated with decreased oxygenation of tissues, and hence, is expected to influence muscle strength.
Hand grip strength is a simple, non-invasive, valid representation of the overall muscle strength and has high to excellent inter-tester and test-retest reliability. Low handgrip strength is indicative for decline of upper extremity strength and lower extremity function.

Methods: A cross sectional observation of hand grip strength was performed in 50 females aged 18-45 yrs – 25 non-anemic, and 25 anemic as per WHO criteria (Hb-12g/dl). Handgrip strength was presented as maximum value of three trials and mean value of three trials were tabulated in excel sheets, and analysed using SPSS v23. Results: Peak and mean handgrip strength in anemic and non-anemic females were 11kgs, 9.66+-2.3, and 15kgs, 13.77+-2.77kgs respectively. Our study showed a statistically significant decrease in hand grip strength in females with anemia ($p < 0.05$).

Conclusion: Anemia impairs tissue oxygenation and reduces overall physical strength, which is represented in our study by a reduction in peak and mean hand grip strength in the anemic group. Anemia results in decline in physical activity, disability and decline in the quality of life.

PP – 35

Association between Smoking and Glycated Haemoglobin in Newly Diagnosed Type II Diabetes Mellitus Male Patients Visiting OPD: A Hospital Based Study

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Background: By 2030 more than 500 million Indians will be Diabetic. As per estimate 30% of population consumes tobacco and smoking is emerging as public health concern. There appears link between smoking, leucocyte count and glucose homeostasis. Smokers suffer from poor glycaemic control and are at higher risk of developing diabetes and related complications. Thus, association between HBA1C and smoking was studied.

Materials and methods: Study included 150 newly diagnosed male diabetics grouped into smoker and non-smoker categories. Current were further categorized as per smoking intensity. TLC and HBA1C were evaluated and data was analysed using appropriate statistical tests by R software .p value <0.05 was taken as significant.

Results: HBA1C increased significantly ($P<0.0101$) with increase in intensity of smoking, but difference was insignificant between non-smokers and mild ($p=0.125$) to moderate ($p=0.07$) intensity smokers. TLC increased significantly with increase in intensity of smoking as compared to non-smokers ($p<0.001$). Difference in TLC were insignificant between mild smokers and non-smokers ($p=0.114$). HBA1C and TLC were significantly ($P<0.001$) raised in current smokers as compared to ex-smokers and non-smokers but the difference between HBA1C in non-smokers and ex-smokers was insignificant ($p=0.534$). TLC was raised insignificantly in ex-smokers as compared to non-smokers ($p=0.129$). Regression analysis showed that as compared to non- smokers HBA1C was significantly higher in ex-smokers ($\beta= 0.0438$, $p=0.021$) and current smokers ($\beta=0.682$, $p=0.001$). With increase in severity of smoking HBA1C was higher as compared to non-smokers but association was insignificant. Non-significant positive association was found between TLC and HBA1C in current ($r=0.049$, $p=0.781$) and ex-smokers ($r=0.036$, $p=0.824$) and non-significant ($p=0.745$) negative association ($r= -0.070$) was found between two in non-smokers.

Conclusions: In smokers HBA1C and TLC are higher and are further raised with increase in intensity of smoking.

Key words: Nicotine, non-enzymatic glycation, gender, blood cells, diabetes

PP – 36

Prevalence of Internet Addiction in Indian population

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Background: Last two decades has seen an exponential growth in internet usage. This has led to emergence of Internet addiction (IA) as public health concern globally. IA is defined as "a psychological dependence on the internet, regardless of type of activities pursued after logging in". This study was conducted to assess the prevalence of IA amongst Indian population.

Materials : 111 healthy individuals (73 males; 38 females) participated in this cross-sectional, questionnaire-based study. Socio-demographic profile and internet usage data was collected by using a structured form. IA was assessed using Young's 20-item internet addiction test (IAT). Based on their total scores, they were categorized into normal (<30), mild (31-49), moderate (50-79) or severe addiction (>80).

Results: Mean age of participants was 26±8 years. 34(30.6%) participants spent 1-3hours, 45(40.5%) spent 3-6hours while, 32(28.8%) spent >6hours on internet. Almost all, 107(96.4%) used internet for information, followed by messaging/chatting, 95(85.6%), recreation, 75(67.6%) and gaming, 32(28.8%) while a small percentage of people used internet for other activities like work, studies, watching movies, gambling etc. 62 (55.86%) participants were found to have IA based on Young's IAT. Out of these, only 1 participant had severe IA. Rest of them had either mild (34) or moderate (27) IA.

Conclusion: Results of the present study indicate a high prevalence of internet addiction among Indian population.

PP – 37

Blood pressure response to sustained handgrip test – A single test for diagnosing autonomic neuropathy in patients of chronic kidney disease on haemodialysis.

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Background: Cardiovascular autonomic dysfunction is a major complication of Chronic Kidney Disease(CKD) likely contributing to the high incidence of cardiovascular mortality in this patient population. The purpose of this study was to determine the frequency of autonomic neuropathy in patients with Chronic Kidney Disease on haemodialysis(HD) by using cardiovascular reflex tests and compare the sensitivity of each test.

Objectives: To assess the cardiovascular autonomic functions in patients of CKD on HD. Methods: Following five tests were performed on 40 patients of CKD on HD. Parasympathetic function tests: Heart-rate response to Valsalva manoeuvre, Heart-rate variation during deep breathing, Immediate heart-rate response to standing. Sympathetic function tests: Blood-pressure response to standing, Blood-pressure response to sustained handgrip.

Results: Thirty two of forty subjects (80%) had one or more abnormal tests.Among five tests the two most abnormal tests were heart-rate variation during deep breathing(n=28 , 70%) and and the blood pressure response to sustained hand grip(n=24,60%).

Conclusion: In this study 20 out of 24 subjects who had abnormal blood pressure response to sustained hand grip also had one or more abnormal parasympathetic test. So the blood pressure response to sustained hand grip test can alone be used to diagnose the autonomic neuropathy in patients of CKD on HD.

PP – 38

Students' perception on guided reflective narratives on ethics case vignettes integrated into Physiology curriculum

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Background: Reflective narrative writing has the potential to encourage critical thinking, but the method remains unexplored among Indian medical students.

Objectives: To capture the perceptions of students on guided reflective narratives on ethical issues related to medical practice and research.

Methods: First year medical students (n=150) wrote guided reflective narratives exploring ethical issues related to patient management and research, as part of their Physiology curriculum. A feedback questionnaire on the programme was administered at the end of the year and students' responses were analysed.

Results: A majority of students (F91, M38) found the reflective narratives useful, allowing them to analyse their thoughts, broaden their perspective and dwell on ethical concerns of doctors, researchers, patients, research subjects and caretakers. Many students (F84, M34) wished for reflective writing sessions in future as an opportunity for critical thinking and gaining insight on ethical problems they might face in their careers. Limitations (F70, M29) – abstractness and unnecessary elaboration of concepts, inability to express. Some preferred interactions to writing.

Conclusion: Writing their reflections allowed students to ponder over their understanding of ethical issues and broaden their perspectives, which they believed would prove useful for their future. Some students felt that reflective writing did not hold any advantage over discussions and interactions.

PP – 39

Effects of Yoga on depression of men

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Background: Depression is a mental state characterized by feeling of sadness, loneliness, low self-esteem which can persist over a period of days. The outer and inner world stressful environment contribute to depressive symptoms.

Yoga helps to improve inner, psychological well-being. Yoga appears to modulate stress response systems, in turn decreasing physiological arousals; like lowering blood pressure, easing respiration, reducing heart rate.

Methods: In this study 40 males were selected to participate voluntarily in a questionery based data. DASS42 (Depression, anxiety, stress scale 42) has used for screening depression. Data was collected before starting of yoga training and after two months of training.

Results: Subjects who participated in yoga training found to have decreased depressive symptoms. The difference between pre and post yoga DASS42 scares was found to be significant. Males before yoga training pre-test: 7.57 to 1.70. Males after yoga training post-test: 6.36 to 2.80.

Conclusion: Yoga can be considered as treatment option for persons with depressive symptoms. This positive feature of yoga training can be very supportive for maintaining well- being in today's overburdened world.

PP – 40

Evaluation of risk of developing Type 2 Diabetes Mellitus in 1st year students of Government Siddhartha Medical College – A Cross Sectional Study.

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Background: Type 2 Diabetes Mellitus is now emerging as a new clinical problem in Adolescents. Life style changes, overweight, family history of Diabetes have major influence in early onset of Diabetes. The present study evaluates risk of developing Diabetes Mellitus in near future and helps to cease or delay onset of Diabetes.

Methods: A Cross Sectional Study was done on 120 1styear students (MBBS and BDS) are included. Indian Diabetes Risk Score (IDRS) was used to evaluate the risk of diabetes in this study. Age, family history of diabetes, type of physical activity were noted and waist circumference was measured to calculate the risk of developing diabetes.

Results: Among 120 students 1.67% had high risk, 80.83% moderate risk and 17.5% has low risk of developing diabetes.

Conclusions: Risk of developing diabetes in future is greater than 80% in students with the risk factors.

PP – 41

Investigation of autonomic function test in healthy type 'A' and type 'B' personalities in adults age group

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Background: Autonomic function test is a non-invasive marker, sensitive and reliable tool to assess cardiac function in personalities type 'A' and type 'B'. Literature reveals the presence of cardiac autonomic dysfunction in type 'A' personality are linked to cardiovascular diseases in middle age and elderly adult whereas people with type 'B' personality can cope with potentially stressful situations better.

Methods: 2 groups of personalities [type 'A'(n=30) and type 'B'(n=30)] subjects based on Hunter-Wolf personality questionnaire scale received from VMMC and Safdarjung hospital, New Delhi. All the tests for autonomic function were performed. For cardiac autonomic tone - Heart rate variability was measured for 5 minutes ECG recording in BIOPAC150 and using Ewing's scoring criteria for CAN grading. Statistical analyses was performed using SPSS version 21 (SPSS, Inc., Chicago, IL). Unpaired t-test and Mann-Whitney test was used for parameters with normal and non-normal distribution respectively.

Result: HEART RATE VARIABILITY – SDNN, RMSSD, pNN50, Total Power, LF, HF, LF/HF did not show any significant difference in the both groups. PARASYMPATHETIC AND SYMPATHETIC REACTIVITY TESTS - ΔDBP in HGT showed early autotonomic dysfunction according to Ewing's criteria in both personalities of type 'A' and type 'B'.

Conclusion : Out of the parameters of HRV and AFT, ΔDBP in HGT showed reduced changes in both groups. Therefore there was no difference of autonomic function in type 'A' and type 'B' personalities. Further studies with increased sample size are required to comment more on this fact.

PP – 42

ECG changes to Acute Mental Stress in Obese Adults

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Background: Many studies have suggested possible influence of obesity on various cardiovascular diseases. Mental stress in modern days has become an evitable part of life. Hence, we tried to explore the acute mental stress effects on ECG in obese individual.

Method : 48 male volunteers of age group between18-28 years were divided into control group BMI <25Kg/m2and study group BMI > 30 Kg/m2. A baseline 5 minutes ECG recording and another ECG recording of the same duration were taken during acute mental stress in both the groups. Statistical analysis like paired and independent sample 't' test was done.

Results : There was significant increase in mean heart rate (0.000) at rest in obese compared to non-obese. During acute mental stress,ECG parameters showed a significant increase in QT interval(p=0.01)and in QTc(p= 0.028) ,decrease in T wave amplitude(p= 0.000) and mean heart rate increase(p=0.000) in the obese individuals. Whereas in the non-obese individuals acute mental stress caused significant increase in mean heart rate(p=0.000), decrease in QRS complex (p=0.043)and QT interval(0.05).

Conclusion: Mental stress in obese adults showed subtle changes ECG parameters suggesting abnormalities in ventricular repolarization that may pose them to cardiovascular disease risk as a consequence of mental stress.

PP – 43

Effectiveness of Early Clinical Exposure as an Additional Teaching Learning Method in Enhancing the Understanding of Anemia in Physiology.

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Background: Indian medical curriculum has undergone major reforms over the past few years. However, most often, there exists an imperceptible demarcation between the pre-clinical and clinical subjects. Lack of clinical exposure as early in the Ist year of medical curriculum (Early Clinical Exposure) often results in underestimation of the clinical relevance of basic sciences. Objectives: To introduce and assess the effectiveness of Early Clinical Exposure (ECE) as an additional teaching learning method for a selected topic in Physiology.

Method : Traditional didactic lecture on anemia followed by Early Clinical Exposure on the same topic was implemented for Ist year medical students. Pre-test (before clinical visit) and post-test (after clinical visit) were conducted to assess the effectiveness of ECE. Reactions and responses of students towards ECE were obtained via Focus group discussion (FGD) and feedback questionnaire.

Results: Paired t-test revealed a significant (p <0.001) increase in post-test scores. Analysis of student's feedback and FGD revealed that ECE increased their interest in subject, and improved their level of understanding, retention and recall of concepts. ECE enabled them to realize the clinical relevance of Physiology and sensitized them to patients' problems and need. Majority of students (99.2%) rated the ECE as good to excellent and expressed their view for ECE to be continued for other topics as well.

Conclusion: Early Clinical Exposure is an effective supplementary teaching learning method to make students' learning more factual and interesting. It would also sensitize the students about ethical, social, interpersonal and communication skills, professional attitudes and empathy.

PP – 44

Recent advancements in therapies to prevent Alzheimer's disease

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Background: Alzheimer's disease (AD) is a major healthcare issue faced by millions worldwide. The symptoms of AD worsen over time leading to dependence on others for performing the basic activities. Treatment methods devised till date only help in reducing the cognitive decline but fail to cure the disease due to its complex mechanism. This paper provides recent evidence based therapeutic approaches to prevent AD.

Method: PubMed database was utilized for search of articles.

Results: The current review paper presents an outline and amalgamations of different and new therapeutic approaches being devised to fight against it. The available medications are acetyl cholinesterase inhibitors and NMDA antagonists; the non-pharmacological treatment methods like immunization therapy, drug therapy, stem cell therapy, cognitive and physical training; and the alternative treatments currently available or under different phases of the clinical trials are discussed. The side effects of therapies and conflicting data limits these therapeutic approaches. Moreover, this article has also attempted to summarize the alternative approaches of the treatment like the use of coconut oil, omega-3-fatty acids, curcumin, coenzyme Q10, aromatherapy and acupuncture.

Conclusion: Evidence-based pharmacological treatments may be coupled with non-pharmacological interventions to achieve the desired results.

PP – 45

Carotid artery mechanics during non-hypotensive hypovolemia

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Background: Temporal profile of carotid artery mechanics was investigated using blood donation as a model of acute blood loss.

Method: The study was conducted on 85 healthy male blood donors (age 35 ± 7 years; weight 75 ± 9 Kg). B mode ultrasound images of right common carotid artery (n=48) was recorded with a linear array probe using vascular Ultrasound (M7, MindRay) .The analysis was done using carotid analyzer software (MIA). To assess changes in temporal profile of blood pressure continuous waveform was recorded (Finapres).

Results: No significant change in blood pressure was observed during and after blood donation. A significant decrease in carotid artery distensibility was observed during 5th minute of blood donation as compared to baseline and it remained low even in post donation period ($p = <0.0001$). Also, significant increase in incremental elastic modulus was observed at 5th minute of during blood donation and remained increased in the post donation period when compared to baseline.

Conclusion: The data suggests that mechanical property of carotid artery undergo rapid mechanical alteration during non-hypotensive hypovolemia. The sympathetic activation with no change in blood pressure indicates the role of cardiopulmonary receptors initiating the response.

PP – 46

Archaeosomes: Nano drug delivery system to enhance drug bioavailability into plasma

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Background: Archaeosomes as liposomes made with one or more ether lipids that are unique to the domain of Archaeobacteria, found in Archaea constitute a novel family of liposome. Achaean-type lipids consist of archaeol (diether) and/or caldarchaeol (tetraether) core structures.

Method: Archaeosomes can be produced using standard procedures (hydrated film submitted to sonication, extrusion) at any temperature in the physiological range or lower.

Results: Benefit of using of natural lipid as liposome is as delivery of proteins and peptides, gene delivery, antigen delivery and delivery of natural antioxidant compounds. Most advantage of using Archaeosome is stable more than other phospholipids. High-density lipoproteins (HDL) in blood, plasma and serum can remove the phospholipids from the outer leaflet of the ester lipid–liposome bilayer, resulting in vesicle destabilization and significant serum induced leakage of encapsulated compounds.

Conclusion: It releases encapsulated drug into the surrounding environment in a sustainable manner so it enhances drug bioavailability into the system and can reduce the number regimens taking up by patient thrice in a day or twice in a day by using drug encapsulated archaeosomes. Another one is that phagocytic cells uptake is greater which ensures good adjuvant activity. It's promotes cross talk between innate and acquired immune systems and Induction of cytotoxic T-cell (cell mediated) response.

PP – 47

Title: To study the Relationship between Fatty acid binding protein-3 and high sensitive -CRP in acute myocardial infarction (AMI).

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Background: Acute myocardial infarction (AMI) is a primary life-threatening cardiac disease, early and correct diagnosis is of great importance to enable immediate and intensified treatment which consequently reduces mortality. fatty acid-binding protein-3 (FABP-3) is a small cytoplasmic protein which is abundantly expressed in human heart. It was first shown to be released from injured myocardium.

Method: A total 100 patients suspected of AMI and 100 healthy control were recruited in this study. Biomarkers including FABP-3 (by ELISA), troponin I (cTnI) (by immunofluorescence) and hs-CRP (by immunoturbidetric) were estimated in both the group simultaneously at the time of admission. Chi square test done comparison. Pearson correlation was done to see the relationship between H-FABP and hs-CRP.

Results: The mean levels of H-FABP (2527.97 ± 946.80 pg/ml), cTnI (11.94 ± 8.99 ng/ml) and hs-CRP (18.61 ± 7.78 ng/l) were patients presenting within 12 hours of onset of chest pain and observed statistically significant ($P<001$). There was a strong positive correlation ($r=0.62$) between FABP-3a and hs-CRP ($P<001$).

Conclusion: A strong positive relation between FABP-3 and hs-CRP is an evidence to be used for diagnosis. FABP-3 can also be used with the cTnI to enhance performance to diagnose AMI at early phases.

PP – 48

"Efficacy of wearable Technologies to monitor Physiological responses in children with Autism Spectrum Disorder: A Review Study."

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Background: Autism Spectrum Disorder (ASD) are a heterogeneous group of neurodevelopmental disorders featuring early impairments in social- emotional reciprocity and non-verbal communication with autonomic nervous system imbalance. Wearable technologies have the potential to increase the quality of life of children with ASD by decreasing the sensory load and providing realtime feedback. This paper aims to review existing wearable physiological monitoring devices and their efficacy for children with ASD.

Method: Relevant studies were identified by searching the internet and databases of scientific literature (e.g., Google Scholar, PubMed) from 2015-2021 are selected and compiled.

Results: Wearable sensing devices present a potential solution that can support and complement existing interventions. Number of devices offer reliable physiological monitoring and suitable for children with ASD.

Conclusion: Wearable physiological monitoring devices are becoming popular and are able to perform multiple functions. In addition to the usefulness of those devices for the general population, they have the potential to help people with ASD, their parents, and caregivers.

PP – 49

Effect of different concentration of boron as immunomodulator in visceral lishemaniasis

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Background: Antibiotic resistance is a serious and growing phenomenon in contemporary medicine and has emerged as one of the pre-eminent public health concerns in 21st century. According to WHO, the antibiotics will not be effective beyond 2020 due to rapid emergence of drug resistant strain. This makes things worse for the animals and human beings. In that instance immune modulation with an aim to increase the immune-potential of the body remain the sole alternative to control the infections. During the course of time so many herbal and chemical formulation have shown their potential to improve the immunity of host cell. Borax has been shown as one of the potential immune modulators in few researches. Objective- Effect of borax on parasite load in leishmaniasis.

Method: In experimental group, first THP-1 cells were exposed with different concentration of borax (immune-modulator) after that the cells were infected with parasite where as in control group the cells were infected without borax exposure. The parasite load was compared in both group after 0, 24, 48 and 72 hour.

Results: The result of the study showed that parasite load was significantly decreased with in experimental group at concentration of 0.5mM.

Conclusion: The exposure of immune modulator before the infection and during different duration of incubation, decreases the parasite load as compared to control.

PP – 50

Occupational Stress among Female House Maids of Kolkata, India

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Background: Majority of low income workers of developing countries are working in unorganised sectors and exposed to various stressful job environments called occupational stress that is evaluated in terms of occupational stress index (OSI). House maids perform varieties of household work and they globally constitute a significant percentage of unorganised sector workers.

Methods: 94 female house maids of Kolkata (India) belonging to the age range of 20–60 years were recruited in this cross–sectional study to investigate the prevalence of OSI among them.

Results: OSI parameters depicted existence of excessive stress in this population and the OSI scores varied in different age groups. Correlation statistics revealed significant relationship of some of these OSI parameters with some of the other parameters. Such high level of occupational stress may result in serious detrimental health hazards in this population. Urgent social attention is needed to attenuate this potentially high risk of physical and mental strain to sustain health.

Conclusion: It is high time to develop effective stress management strategies not only to reduce their mental and physical stress but also to enable them to maintain healthy wellbeing.

PP – 51

Gut Microbiota Dysbiosis: Unrealized intervention strategies for the treatment of neurological disorders

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Background: Gut microbiota are constant residents in humans. Recent evidence has revealed that functions of the central nervous system can be modulated by the gut microbiota through the gut-brain axis that imparts a new perception between the brain and gut. The occurrence of neurological diseases such as Alzheimer's disease (AD), multiple sclerosis (MS) and Parkinson's disease is expanding throughout the globe. Pathogenesis of such neurodegenerative disorders remain ambiguous and treatment remains challenging. It is lucid that microbiota dysbiosis alter behavioural and neurological outcomes.

Methods: A substantial number of correlated research and review papers were perused to ascertain the results.

Furthermore, the availability of information such as gut microbiota dysbiosis, cross talk between the gut and the brain and intervention strategies was established via analysis of pertinent websites.

Results: Autonomous and distinct upcoming evidence suggests that there is an existence of bidirectional interaction between the brain and the gut microbiota. This crosstalk might play a crucial role in slowing down and cessation of various neurological disorders.

Conclusion: The microbiota-gut- brain axis is in the initial stages of research, understanding the molecular mechanism which causes the gut microbiota to control neurological functions not only holds the potential to reveal new pathogeneses of neurological disorders, but also to instigate potential intervention strategies that aims microbiota dysbiosis for neurological disorders.

PP – 52

Title: Impact of SARS CoV 2 induced inflammation on cardiovascular system

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The SARS-CoV-2, a betacoronavirus of zoonotic origin belonging to Coronaviridae, responsible for the ongoing pandemic, is an RNA virus with a single–stranded positive–sense genome. It is the third known highly pathogenic human corona virus, after SARS-CoV and MERS-CoV, and differs from them in its fatality and transmission rate with a similarity that all of them belong to zoonotic viruses. Although, the COVID-19 is primarily a respiratory disease with most of the patients manifesting fever, respiratory tract and pulmonary complication, however, in most of the cases, due to cytokine storm instigated by SARS CoV-2 infection, leads to extra–respiratory manifestations. The common extra-respiratory manifestations are cardiac, gastrointestinal, neurological, renal and hematological symptoms. This indicates that COVID-19 inflicts and damages multiple organs of infected individuals However; the severity varies person to person depending on their immunological responses and physiological disturbances. A large number of COVID-19 patients have shown symptoms of cardiovascular diseases (CVDs) including chest pain, hypertension, acute cardiac injury, arrhythmias and myocarditis suggesting the vulnerability of the cardiovascular system (CVS) to SARS-CoV-2. It is primarily due the expression of ACE-2 receptor in cardiac cells/tissues. ACE-2 plays a vital role in normal functioning of cardiovascular and immune system. Cytokine storm and hypoxic state from ARDS may be a possible mechanism of cardiac damage, which eventually leads to cardiac failure in COVID patients. Moreover, the COVID-19 patients with cardiovascular comorbidities show severity of respiratory symptoms and may be associated with poor prognosis. Therefore, possible long-term effects of COVID-19 on cytokine storm leading to cardiovascular system should be delineated and considered for further thorough investigation.

PP – 53

Quality of sleep in breast cancer patients undergoing chemotherapy.

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Background: Breast cancer patients undergoing chemotherapy have higher chances of disturbed sleep. The presence of grievous disease and related therapeutic intervention contributes to sleep alteration.

Methods: After obtaining ethical clearance and informed consent, 33 breast cancer patients (18-55 years), completed the study. Their quality of sleep was assessed with PSQI.

Results: The subjects had an average global PSQI score greater than 5 (5.64 ± 3.42), indicating poor sleep. Amongst the seven components of PSQI, sleep latency (1.58 ± 1.3) was most affected. The other components of PSQI such as sleep quality (1.06 ± 0.55), sleep duration (0.82 ± 1.01), sleep disturbances (1.24 ± 0.75), daytime dysfunction (0.73 ± 1.28) and habitual sleep efficiency (0.3 ± 0.68) were also adversely affected.

Conclusion: The study concludes that the sleep quality is poor in breast cancer patients. Most of these patients overlook sleep symptoms and seldom take medication for that. Since these patients are overburdened with the pharmacological agents, non-pharmacological interventions such as music, counselling related to sleep hygiene, muscular relaxation, cognitive behavioural therapy, meditation, etc., can help in improving their sleep and quality of life.

PP – 54

To study sympathetic autonomic variability in Medical students of Era's Lucknow Medical College and its correlation with ABO Blood Group System.

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Era's Lucknow Medical College

Introduction: From previous studies, it is confirmed that a person's blood group can determine his or her risk of heart disease. Cardiovascular diseases are the major cause of sudden death. Several studies shown that person with blood group O are benefited against cardiovascular disease whereas blood group A and B are more at risk and blood group AB are the most vulnerable for cardiovascular diseases. If Sympathetic autonomic nervous system is derranged, shows derranged reactive response to cold stress indicates that the persons are at high risk of suffering from hypertension in future at early stage. There is a lack of data on the variability of autonomic activity in different blood groups. Aim of the present study is to study sympathetic autonomic variability in Medical students of Era's Lucknow Medical College and its correlation with ABO Blood Group System.

Objective: To study autonomic (sympathetic) variability in different ABO Blood Groups in young adults.

Material and Methods: This is an observational study. In this study apparently 50 normal healthy young adults, age: 18-25 years both male and female were chosen. The blood group of each subjects were determined by agglutination test by using known commercial anti-sera [Anti- A and Anti-B Sera]. Blood pressure of each participants were recorded in sitting by using Autonomic Blood Pressure Monitor. The participants were asked to immerse their right hand in ice cold water (4 C) and recorded the Blood Pressure for the other arm at 30 sec intervals for 2 minutes. After completion of 2 minutes, the subject was allowed to remove the hand and immediately blood pressure was measured. Body Mass Index was calculated in kg/m2 of each subject.

Results and Conclusions will be discussed in presentation.

PP – 55

To study the association of body mass index with sympathetic function in young male adults.

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Background: Obesity has several serious health implications. Autonomic nervous system is also affected in obese people. Obesity leads to an imbalance in the autonomic nervous system, especially in increased sympathetic modulation and decreased vagal tone, and some anthropometric, metabolic, and lifestyle variables may increase the risk of developing cardiovascular diseases.

Methods: 120 volunteers of age group 18-25 years were selected for the study. Basal parameters- weight, height & blood pressure were recorded after taking written consent. Systolic & diastolic blood pressure will be measured by aneroid sphygmomanometer just after cold pressure test for duration of 1 min and handgrip dynamometer test for duration of 2 min.

Results : It was noted that after cold pressure test and handgrip test sympathetic activity was increased in overweight and obese subject's comparison to normal BMI subjects.

Conclusion: This study suggested that maintain body mass index and improvement in your daily routine for physical activity i.e. the body mass index is maintain blood pressure will be maintained.

PP – 56

Effect of duration of Type 2 Diabetes Mellitus on Long Term memory in 30-50 years of age.

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Background: The prevalence of diabetes mellitus has been steadily increasing over the past few decades worldwide. Studies show that long standing diabetes can cause decline in memory. This study was done to assess the effect of duration of Type 2 diabetes on long term memory in 30-50 years of age.

Materials and Methods: Analytical study done in 50 patients attending the executive OPD of a tertiary care centre during a period of 1 month. Diabetes mellitus was diagnosed as per ADA guidelines. Memory was assessed by employing tests for Long term memory based on PGI battery for brain dysfunction.

Results : A p value of 0.205 was obtained on doing a Chi-square analysis. Thus, significant results were not obtained in this study, probably due to the limited number of diabetics with greater duration of diabetes.

Conclusion: Memory decline in diabetes should be acknowledged with more concern as it dampens the patient's quality of life and also worsens diabetes. Hence, more studies in this field should be encouraged.

PP – 57

Impact of cardiac enzymes on ST and Non-ST segment elevation Myocardial infarction patients.

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Acute chest discomfort is commonly caused by myocardial ischemia or infarction. Myocardial ischemia usually occurs in the setting of coronary atherosclerosis, but may also reflect the dynamic component of coronary vascular resistance. Coronary spasm can occur in normal coronary arteries or in patients with coronary artery disease (CAD), near atherosclerotic plaque and in smaller coronary arteries. This research study was conducted to analyse the impact of cardiac enzymes on ST segment elevation and NON ST segment elevation myocardial infarction (STEMI & NSTEMI) patients. This study was carried out to understand ECG patterns in patients having STEMI or NSTEMI and also visualise the ejection fraction through echocardiography, analyse percentage blockage by angiography of the heart and test its biomarkers to identify the heart attack. This study included 40 patients out of which 33% were having STEMI and 68% were having NSTEMI with other associated diseases treated in RAM MANOHAR LOHIA HOSPITAL.The cardiac enzymes were not in its normal range in MI patients specially Creatine phosphokinase (CPK) which is also identify the second heart attack that occurs shortly after the first . The values of CPK were more than 200u/l in STEMI and less than 50u/l in NSTEMI. In echocardiography 23% MI patient were having 35% of ejection fraction and 3% were having 20% of ejection fraction. So we observed through angiography that mostly blockage (%) occurs in LAD (91%-100%) having ejection fraction less than 35% in both STEMI and NSTEMI.

PP – 58

SARS-CoV-2 infection predisposes pregnant women to a greater severity of preeclampsia: A possible association

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Pre-eclampsia is an important cause of maternal and perinatal morbidity and mortality affecting 5–7% of pregnant women. Clinically, it is defined as the onset of hypertension and proteinuria at or after 20 weeks of gestational period. It is a serious multisystem disorder with diverse clinical manifestations associated with cardiovascular dysfunctions, disruption of NO, impaired inflammatory response, elevated liver enzymes, preterm deliveries, renal failure etc.

Coronavirus disease 2019 (COVID-19) is a illness caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is a positive stranded RNA virus, similar to other coronaviruses. The COVID–19 has become the global threat infecting millions of people. The virus enters into the host cells through the ACE–2 receptor and their expression is more on type II alveolar cells of the lungs. COVID-19 is primarily a respiratory infection; it has important systemic effects including hypertension, kidney disease, thrombocytopenia, and liver injury. There is less knowledge about common pathologies complicating pregnancy by the SARS-CoV-2 infection. It is well understood that the Pregnancy itself alters the body's response to viral infection, which can lead to more severe implications.

During pregnancy, ACE2 plays an important role in the regulation of arterial pressure and expresses itself in excessive amounts in placental tissue, including syncytiotrophoblast, cytotrophoblast, endothelium, and vascular smooth muscle of the villi. Intrauterine infection caused by COVID-19 can alter ACE2 expression, promoting a pre-eclamptic state. An increased incidence of PE has been reported among mothers infected with SARSCoV-2. The severity of pre-eclampsia is thought to be due to vasoconstriction resulting from the dysfunction of the renin-angiotensin system. The exact mechanism is still not clear. In our lab we are working on the mechanism involved in the severity of PE in COVID 19 pregnant patients.

PP – 59

Effect of Exercise and Manual Therapy on Pain and Dynamic Balance in Osteoarthritis Patients: Pilot Study

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Background: Worldwide Osteoarthritis is the leading cause of disability and most of this disability burden is attributable to involvement of hip or knee osteoarthritis. Objective of the present study was to establish the efficacy of physical therapy module consisting combination of physical exercise program with joint mobilisation in O.A Knee patients.

Method: A total of 10 O.A Knee patients were taken into study on basis of inclusion and exclusion criteria. The subjects were undergone the four week protocol, four times a week, in which they were given joint mobilisation and physical exercise program. The objectives were then assessed pre and post of the protocol using FRT (functional reach test) and VAS (visual analogue scale) as the outcome measures.

Result: A significant improvement was found after the statistical analysis of the data which reveals that joint mobilisation and physical therapy program improves the level of pain and dynamic balance in O.A knee patients.

Conclusion: This was a small sample study which concludes that joint mobilisation and physical therapy is effective in these patients , more over further investigation is desired with a large sample size.

PP – 60

Evaluation of Relationship between Physical Fitness and Creativity in school going girls of kolkata, India

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Background: Physical fitness may have some relationship with creative thinking. However, the literature is scanty in this field. The present study was therefore aimed to explore the relationship of physical fitness with creativity.

Method: Standard methods [Kuppuswami's scale of socio-economic survey, Assessment of Creativity by Baqer Mehdi's (1973)] were used to evaluate the socio-economic background and creativity on 131 school going girls in Kolkata. Fitness parameters were evaluated by standard methods.

Result: Students belonging to high socio–economic status (SES) had best physical fitness followed by low and medium SES groups, respectively. The high SES group also obtained highest score in non-verbal creativity. The low SES group possessed highest score in verbal creativity. Physical fitness parameters, e.g., maximum oxygen uptake capacity (VO2max) and flexibility had significant positive correlation with non-verbal creativity. The non-verbal originality showed significant negative correlation with body weight, body mass index , body surface area , mid-thigh skinfold and abdominal skinfold. The composite score of non-verbal creativity had positive correlation with VO2max, agility and flexibility.

Conclusion: Positive relationship exists between physical fitness and creativity. The study hence recommends achievement of physical fitness for better mental ability and creative thinking.

PP – 61

Dyslipidemia as an effect of acute aluminium exposure on female albino rats

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Background: Aluminium (Al) being the most pervasive element in the environment, it's exposure to mankind is unsafe. Based on metalloestrognic property of Al, the dyslipidemic impact of Al has been suggested and proposed as possible contributing mechanism for the Al-induced well-known health hazards. Current experimental work was undertaken to prove the Al-induced dyslipidemia in a dose dependant manner.

Methods: Young adult female Wistar rats were exposed to Al (5 and 10 mg/Kg bw, i.p.) for 2 weeks. After the exposure protocol, plasma and hepatic tissue lipid profiles were obtained.

Results: Increased triglyceride, total cholesterol, LDL cholesterol and VLDL cholesterol in plasma and liver were found in Al-exposed young adults in a dose-dependent fashion. In case of hepatic lipid profile, decreased levels of those parameters suggested critical role of Al in lipid metabolism. The atherogenic index and other cardiovascular risk parameters were also showed an increasing trend in a dose dependent fashion though not significant.

Conclusion: The study highlighted the dyslipidemic alterations in experimental female rats on acute Al exposure in a dose dependant manner. The results of the study suggest that even an acute exposure of Al can induce modifications in lipid profile parameters and cardiovascular risk factors.

Keywords: Aluminium, dyslipidemia, liver, atherogenic index

PP – 62

High intensity interval inspiratory muscle training in hypercapnic COPD patients during weaning: A case report

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Background: Inspiratory muscle weakness is found to be the most common problem reported post weaning and which is documented repeatedly after following prolonged mechanical ventilation despite successful weaning from mechanical ventilation. The present case report describes about the effectiveness of high intensity interval inspiratory muscle training in a COPD patient following successful discharge from an intensive care unit (ICU) after prolonged mechanical ventilation.

Methods: Patient was given supervised high intensity interval inspiratory muscle training(60 %-65% of PImax) for 7 days, in two consecutive sessions per day for 15 minutes of each sessions in conjunction with standard physiotherapy rehabilitation.

Results: Improvement was recorded in both the parameters i.e. dyspnea grade (Modified Borg Scale) and hypercapnia level (ABG Analysis, PaCO2) after the high intensity interval inspiratory muscle training.

Conclusion: These positive results indicate further research is needed to investigate the effect of high intensity interval inspiratory muscle training during weaning in COPD patients, for the possible inclusion of inspiratory muscle training into the physiotherapy management of patients following prolonged mechanical ventilation.

PP – 63

To study the renal parameters and electrolytes in patients with sickle cell disease (SCD)

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Background: Sickle cell disease (SCD) is the commonest genetic disease worldwide. It is an autosomal recessive genetic condition due to a mutation in the beta-globin gene resulting in an abnormal HbS molecule. Patients with sickle cell disease (SCD) are at increased risk of serious morbidity and mortality. Renal abnormalities in SCD are well known. This study was to investigate early detection of renal abnormalities in SCD in a context of limited resource settings. Materials: We prospectively studied 100 patients with sickle cell disease at Dhiraj Hospital, Sumandeep Vidyapeeth university, Vadodara, Gujarat India. All patients underwent evaluation of kidney function test and electrolyte. Serum creatinine, urea and uric acid were analyzed by photometry at EM-200 and serum electrolyte were analyzed by ion selective electrolyte at Nulyte analyzer.

Results: The mean levels of Urea 26.91±14.37, creatinine 0.77 ± 0.49 and uric acid 4.6±1.0 and in electrolyte measurement, the mean levels of sodium 135.24±4.7, potassium 3.71±0.58 and chloride 100.5±4.74 respectively. We analyzed chi square test to get p value, which is statistically significant ($P<0.05$). Conclusion: Generally Glomerular dysfunction is not uncommon. But Serum Urea, creatinine, uric acid and electrolyte may remain low or within low-normal range in SCD patients despite reduced creatinine clearance.

PP – 1

Title of the abstract: Effect of Acute Sleep Deprivation of 24 hrs on Cognitive Function in Young Medical Students of BPKIHS

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Background: Sufficient sleep is essential for better cognitive function. However, sleep sacrifice during exam-time is a common practice among medical students to increase exam-performance. Cognition can be evaluated by Stroop color and word test (SCWT) where a person's selective attention capacity, skills and processing speed ability are assessed. Thus, this study was done to observe the effect of acute sleep deprivation of 24hrs on cognition.

Methods: Ten apparently healthy third year medical students of BPKIHS were recruited for the present study. A computer based online version of SCWT was done to identify cognitive performance after a sleep duration of >7hrs for three consecutive nights. Then participants were asked to remain awake for the next 24hrs. SCWT was assessed again after acute SD. Paired T test was employed. Data are expressed in mean and SD. Level of significance is considered at $p<0.05$.

Result: Reaction time to SCWT was increased after acute SD (before SD = 97.42 ± 6.72 s vs after = 107.00 ± 10.39 s; p = 0.001). The number of correct response to SCWT decreased after SD (before = 39.00 ± 1.53, after = 36.17 ± 3.33; p= 0.012).

Conclusion: Acute sleep deprivation of 24 hours reduces cognitive function in medical students of BPKIHS.

PP – 2

Acute effect of selective yogic exercise on Brainstem Auditory Evoked Potential in stable patients of Chronic Obstructive Pulmonary Disease

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Background: BAEP reflects neuronal activity of auditory pathway. Yoga plays important role in complementary management of COPD. Thus, we aimed to assess the effects of short-term yogic exercises in BAEP.

Methods: One group pre test - post test interventional study enrolled 50 stable patients of COPD. Steps of yogic exercises were taught. Baseline recording was done, subjects performed the 20-25 minutes of yogic exercises, immediately after the completion, recording was done. Then, subjects were allowed to have rest for 10-15 minutes, recording was done again.

Result: Latency of wave I (1.78 ± 0.50 vs 1.99 ± 0.49 ms, p=0.006) and wave II (2.91 ± 0.32 vs 2.99 ± 0.30 ms, p=0.006) in right ear, latency of wave II (2.77 ± 0.42 vs 2.92 ± 0.46 ms, p=0.005) and wave V (5.72 ± 0.32 vs 5.91 ± 0.37 ms, p=0.017) in left ear were decreased immediately after yoga, compared to baseline. Latency of wave IV (5.51 ± 0.32 vs 5.34 ± 0.40 ms, p=0.042) was increased after 30 minutes of rest compared to immediately after yoga in right ear.

Conclusion: Transient increase in velocity of neuronal transmission was seen after yogic exercises.

PP – 1

Is COVID-19 More Prevalent in Malaria Non-endemic Countries than Malaria Endemic Countries?

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Background: The effectiveness of various antimalarial drugs against SARS-CoV-2 has demonstrated a peculiar relationship between SARS-CoV-2 and Malaria. We highlight the protective role of immune adaptations established in malaria endemic countries against COVID-19, such as efficient IFN-g production, and genetic polymorphisms in ACE2 and Cd147.

Methods: Using WHO COVID-19 case reports, we paired the 20 most affected countries in to groups of two with a similar number of cases. Spearman's rho and Kendall's Tau Correlation Tests were applied to determine the correlation between 'being malaria endemic or non-endemic' and 'severity of COVID19 infection (number of deaths)'.

Results: There was a significant negative correlation between the extent of malaria being endemic in region and severity of COVID-19 infection (d=.483, p=0.03), (r=0.659, p=0.002) and (t=0.551, p=0.004).

Conclusions: Malaria endemic regions experience a lower severity of COVID19 infection in comparison to malarial non-endemic regions. We postulate this to be due to malaria modifying key aspects of the immune system such as IFN-g and receptors such as ACE2 and CD147 that are involved in the pathogenesis of COVID-19, resulting in better survival rate.

PP – 2

How Professionalism is seen by Pakistani Medical Undergraduates in the light of "Arabian LAMPS"

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Background: Professionalism has been measured among medical students in faith-driven Arabian societies by using "Learners' Attitude of Medical Professionalism Scale" (Arabian LAMPS 28). As similar values apply in Pakistani society, the comparative attitude of male and female clinical medical undergraduates regarding professionalism still need to be ascertained here.

Aims and Objectives: To measure the attitude of clinical undergraduates regarding professionalism in our context and to observe the influence of gender. Subjects & Methods: Arabian LAMPS instrument was administered to 210 randomized clinical undergraduates of University of Lahore on 5-point Likert scale, including 70 students each from 3 rd , 4 th and final year with equal gender distribution.

Results: A total of 210 responses were received. In male 3 rd year undergraduates, mean scores varied between 3.94 (SD 0.91) and 2.37 (SD 1.33). The highest scoring item mainly dealt with the domain of "Excellence / Autonomy" while the lowest ones mostly pertained to "Duty / Accountability". In female 3 rd year undergraduates, mean 4.29 (SD 0.57) to 2.09 (SD 0.45). The highest score belonged to "Honor / Integrity" and lowest one to "Altruism". In male 4 th year students, mean 4.17 (SD 0.92) to 2.20 (SD 0.99) with highest score in "Duty / Accountability" and lowest in "Altruism". In female 4 th year students, mean 4.31 (SD 0.68) to 0.68 (SD 0.69) with highest score in "Excellence / Autonomy" and the lowest in "Altruism". In male final year students, mean 4.26 (SD 0.61) to 1.86 (SD 0.81) with highest score in "Excellence / Autonomy" and the lowest in "Altruism". In female final year students, mean 4.37 (SD 0.84) to 1.86 (SD 1.03) with highest score in "Respect to others" and lowest in "Altruism".

Conclusions: Predominantly male, but generally both genders among our clinical students hold professional excellence / autonomy to highest level. Like-wise, predominantly female students, but in general both genders regard altruism to the lowest level.

Key words: Medical Professionalism, Excellence, Autonomy, Altruism

PP – 3

Identifying the role of Heat Shock Proteins (HSPs) in ageing of males

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Background: Heat shock proteins (HSPs) are molecular chaperones implicated in longevity and ageing in many species. They play cytoprotective role under pathological conditions. Ageing is related to decline in cellular capacity to produce active HSPs. Ageing process is associated with decreased ability of the cells to cope with environmental challenges and increased oxidative stress, resulting partly from attenuation of a primordial stress response, called as heat shock response and from production of Reactive oxygen species (ROS). The objective of the study was to evaluate different markers of oxidative stress and HSPs in elderly male subjects.

Methods: We measured the HSPs (60, 70 and 90), oxidative markers and antioxidant markers among 50 young males as controls and 50 ageing males as study subjects by obtaining serum samples via Spectrophotometery and ELISA. The results were analyzed by independent T-Test on SPSS version 21.

Results: Significantly increasing trends of HSP-60 (8.68±2.085 ng/ml vs 1.18±0.095 ng/ml), HSP-70 (17.28±3.295 ng/ml vs 4.99±1.085 ng/ml) and HSP-90 (3.82±0.956 ng/ml) were depicted in old ageing group in comparison with controls. Antioxidant profile including Superoxide Dismutase (SOD), Catalase (CAT) and GSH showed significantly decreasing pattern in elderly population. The scrutiny of biomarkers including Malonaldehyde (MDA) and Nitric Oxide (NO) portrayed augmented picture in old age in contrast to young population. The study also revealed that Vitamins (A, B, C and D) decrease in aged population as compared to young ones.

Conclusion: The results depict that inflammatory marker specifically Heat shock proteins behavior in ageing males is highly significant. The data interpretation of HSP-60, HSP-70, and HSP-90 shows significant increased levels in ageing males in comparison with young controls.

Key Words: Oxidative stress markers, antioxidants, Vitamins, Heat Shock Proteins, Ageing.

PP – 4

Title of the abstract: Prevention of diet-induced hyperlipidemia by vitamin D intervention-An RCT on mouse model

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Background: Dietary fats lead to hyperlipidemia which is a risk factor for multiple disorders like hypertension, diabetes mellitus and cardiovascular diseases. Vitamin D has multiple beneficial effects on the body. It reduces serum lipid levels and prevents the development of hyperlipidemia. The objective of the study was to determine the effect of vitamin D supplementation on serum lipid levels in mice taking high fat diet.

Methods: In this randomized control trial, ninety (90) male albino mice were randomly taken into three groups with 30 mice in each group. Group A was given normal diet, group B was given high fat diet, group C was given high fat diet plus vitamin D (calcitriol, 100ng/kg per day) for 6 weeks. By the end of 6 weeks, blood sample was collected by terminal blood sampling technique. Serum was analysed for lipid profile by calorimetric method. Data was analysed by using SPSS version 20.

Results: Serum total cholesterol (TC), low density lipoproteins (LDL), very low density lipoproteins (VLDL) were raised significantly and high density lipoproteins (HDL) was reduced significantly in high fat diet group B as compared to normal diet group A. Total cholesterol (TC), LDL, VLDL were reduced significantly and HDL was raised significantly in high fat plus vitamin D group C as compared to high fat diet group B.

Conclusion: It was concluded that high fat diet when administered to mice caused hyperlipidemia and vitamin D administration to mice on high fat diet prevented the development of hyperlipidemia.

Key Words: Hyperlipidemia, Vitamin D, Diet.

PP – 5

Effect of Moderate Physical Activity on Antioxidant Status in Prediabetic Population.

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Background: Prediabetes is a preclinical stage with hyperglycaemia below the level of DM but with high risk of developing T2DM and its complications.

Material and Methods: We determined the individual and total antioxidant capacity in prediabetic Pakistani population. It was an experimental study designed with convenience sampling. Adult prediabetics (n=50), 18 to 35years age group were included in the study. Anthropometric measurements and body plethysmography was done at pre- and post-exercise intervals. The participants performed moderate exercise protocol of 30 min with HRmax% 70 ± 5% for 5 days a week for 8 weeks. ELISA analyses for individual and total antioxidants were carried out.

Results: Anthropometric parameters and diabetic profile showed a significant decrease at post exercise interval. Of the antioxidants, increased Uric acid ($P < 0.005$) and TAC concentration ($P < 0.001$). However, Superoxide dismutase and glutathione peroxidase, vitamin C and nitric oxide levels showed a decrease ($P < 0.001$).

Conclusion: Moderate physical activity at 70 ± 5 % of predicted maximum heart rate for 8 weeks had a significant effect on lowering the individual antioxidant levels, nominal increase in TAC and uric acid and an explicit decline in anthropometric and diabatic profile of patients with prediabetes.

PP – 6

How Professionalism is seen by Pakistani Medical Undergraduates in the light of "Arabian LAMPS"

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University College of Medicine & Dentistry (UCMD), University of Lahore

Background: Professionalism has been measured among medical students in faith-driven Arabian societies by using "Learners' Attitude of Medical Professionalism Scale" (Arabian LAMPS28). As similar values apply in Pakistani society, the comparative attitude of male and female clinical medical undergraduates regarding professionalism still need to be ascertained here.

Aims and Objectives: To measure the attitude of clinical undergraduates regarding professionalism in our context and to observe the influence of gender.

Methods: Arabian LAMPS instrument was administered to 210 randomized clinical undergraduates of University of Lahore on 5-point Likert scale, including 70 students each from 3rd, 4th and final year with equal gender distribution.

Results: A total of 210 responses were received. In male 3rd year undergraduates, mean scores varied between 3.94 (SD 0.91) and 2.37 (SD 1.33). The highest scoring item mainly dealt with the domain of "Excellence / Autonomy" while the lowest ones mostly pertained to "Duty / Accountability". In female 3rd year undergraduates, mean 4.29 (SD 0.57) to 2.09 (SD 0.45). The highest score belonged to "Honor / Integrity" and lowest one to "Altruism". In male 4th year students, mean 4.17 (SD 0.92) to 2.20 (SD 0.99) with highest score in "Duty / Accountability" and lowest in "Altruism". In female 4th year students, mean 4.31 (SD 0.68) to 0.68 (SD 0.69) with highest score in "Excellence / Autonomy" and the lowest in "Altruism". In male final year students, mean 4.26 (SD 0.61) to 1.86 (SD 0.81) with highest score in "Excellence / Autonomy" and the lowest in "Altruism". In female final year students, mean 4.37 (SD 0.84) to 1.86 (SD 1.03) with highest score in "Respect to others" and lowest in "Altruism".

Conclusion: Predominantly male, but generally both genders among our clinical students hold professional excellence / autonomy to highest level. Like-wise, predominantly female students, but in general both genders regard altruism to the lowest level.

Key words: Medical Professionalism, Excellence, Autonomy, Altruism

PP – 7

Proteomic Profiling and Identification of Potential Novel Biomarker in Infertile Polycystic Ovary Syndrome

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Background: Polycystic ovary syndrome (PCOS) is the heterogeneous and commonly found reproductive endocrine disorder causing anovulatory infertility. Along with, diverse signs and symptoms, it is also associated with breast, endometrial and ovarian cancers. Those infertile PCOS women who had gone through repeated ovulation induction procedures are more at risk of developing ovarian cancer. E3

Objectives: This study aimed to identify and compare the proteomic map of healthy fertile and infertile PCOS serum by protein profiling and to determine the differentially expressed proteins to reveal potential novel biomarker in infertile PCOS women.

Methods: This study enrolled 40 age-matched (18-45 years) women including healthy fertile (n=20) and infertile PCOS patients (n=20) to obtain their blood samples. The two proteomic profiling techniques; 2-Dimensional Gel Electrophoresis (2D-GE) and Matrix-Assisted Laser Desorption/ionization-Time of Flight (MALDI-TOF) mass spectrometry, were employed to separate and identify proteins. The change of expression (over/under expressed) was determined by the fold change ($\geqslant$ 1.5) difference between healthy and PCOS spots. Mann-Whitney U test was used to calculate all gel spot intensities. The peptide mass fingerprint (PMF) score $\geqslant$ 79 was considered statistically significant for all differentially expressed proteins.

Results: This PMF analysis of the infertile PCOS group (mean age: 32.5±10.5) and controls (mean age: 29.1± 9.2) identified total 94 but 13 proteins with significant MASCOT score ($\geqslant$ 60) in all 2D gels by searching against SWISS-PROT database. Among these 18 proteins, 12 upregulated and 1 downregulated proteins (PMF $\geqslant$ 79 and p-value $\leqslant$ 0.05) were explored further. Out of these differentially expressed proteins, Transthyretin, a novel protein was found that has not been previously reported in infertile PCOS women.

Conclusion: A differential protein, transthyretin is nominated as a potential novel biomarker for the early diagnosis of PCOS and can improve risk stratification in subgroups of infertile women with PCOS who can develop ovarian cancer.

PP – 8

Myotoxic Effect Of Crude Venom Of Echis Carinatus: A Study On Isolated Ileum Preparatiopn of Rabbit

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The Echis carinatus a saw scale viper snake of Pakistan is one of the medicinally important snake specie and responsible for serious envenomation casualties throughout the subcontinent. Echis carinatus venom effect was undertaken in this study and its responses were observed on isolated ileum preparation of Rabbit by using classical Organ bath assembly. Venom concentration 1, 10, 30, 50 and 100 μg were chosen and its effect on active tension and frequency of muscle contraction of ileum preparation was monitored and recorded on PowerLab data acquisition system. Venom response in the presence of Acetylcholine and Adrenaline were also evaluated in this study. The results showed dose and time dependent decline by the Echis venom. However, the observed delayed inhibitory effect of venom remains unchanged and rarely influence by the presence of Aacetylcholine and Adrenaline. The finding suggests the presence of greater myotoxic component in venom of this viper specie.

PP – 9

Chronic Periodontitis A Possible Threat Towards Cvd

Ayesha Sadiqa

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Background: Periodontitis is a common oral health issue. The cause and affect relation of chronic periodontitis with cardiovascular disease has been a hot topic of research but there is scarcity of database in our population. Present study was designed to assess the association of mild to severe periodontitis with cardiac disease in local males and females by estimation of IL-6.

Methods: This was an analytical cross-sectional study conducted on 75 volunteers including 46 males and 29 females. A total of 55% patients were diagnosed with both cardiac and periodontal pathology, whereas 45% patients with only chronic periodontitis. Sandwich ELISA was used for the estimation of circulatory IL-6.

Results: Higher levels of circulatory IL-6 were found in both genders with advance state of chronic periodontitis. Although low IL-6 was observed in periodontitis alone in comparison with periodontitis associated heart disease. Highest serum IL-6 was estimated in cardiac patients with mild periodontitis in comparison with the severe one. Higher IL-6 was observed in males as compared to females with mild periodontitis alone and in those with cardiac pathology as well, except in the category of severe periodontitis.

Conclusion: In mild periodontitis with or without heart disease, males relatively exhibited increased serum IL-6 but in case of severe periodontitis, females displayed higher IL-6.

PP – 10

Correlation of BMI Variation with Tidal Function in Healthy Young Adults

Ayesha Sadiqa

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Background: Effect of Body Mass Index (BMI) on lung tidal function in healthy adults is yet to be clearly answered by the researchers. So present study aimed to observe the effect of BMI on Tidal volume and its rate of air flow in healthy young adults.

Methods: A cross-sectional study was conducted at Shalamar Medical and Dental College, Lahore from April-August, 2018 with 60 MBBS students with age 19-21 years. Consent was taken. Healthy subjects were included and subjects on any medication or involved in endurance training were excluded. PowerLab was used to measure Tidal volume along with air flow rate. BMI values were taken in kg/cm. Linear regression was performed to see the effect of BMI on tidal volume and its rate of air flow.

Results: In both genders BMI was not proved a predictor of Tidal volume (L) nor it was proved a predictor of Tidal air flow rate (L/min) in healthy young adults resulted through regression analysis. Where Tidal volume and its rate of flow were taken as dependent variables and BMI was considered as independent variable, however the results proved statistically insignificant p-value (>0.05).

Conclusion: BMI has no correlation with Tidal volume and its air flow rate in healthy young adults.

PP – 11

Mild Chronic Periodontitis: A Possible Threat Towards Cvd In Males With Raised C-Rp

Ayesha Sadiqa
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Background: Chronic Periodontitis, is a globally common oral problem. Lately, the association between periodontitis and cardiovascular disease has received greater attention, though there is paucity of database in local population. This study was aimed to explore the possible association of chronic periodontitis with cardiovascular disease by elevating C-reactive proteins (C-RP), and to study any influence of gender, in the study population.

Methods: This was an analytical cross-sectional study and involved 75 patients (46 males and 29 females) volunteering their blood samples, out of which 55% carried both cardiac and periodontal diseases, whereas 45% had periodontitis alone. Serum level of C-RP was assessed by performing sandwich ELISA.

Results: In both genders C-RP was higher in case of mild periodontitis as compared to severe one. In males raised serum level of C-RP was noticed in patients of cardiovascular disease along with periodontitis in comparison to those who had only chronic periodontitis. Male and female patients who had chronic periodontitis alone showed significantly less concentration of C-RP as compared to patients with chronic periodontitis along with heart disease. Highest level of C-RP was seen in both genders, with cardiac disease accompanied with mild periodontitis rather than with severe periodontitis. Furthermore, in all categories females showed relatively low C-RP.

Conclusion: Mild state of chronic periodontitis is more pronounced threat towards cardiovascular disease, especially among males.

PP – 12

Correlation of glycemic index with thyroid function tests in patients of type 2 diabetes mellitus

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Background: Thyroid disease and Type 2 diabetes are two common endocrine diseases, found in the general population. Thyroid disease is a condition that can adversely affect the control of diabetes and contribute to adverse outcomes for patients. This study was designed to find out correlation of fasting blood glucose with thyroid function tests in type 2 diabetes mellitus.

Methods: This cross-sectional study was conducted on a sample of 90 patients. Demographic data and medical history collected by the use of structured questionnaires. FBG was measured by glucose oxidase method. Thyroid hormones assays were determined by using ELISA.

Results: There was a high prevalence (22.2%) of thyroid disorders in patients of type 2 diabetes mellitus. Thyroid dysfunction was more common in females type 2 diabetic patients 13 (14.43%) as compare to male type 2 diabetics 7(7.7%). TSH was strongly correlated with FBG (P-value 0.00). but T3,T4 did not show correlation with FBG.

Conclusion: Present study found significant correlation between FBG and TSH. But FBG did not reveal significant correlation with Total T4,T3. This study concluded that regular screening for thyroid hormone levels especially thyroid stimulating hormone in type 2 diabetic patients should be done especially in patients with poor diabetic control.

PP – 13

Impact of Lockdown due to Coronavirus Disease of 2019 (COVID-19) on the Weight related Quality of Life

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Background: The current lockdown due to the COVID-19 virus has clearly led to changes in the lifestyles of all individuals. This study aimed to determine the effects of this lockdown on the lifestyles of individuals and ultimately the overall changes weight-based quality of life in the undergraduate population of Pakistan.

Methods: This cross sectional study was conducted by using Microsoft forms. A total of 157 responses were attained. The questionnaires were adapted using Impact of Weight on Quality of Life (IWQOL). Chi- square test was used for comparison of categorical variables. P value <0.05 was significant.

Results: Out of 157 responses, 109 were females and 48 males. The mean weight before and after the lockdown was 61.95 kg and 64.97kg respectively. Significant changes in areas of physical function, self-esteem and work were attained with p-values of <0.001, 0.002 and 0.023 respectively.

Conclusion: It was concluded that the lifestyle changed and as a result the weight of the undergraduate population of Pakistan has generally increased during the lockdown due to the COVID-19 virus. Not only this but self-esteem has decreased among the youth and they face mental health issues including anxiety and distress due to the direct effects of the lockdown on lifestyle.

PP – 14

Association of Sleep paralysis with Insomnia and sleep quality among medical undergraduates

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Background: Sleep paralysis, accompanied by hypnopompic and hypnogagic hallucinations is commonly occurring phenomenon affecting number of individuals and it is found to be usually associated with sleeplessness and poor sleeping habits and quality. This study is designed to determine an association of sleep paralysis with insomnia and sleep quality.

Methods: This was a cross sectional examination led on medical undergraduates in a local medical college of Pakistan. A survey containing segment data, a sleep paralysis related questionnaire, a scale for insomnia; Insomnia Severity Index and a scale for sleep quality; Pittsberg Sleep Quality Index was completed by 100 participants.

Results: Positive association was found between sleep paralysis and Insomnia and sleep quality with $p=-0.11$ and $d=0.247$, $p<0.001$ and $=-0.417$ respectively. Medical undergraduates have high prevalence (52.8%) of sleep paralysis. Also, the high rate of occurrence among the females than males and higher rates in adolescents are particularly of concern.

Conclusion: There is a positive association between frequency of occurrence of sleep paralysis and insomnia and sleep quality. Better sleep schedules, enhancement of sleep quality with possible eradication of insomnia should be done in order to prevent terrible experience of sleep paralysis.

PP – 15

Effects of COVID-19 lockdown on mental health and sleep disturbances in medical and dental undergraduates from a private medical college in Pakistan.

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Background: The coronavirus disease 2019 has been recognized as a cause of direct and indirect psychological consequences that impact the mental health such as acute stress disorders, anxiety, irritability, poor concentration, and insomnia. This study was planned with the objective to identify disturbances in sleep habits of undergraduate students along with the evaluation of general health, depression and anxiety disorders.

Materials and Methods: The study was conducted on 260 undergraduates at CMH Lahore Medical College. The Pittsburg Sleep Quality index (PSQI) was used to identify the quality of sleep along with the Generalized Anxiety Disorder Scale (GAD-9) and the Physical Health Questionnaire (PHQ-9).

Results: The results show that 214 (82.3%) female and 46 (17.7%) male students participated in the study, out of which 30 (65.2%) males and 141 (65.9%) females had a mean PSQI score of less than 5 indicating a poor quality of sleep. The number of study participants falling in the moderate, moderately severe and severe categories of PHQ-9 score was high at 22.7 %, 27.3% and 20% respectively, and among these, the number of bad sleepers was significantly higher than good sleepers (p-value 0.0001). The scores of GAD-9 also indicate a high majority of the participants falling into the moderate and severe categories of anxiety at 30% and 31.9% respectively with a significant difference between good and bad sleepers (p-value 0.0001). The overall mean + SD PSQI score of all study participants was 7.45 + 4.08, PHQ-9 score was 13.78 + 6.8 and GAD-9 was 11.36 + 5.9.

Conclusion: A high majority of the study participants are suffering from sleep disturbances along with depression and anxiety amidst the Covid-19 lockdown. There is a need to focus more on the counselling of undergraduate students along with introduction of strategies for a better mental health as part of the curriculum.

PP – 16

Irisin; a promising muscle hormone

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Background: Irisin, a novel adipomyokine, is secreted naturally by skeletal muscle and adipose tissue in response to exercise. Parenteral administration of irisin alleviate oxidative stress in obesity and diabetes. Current study has been designed to establish protective role of endogenous irisin in nicotine induced oxidative stress.

Methods: Randomized control study was carried out in Physiology Department of FUI, Islamabad using BALB/c mice. Group I was healthy control group, Group II, was given nicotine 2mg/kg.bw i.p for 28 days while group III, was subjected to 30 minutes of swimming exercise daily for 28 days along with i.p nicotine. On 29th day, tissue irisin and antioxidant enzymes levels were estimated using ELISA. Difference across groups was calculated. p value of < 0.05 was considered significant.

Results: Group II showed statistically significant increase in TBARS levels (p-value <0.001) and reduction in antioxidative enzymes (SOD, CAT and GR) levels (p-value < 0.001) as compared to group I. Group III mice showed significant improvement in antioxidant enzymes levels and reduction in TBARS levels ($p< 0.001$) as compared to Group II.

Conclusions: Irisin, ameliorates oxidative stress by improving anti-oxidant enzyme levels. It can be considered as a promising molecule for treatment of nicotine induced oxidative stress.

Key words: Irisin, antioxidant enzymes, oxidative stress

PP – 17

Role of Vitamin-D In Fibromyalgia Development: Cross Sectional Study

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Background: Fibromyalgia is a common condition characterized by long-term, body-wide pain and tender points in joints, muscles, tendons, and other soft tissues.

Aim: To assess the role of vitamin D in the development of fibromyalgia.

Methods: A sample of 92 patients keeping confidence level equal to 95% and margin of error equal to 10% in the current study carried from March to August 2018 in the Department of Orthopedics, Allama Iqbal Hospital, Lahore after the approval from Hospital's Ethical Committee. Informed consent was taken at enrollment time. Serum vitamin D was done. Patients were treated with vitamin D with calcium at 1000mg daily dose. SPSS software, v22 analyzed the data.

Results: Out 92 patients, 58 (63.0%) were males and 34 (37.0%) were females. In 70 (76.1%) patients, pain affects/limit the daily routine. The mean calcium level was higher in patients with normal vitamin D levels as compared to vitamin D deficient groups with p-value of <0.05.

Conclusions: It was concluded that there was deficiency of Vitamin-D and other bone metabolism markers among patients of fibromyalgia.

Key words: Vitamin D, Fibromyalgia and Bone Metabolism Markers.

PP – 18

Effect of Preferred Learning Styles on Academic Achievements: A Cross Sectional Descriptive Study

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Background: The process by which a learner can effectively perceive, understand, memorize and recall a specific piece of information is called the 'learning style'. The learning style of everyone is different depending upon individual's cognitive skills. Few students use one or two modes for learning while others use a multimodal technique. This study aims to find out the preferred mode of study for undergraduate Physiology students and effect of learning style preferences on academic achievements.

Materials and Methods: This is a cross sectional, descriptive study, conducted in Fatima Jinnah Medical University, Lahore. Total 170 undergraduates 2nd year M.B.B.S Physiology students were included. The VARK questionnaire (Version 7.1) designed by Fleming was administered to 170 students after taking consent. This questionnaire is a valid tool to assess the learning style preferences of students. It consists of 16 questions having four options each and a scoring chart at the end, for the students to calculate their own scores. The aggregate percentage of periodic assessments throughout the academic year was defined as academic achievement. It was matched with their learning style preferences. A relationship between the learning style preferences and academic achievement was studied. Data was analyzed by using SPSS version 23.0.

Results: Out of a total of 170 students, 73 (43%) preferred kinesthetic while 51(30%) preferred aural mode of learning. However, no association between learning style preferences and academic achievements could be found.

Conclusions: The study concluded that the most preferred learning style among the M.B.B.S 2nd year Physiology students was kinesthetic. No significant association was found between the learning style preferences and academic achievement. Teaching modalities can be improved and incorporated according to students' preferences.

Key words: VARK, academic achievement, learning style, multimodal.

PP – 19

Protective Role Of Hericium Erinaceus Consumption In Ischemic Reperfusion Injury In Middle Cerebral Artery Occlusion Rat Model Of Stroke

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Background: Among Central Nervous System disorders ischemic injury to neurons is the most apparent cause of motor and sensory disability. Basic mechanisms responsible for stroke are ischemia and hemorrhage, out of which ischemic injury is most common. In stroke harmful chemical mediators are released, that not only damage the tissue but also triggers the tissue destruction processes. Different studies have suggested that if these chemical mediators can be controlled by help of neuroprotective and antioxidant agents, treatment of pre and post ischemic injury can be improved by recommending effective non pharmacological therapies along with pharmacological treatments. Present study is designed to investigate the neuroprotective and antioxidant potential of Hericium erinaceus in control and reversal of ischemic reperfusion injury in middle cerebral artery occlusion rat model of ischemic stroke.

Materials and Methods: Wistar Albino rats (n=54) of same age and sex with average body weight of 200-250gms were selected for the study. After one week acclimatization period , animals were equally divided into six experimental groups. Group I (control) animals received normal lab diet throughout the period of study. Group II (Sham) animals received normal lab diet throughout the period of study and operated for middle cerebral artery exposure at the end of study period. Group III (stroke) animals received normal lab diet and middle cerebral artery occlusion. Group IV (Prestroke hericium treated) animals received 300mg/Kg of body weight HE orally for 7 days and MCAO at 8th day. Group V (Post stroke hericium treated) animals received two doses of 300mg/Kg of body weight hericium orally at 4th and 12th hour of MCAO. Group VI (Hericium treated) animals received HE orally per day for 7 days. At the end of experimental period animals were observed for behavioral changes and physical die effects of Hericium erinaceus supplementation against cerebral ischemic stroke that may be attributable to its antioxidant and anti-inflammatory potentials.

Key words: Ischemic Reperfusion injury, Hericium erinaceus, Ischemic stroke, MCAO, rat.sabilities and blood and tissue samples (brain, liver, kidney and heart) were collected. Blood samples were analyzed for changes in plasma lipid profile, glucose, liver enzymes, renal function estimators, total protein, c-reactive protein, electrolytes and tissue antioxidant enzyme leves (catalase, superoxide dismutase and glutathione). Tissue from brain, heart liver and kidney were excised to visualize histologic variations associated with given treatments.

Results: Results showed extensive MCAO-induced alterations in cellular antioxidant defense system, biochemical parameters and inflammatory reactions mediated tissue damage in brain, liver and kidney. Hericium erinaceus supplementation significantly improve these pathophysiological and biochemical events in Pre/Post HE treated experimental groups.

Conclusion: Findings of present study suggest neuroprotectiv

PP – 20

Association of novel Stop Gained Leukemia Inhibitory Factor Receptor Gene (rs121912501) Variant, ILeukemia Inhibitory Factor and Ovarian Steroids with Unexplained Infertility among Pakistani women

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Background: Embryo implantation is a complex process that requires sequential steps at the interface of embryo interaction with decidual endometrium. Many women after experiencing multiple attempts of Assisted Reproductive Techniques fail to get implantation due to instability of Leukemia Inhibitory factor and Leukemia Inhibitory Factor Receptor-Signal Transducer and Activator of Transcription Factor 3 (LIF-LIFR STAT3) signaling cascade. Therefore, this study explores the association of ovarian steroids, LIF and LIFR stop gained variant using the Tetra Primer Amplification Refractory Mutation System-Polymerase Chain Reaction (TARMS-PCR) with unexplained infertility (UEX-IF) among Pakistani women

Materials and Methods: This is a case-control study. A total of 81 unexplained infertile women and 162 fertile controls (with age and BMI matched) were inducted. Serum Estradiol, Progesterone and LIF were determined using Enzyme linked immunosorbent assay (ELISA). T-ARMS-PCR were designed using Primer I software. Genomic DNA was extracted from peripheral blood and amplified using T-ARMS-PCR followed by sequencing for validation and comprehensive concordance

Results: This study established differences in LIF levels (2=9.857, p<0.05) between cases and controls and explored that decreased LIF significantly raised the risk of UEX-IF (OR=2.316; 95%CI=1.214,4.416). Progesterone (P)was significantly associated with UEX-IF between fertile and infertile counterparts (2=20.347, p<0.05). It was also observed that increased Progesterone reduced the risk of UEX-IF (OR=0.306; 95% CI=0.166,0.567). A rapid and inexpensive method for genotyping novel LIFR gene polymorphism through T- ARMS-PCR was successfully developed. LIFR gene SNP (rs121912501) had significant association (2=200.681, p-value<0.05) with UEX-IF. LIFR rs121912501 “TT” genotype (OR=5.417; 95% CI=1.868,15.709) and “CT” genotype (OR=3.104, 95%CI=1.586,6.076) were at increased risk of infertility.

Conclusions: UEX- IF can be caused by LIFR gene variation irrespective of increased P. It may open doors for the discovery of new management plans for infertile women

PP – 21

Evaluation and Comparison of the Effects of Conventional and Newer Antiepileptic Drugs on Lipid Profile of Epileptic Patients

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Introduction: Epilepsy is a chronic non-communicable disease of the brain that effects around 50 million people worldwide. It is characterized by recurrent seizures,which are brief episodes of involuntary movements that may involve a part of the body (partial) or the entire body (generalized) and are sometimes accompanied by loss of consciousness.Seizure episodes are a result of excessive electrical discharge in a group of brain cells . Different parts of the brain can be the sight of such discharges .Seizures can be from the brief lapses of attention or muscle jerks to severe and prolonged convulsion. Seizures can also very infrequent,from less then one per year to several per day.

There are various studies that reported the patients on antiepileptic drugs that is i.e enzyme inducers have deranged lipid profile while there are many other studies which pointed out that enzyme reducers and newer antiepileptic drugs has no influence on serum lipid profile. Many studies have investigated the effect of AEDs on serum lipid levels. AEDs can cause hyperlipidemia by inducing the p450 enzyme system in the liver, which may predispose a patient to atherosclerosis

My study is to access the results of enzymes inducers,reducers and newly antiepileptic drugs on lipid profile.For that the antiepileptic drugs I selected was Oxcarbazepine (OXC),Valporoic acid(VPA) and Levetracetam (LEV).

Aim:
To assess the effect of antiepileptic drugs on serum lipid profile among adults with epilepsy in a tertiary care hospital in Lahore (Mansoorah hosp)

Objectivesl :

- To evaluate serum lipid profile of adult patients on conventional antiepileptic drugs (Oxcarbazepine and valproic acid) attending Neurology OPD of a tertiary care hospital in Lahore (Mansoorah hosp) compared to normal subjects.
- To assess serum lipid profile of adult patients on newer antiepileptic drugs (levetiracetam) compared to normal subjects.
- To compare the effect of newer antiepileptic drugs against commonly used antiepileptic drugs on serum lipid profile of epileptic adults.

Materials and Methods : Prospective cross-sectional study conducted in tertiary care hospital in Lahore (Mansoorah hosp).We studied on ninety patients who are taking antiepileptic drugs for the last six months (30 on OXC,30 on VPA and 30 LEV)while 90 controls were taken

Inclusion criteria :

- Adult patients of both sex between20-40 years.
- Taking antiepileptic drugs for last six months
- Pleased to engage and giving informed written consent.

Exclusion criteria :

- Patients taking more than one antiepileptic drug.
- Females who have conceived.
- Patients with secondary epilepsy.
- Patients on lipid lowering drugs.
- Patients having other medical illnesses

Selection of controls :

- Relatives of study subjects,ages between 20-40 years.
- Not taking any lipid lowering drugs.
- Not having any medical issues.
- Pleased to engage and giving informed written consent.

Venous blood sample,(5ml) was drawn from study subjects and control Under sterile condition after an overnight fast. Serum was separated by centrifugation at 3000 rpm for 10 mins, It was than kept frozen at 20°C to be analysed later on.

TC was calculated by enzymatic method and expressed in mg/dl. HDL-C was calculated by Polyanion Precipitation (PAP) and expressed as mg/dl. LDL-C was calculated using Friedewald's formula i.e LDL-C=Total cholesterol-(HDL-C+TG5)or LDL-C=Total cholesterol-(HDL-C+0.2 Triglyceride) and VLDL-C=TG/5-LDL-C=TC-HDL-C-VLDL-C.P

Triacylglycerol (TAG) in serum was converted to glycerol and then estimated using glycerol kinase enzyme based kinetic method and expressed in mg/dlLDL-C/HDL-C-ratio was also calculated.

Statistical Analysis

Statistical Analysis was performed by using SPSS. Inc statistical software version 17.0. Descriptive statistics explained using mean ± SD. Inferential statistics was used depending on the nature of variables. We used one way ANOVA and followed by independent t-test for comparison with control group and statistically significant was considered at P-value <0.05.

Results: Epilepsy is a disease requiring long-term, sometimes lifelong, treatment (9) Epilepsy is a chronic disorder and different AEDS are being used for its treatment.

Our study was designed to evalute the effects of conventional and newer AEDS on lipid profile,its parameters were TC,HDL-L,LDL-C and TAG

The observations I found that there is significant increase in mean TC,HDL-C,LDL-Cand TG levels as compared to normal

There were 30 patients each in Oxcarbazepine, valproic acid and levetiracetam group. For each group 30 controls were taken so total numbers of controls were 90. We observed statistically significant high mean TC, HDL-C and TG levels in the group receiving Oxcarbazepine for more than six month when compared with control. However, no significant difference was observed in mean LDL-C levels when compared to controlWe did not observe any statistically significant difference among mean TC, HDL-C, LDL-C and TG levels in the group receiving valproate for more than six months when compared with control group. We did not observe any statistically significant difference among mean TC, HDL-C, LDL-C and TG levels in the group receiving levetiracetam for more than six months when compared with control group . We observed statistically significant increase in mean TC levels in groups which received Oxcarbazepine when compared with control. High mean TC levels were found in Oxcarbazepine. We observed statistically significant increase in mean HDL-C levels in groups which received Oxcarbazepine when compared with control. High mean HDL-C levels were found in Oxcarbazepine. We didnot observe statistically significant increase in mean LDL-C levels in group receiving oxcarbazepine when compared with control. We observe statistically significant increase in mean TG levels in groups which received Oxcarbazepine when compared with. We did not observe statistical significance in any of the groups when compared with their mean LDL-C/HDL-C ratio with control group

Conclusion: From the present study we can conclude that CYP enzyme inducer anti epileptic medicines like Oxcarbazepine is strongly associated with increased levels of TC, HDL-C and TG where as valproate and levetiracetam showed no significant change. Therefore, the serum cholesterol level should be regularly monitored in patients undergoing therapy with inducer anti epileptic medicines. In our study oxcarbazepine is used in antiepileptic patients may be due to the advantages such as less drug interactions, least toxic. Also, it is a weak enzyme inducer; this may be the reason why the level of LDL-C was not statistically different from control. The mechanism of action for OXC is not completely understood but its activity is exerted through its active metabolite, in fact, OXC is rapidly reduced to 10,11-dihydro-10-hydroxy-carbazepine. This drug exerts different effects such as blockade of voltage-sensitive sodium channels, stabilization of hyperexcited neural membranes, inhibition of neural firing, and reduction of synaptic impulse propagation.

PP – 22

The Interplay of Serum Visfatin with Anthropometric and Glycemic Parameters in Non-diabetic Female Subjects.

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Background: Visfatin is a ubiquitous, multifaceted protein functioning as a cytokine, an enzyme and adipokine. It has insulin like metabolic effects and has a key role in insulin secretion in response to glucose stimulus. However, this existed link of visfatin with obesity and glucose metabolism is still to be explored and debatable.

Aim and Objectives: : In this study we aimed to find out the correlation between visfatin and selected anthropometric and biochemical parameters in non-diabetic subjects with type II diabetic parents and with non-diabetic parents.

Methods: This cross-sectional analytic study was conducted at the Diabetes clinic of Lahore General Hospital (LGH) and department of Physiology, Post Graduate Medical Institute, Lahore in 2018. It comprised of 40 non-diabetic adult offspring of non-diabetic parents (group I) aged 30-50 years and 40 age and sex matched non-diabetic adult offspring of type II diabetic parents (group II). Blood pressure, BMI and waist hip ratios, fasting levels of serum visfatin, insulin and glucose were measured and indices of insulin resistance (HOMA-IR), sensitivity (HOMA-%S) and beta cell function (HOMA-%β) were calculated.

Results: Serum visfatin did not correlate with any of the anthropometric and glycemic parameters assessed in group I and II. However, a statistically significant negative correlation was observed between serum visfatin and BMI, waist circumference, waist hip ratio and positive with insulin sensitivity index (HOMA-%S) in combined analysis of female non-diabetic subjects.

Conclusions: Visfatin secretion reduces with increasing obesity in non-diabetic female subjects and plays a contributory role in the development of insulin resistance.

PP – 23

Prevalence of Digital Eye Strain (DES) among the Video Gaming Community of Pakistan

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Background: Digital Eye Strain (DES) is a complex of vision-related issues, that outcomes from extended screen time, and seems to increment with the increasing gaming hours. Our study aims to investigate the prevalence of DES in the gaming community of Pakistan and to see which device (PC, handhelds, TV) users are mostly affected.

Methods: A cross sectional study was carried out after ethical approval from April 2020 to July 2020 using a validated structured Google questionnaire. 461 forms were selected that fulfilled the criteria. IBM SPSS 25 was used for data entry and analysis. P-value less than 0.05 was taken significant

Results: Results showed that mean gaming hours increased from 6.6 hours/week to 12.5 hours/week as lockdown started. Tired eyes (50.2%) was the most prevalent DES symptom, and Neck and/or shoulder pain (18.3%) was found to be the most distressing. 62.1% of the people were relieved of their DES symptoms if gaming hours were reduced. Among the affected users, primarily, 38.6% were PC gamers followed by 28.7% mobile phone gamers.

Conclusions: There was a direct relationship found between increase in gaming hours and DES. It is important to recognize these signs as possible functional disorders to avoid erroneous diagnostic and therapeutic interventions.

PP – 24

Evaluation of Reproductive Toxicity Potential of Carica Papaya Linn. Seed Extract

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The undertaken study was conducted to investigate dose related reproductive toxicity potential of aqueous extract of Carica Papaya seed on female Albino Wistar rats in order to make sure if the consumption of these seeds are safe. Animals were categorized into control untreated, group I, II and III treated with doses 1000, 1500 and 2000 mg/kg body weight respectively. The results of this study depicted that there was non-significant (P> 0.05) changes in the body weights in control compared with treated groups whereas the fertility test, anogenital distance, number of pups born and crown rump length were not significantly affected in control versus treated groups. The histology of reproductive organs such as ovaries and testes also remained intact with no signs of inflammation. Conclusively, the study supports the fact that at selected doses papaya seeds are a safe food condiment for they did not cause any signs of reproductive toxicity or infertility.

Key words: Carica Papaya, Anogential Distance, fertility test, Crown Rump length,

PP – 25

Title of abstract: Impending role of lipid peroxidation products in the development of oral submucousal fibrosis

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Background: Oral submucous fibrosis (OSMF) is premalignant condition which has 7-30% chances to transform into malignancy. Factors which cause OSMF are areca nut, nutritional deficiency and genetics. Isoprostane, 4Hydroxynonenal (4HNE) and 8-hydroxy2-deoxyguanosine (8-OHdG) levels are raised due to oxidative DNA and lipid damage. To investigate the differential expression of lipid peroxidation byproducts such as MDA, 4HNE, 8-OHdG and Isoprostane levels are measured in the development of OSMF.

Materials and Methods: The role of hs-CRP, 4HNE, Isoprostane, 8-OHdG as well as oxidative and antioxidant markers were assessed among 50 control and 50 cases serum samples via different lab tests and ELIZA kits. The results were analyzed by independent t-test.

Results: The serum hs-CRP level was pragmatic in the OSMF cases. The mean MDA level, 4-HNE, Isoprostane and 8-OHdG indicating DNA damage were recorded as significantly increased in OSMF. The decrease in the levels of Superoxide dismutase, Catalase, Glutathione, Glutathione peroxidase, vitamins A, C, D and E were significantly decreased in OSMF cases as compared to healthy ones.

Conclusions: It is concluded that oral submucosal fibrosis may be predicted by elevation of certain oxidative stress markers (MDA, 4HNE,8-OHdG, isoprostane, Hs-CRP) and depression of certain antioxidants (SOD, CAT, GSH,GSH-Px, Vit A, Vit C, Vit E and Vitamin D)

Key words: OSMF, Lipid peroxidation, 8-OHdG, 4HNE, Isoprostane, Hs-CRP

PP – 26

The purpose of this study is to measure the prevalence of Pre menstrual syndrome (PMS) levels among female population of Pakistan, to check the association of PMS with depression, anxiety and stress and to get a comparative analysis of PMS symptoms between medical professionals, non medical professionals, working and non working females.

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Background: The purpose of this study is to measure the prevalence of Pre menstrual syndrome (PMS) levels among female population of Pakistan, to check the association of PMS with depression, anxiety and stress and to get a comparative analysis of PMS symptoms between medical professionals, non medical professionals, working and non working females.

Methods: A cross sectional study was conducted through online google forms and distributed through snow ball sampling technique. Questionnaire employed used Shortened pre menstrual assessment forms (SPAF) to measure the levels of PMS, along with Depression, anxiety and stress scale (DASS) to measure the levels and form any possible association. The inclusion criterion was female population in the reproductive age group, having menstrual cycles regularly. Those having diagnosed psychological problem, taking contraceptive pills or pregnant were excluded. Sample size was 434 calculated by rao software. Analysis was done using SPSS version. 25.0, IBM. Student's t- test for independent sample was used, to compare mean of quantitative variables.

Results: The majority of female students have a mild level of PMS 58.3%, and only 1.8% has severe PMS and 39.9% have moderate PMS. Notably, 53.2% of the students have mild anxiety while 39.4% and 7.4% have moderate and severe depression, anxiety and stress respectively. The results show a positive correlation between PMS and anxiety, depression, and stress. Depression and stress scores vary significantly between medical and non-medical students.

Conclusions: In Pakistan, females often find themselves neglected in terms of mental and physical health as well as face inequality in occupational areas. Similarly, PMS, being a disabling condition is also poorly researched on and women are forced to hide emotions and tears. This study therefore, aims to help women identify their symptoms and be more aware in terms of its management, which will eventually help them to improve their quality of life academically and in the working field.

Key words: Medical students, Pakistan, depression, pre menstrual syndrome, stress, anxiety

PP – 27

Differential Expression and Specificity of MMP-9, Malondialdehyde (MDA) and 8 Hydroxy Guanosine (Sochdg) in newly diagnosed Schizophrenics

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Background: Impairment in perception, cognition and avolition resulting in a triad of positive, negative and cognitive symptoms significant in schizophrenics. Oxidative stress is due to free oxygen radicals like Reactive oxygen species which are formed when oxygen reacts with lipids and nucleic acid. To investigate the differential expression and specificity of matrix metalloprotein 9, malondialdehyde (MDA), 8 Hydroxy2 deoxy guanosine (8-OHdG) in schizophrenic patients.

Materials and Methods: The role of MMP-9, MDA and 8-OHdG as well as oxidative and antioxidant markers were assessed among 50 patients and 20 control blood samples via different lab tests and ELIZA kits. The results were analyzed by independent t-test

Results: The MMP 9 level was pragmatic in the schizophrenic patients. The mean MDA level and 8-OHdG indicating DNA damage were recorded as significantly increased in schizophrenic patients. The decrease in the levels of Superoxide dismutase, Catalase, Glutathione, vitamin D were significantly decreased in schizophrenic patients as compared to healthy controls

Conclusions: It is concluded that increased oxidative biomarkers (MDA, 8-OHdG,isoprostane and 4-HNE), nitric oxide is associated with schizophrenic patients and they are not detoxified by enzymatic and non-enzymatic antioxidants SOD and CAT GSH, Vitamin D as compared to control.

Key words: Schizophrenia, Lipid peroxidation, 8-OHdG,4HNE, Isoprostane, MMP-9

PP – 1

Psychosocial determinants of adolescents impacts cognitive functions; a Sri Lankan study

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Background: Western studies have shown that exposure to stress impacts cognitive development in adolescents. However, the impact of stress on cognitive development amongst Sri Lanka adolescents is not known.

Methods: Descriptive cross-sectional study was conducted among adolescents of 14-16 years of age (n=331) in Colombo district, Sri Lanka. Cognitive functions were assessed using Full Scale Intelligence Quotient (FSIQ), which was computed using relevant subtests of Wechsler Intelligence Scale for Children (WISC V). Psychosocial adversities were assessed using Adolescent Stress Questionnaire (ASQ).

Results: Present study comprised of 54.1% (n=179) males. Total ASQ score was significantly negatively correlation with FSIQ in adolescents ($r = -0.114$, $p<0.05$). The stress of romantic relationship ($r = -0.185$) and stress of financial pressure ($r = -0.250$) have significant negative correlation with FSIQ in female adolescents ($p<0.05$). The stress of emerging adult responsibility ($r = -0.182$) and stress of financial pressure ($r = -0.172$) have significant negative correlation with FSIQ in male adolescents ($p<0.05$).

Conclusions: Stress of emerging adult responsibilities and financial pressure is negatively impacting on cognitive function development amongst this group. This needs to be addressed.

Key words: cognitive functions, psychosocial adversities, stress, adolescents

PP – 2

Effectiveness of Peer Assisted Learning for medical undergraduates

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Background: Peer Assisted Learning (PAL), is defined as a formal relationship in which people who are not professional teachers help others to learn, and learn themselves by teaching. PAL as a method of learning during undergraduate medical studies has been in practice for many generations.

Methods: An experimental non-randomized cohort study was conducted to assess the effectiveness of the PAL method in teaching medical undergraduates. The method was applied to the students who were underperforming in the mid and end semester examinations of the first batch of students, Faculty of Medicine, Wayamba University of Sri Lanka. Recently passed out medical graduates were enrolled as near peer teachers. Students' improvement in the examination was analysed.

Results and conclusion: A group of 16 students who failed the examination was included into the exposed group and another group of randomly selected 16 students of the same batch who passed the same examination was included into the control group. Improvement of the exposed group (mean = -4.76, SD±3.02) was highly significant ($p = 0.028$) than the improvement of the control group (mean = -7.21, SD±2.07). In conclusion, PAL is an effective method of teaching in medical undergraduate course.

PP – 3

Effect of pulmonary rehabilitation in COPD patients in a low resource setting in Jaffna, Sri Lanka

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Background: Pulmonary rehabilitation (PR) is a cost benefit management in the care of patients with Chronic Obstructive Pulmonary Disease (COPD). This study aimed to assess the effect of PR combined with pharmacotherapy in COPD patients in a low resource setting in Sri Lanka.

Methods: A non- randomized control trial was carried out among COPD patients in Jaffna Teaching Hospital. Baseline scores of Medical Research Council (MRC), COPD Assessment Test (CAT) and Clinical COPD Questionnaire (CCQ) were obtained. Exercise capacity was assessed by six minute walk test (SMWT) and incremental shuttle walk test (ISWT). Study group participants (n=20) received a supervised PR program consisted of aerobic and strength training exercises and patient education sessions conducted twice a week for six weeks in addition to pharmacotherapy given to control group participants (n=20). All outcomes were re-assessed at the end of 6 weeks in both groups.

Results: At baseline MRC, CAT and CCQ scores and distances walked during ISWT and SMWT were statistically ($p>0.05$) didn't differ between study and control group participants. Intervention to study group participants showed statistically significant ($p<0.05$) improvements in MRC (1.5±0.8), CAT (11.1±5.3), CCQ (1.4±0.7), ISWT (42.00±41.37 m) and SMWT (50.3(22.09-68.96) m). Control group COPD patients, showed no improvement in any of these parameters at the post assessment.

Conclusions: The PR program improved the clinical symptoms and exercise capacity, of COPD patients. Thus it can be easily practiced even in low resource settings.

PP – 4

Title: Cardiovascular autonomic neuropathy and diabetic peripheral neuropathy among a periurban type 2 diabetic population in Colombo district, Sri Lanka

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Background: Cardiovascular autonomic neuropathy (CAN) is a serious complication of diabetes mellitus. The severity of CAN amongst patients with type 2 diabetes mellitus (T2DM) is not known. Therefore, this study aimed to determine the frequency of CAN and diabetic peripheral neuropathy (DPN) among a periurban T2DM population and to determine their glycemic control.

Methods: A descriptive cross-sectional study was conducted using systematic random sampling for 160 T2DM patients attending selected community clinics in Colombo District. A questionnaire was used to obtain baseline data. CAN was assessed using battery of tests including Deep breathing test (DBT), Valsalva maneuver, Lying to standing test, Cold pressor test and Handgrip test. DPN was assessed by Michigan Neuropathy Screening Instrument (MNSI). Glycemic control was determined by the HbA1c of venous blood. A diagnosis of CAN was confirmed with two of the autonomic function tests being positive.

Results: Among the patients 57% were female. Mean HbA1c value was 9.06 + 6.54. CAN was detected in 70%. DPN was detected in 48% while 36% had both CAN and DPN. According to DBT values 79% found with abnormal ΔHR while 91% with abnormal E:I ratio. Valsalva ratio was abnormal in 29%. Among lying to standing test parameters, abnormal fall of systolic blood pressure was detected only in 1% while 5.2% had abnormal 30:15 ratio. Abnormal results for cold pressor test and handgrip test were detected in 54.5% and 41% respectively. Poor glycemic control was detected in 70.2%. E:I ratio was significantly different between glycemic controlled and uncontrolled groups ($p<0.05$).

Conclusions: High frequency of CAN results indicate that cardiac autonomic dysfunctions are common among T2DM patients with poor glycemic control which needs to be urgently addressed.

PP – 5

Comparison of prevalence of osteoporosis and the association between bone mineral density and selected risk factors among pre-menopausal and post-menopausal women attending a health camp in urban Sri Lanka

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Background: Bone mineral density (BMD) decreases with oestrogen depletion associated with menopause, leading to osteoporosis-related morbidity and mortality in postmenopausal women.

Aim and Objectives: To compare the prevalence of osteoporosis and the association between BMD and selected risk factors among pre-menopausal and post-menopausal women attending a health camp.

Methods: Osteoporosis screening was conducted at a health camp held in base hospital Panadura, Western Province. Participants included health staff and lay women aged 27-81 years residing in Panadura. Data was collected using an interviewer-administered questionnaire by trained staff, and measurement of weight and height. Heel bone mass density was obtained by trained technicians using Achilles EXPII bone ultrasonometer.

Results: 305 women were screened. The mean (+/-SD) age was 51.42(±9.33) years. Around fifty-four percent (54.1%, n=165) of women were postmenopausal. The mean (+/-SD) age at menopause was 48.17(±4.20) years. Mean (+/-SD) T score in pre and post-menopausal women were -0.46 (±0.96) and -1.22 (±0.85) respectively. The prevalence of osteoporosis and osteopenia were 1.4% and 24.3% in premenopausal women and 3.0% and 59.4% in postmenopausal women respectively. Age, age at menopause, parity, physical exercise, height, highest level of education, occupation, monthly income, previous fractures, parent fractured, current smoking, glucocorticoids, rheumatoid arthritis, secondary osteoporosis, alcohol consumption and family history showed no association with BMD ($p>0.05$)whereas weight ($p<0.05$, $r = +0.223$) and BMI ($p<0.05$, $r = +0.262$) showed a significant association with BMD in pre-menopausal women. In post-menopausal women, only the age showed a negative medium ($p<0.05$, $r = -0.208$) association with BMD

Conclusions: In this group of urban pre and postmenopausal women, the prevalence of osteoporosis was low. BMD in pre-menopausal women showed a significant positive association with weight and BMI whereas only age had a significant negative association with BMD in post-menopausal women.

Key words: Osteoporosis, osteopenia, premenopausal, postmenopausal, bone mineral density, risk factor

PP – 6

Post-stroke homecare skills of family-caregivers of dependent stroke survivors on care related to Activities of Daily Living, a study from Colombo, Sri Lanka

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Background: Stroke is a sudden onset event causing long-term disabilities that directly affect Activities of Daily Living (ADL). In Sri Lanka, post stroke homecare is mostly facilitated by the family-caregivers of stroke survivors. Therefore, it is essential to achieve a satisfactory level of caregiving skills related to ADL by the family-caregivers. The objective of this study was to determine the family-caregiver skills related to ADL of dependent stroke survivors in Colombo area.

Methods: A descriptive cross-sectional study was conducted on caregiving skills related to ADL while caring for dependent stroke survivors. Family caregivers were selected from stroke patients with a Barthel index score < 60, Subjects were selected from two teaching hospitals and a base hospital in Colombo. A questionnaire was administered to family-caregivers to assess the perceived skills related to ADL and a validated observational checklist was used to observe the care provided. The observations were conducted by two independent evaluators to minimize subjectivity. Observed skills were scored out of 100.

Results: There were 135(54%) males among 250 selected family caregivers. Mean age of the subjects was 44.7 years. 121(48.4%) were educated up to GCE ordinary level. 117(46.8%) did not have previous experience as a family caregiver. Questionnaire was administered to all the subjects and among them, 55 were randomly observed for caregiving tasks related to ADL using observational checklist. There was a significant positive relationship between the level of skills and the educational qualifications (p=0.008). Poor performance was observed among 32 of the 55 (58.2%) family caregivers, and 160 (64%) subjects possessed unsatisfactory skills.

Conclusions: The findings suggest that the level of skills of family care givers is not satisfactory. A structured training programme is essential to train these caregivers before the patient is discharged from hospital to achieve a satisfactory level of care in ADL.

PP – 7

Students assessment; pass or fail for the teachers in the system of assessment

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One of the key elements of the successful functioning of an educational institution is the conduct of examinations according to accepted norms, rules and regulations in a transparent manner and release of results on time. Furthermore, different modes of assessments used should be able to accurately grade the students based on the expected outcomes of the course.

Setting question papers, marking answer scripts and processing marks are three important stages of the assessment process. The meticulous planning of all three stages is essential for accurate estimation of students' achievements.

Accurate assessment of students' attainment of learning outcomes, confidentiality, accountability, transparency, compliance with by-laws and avoiding conflicts of interest are the key principles to be considered in planning of an assessment. Setting the mechanism in motion at the correct time is an important responsibility of the administration and the academic head.

Large failure rates in an examination may expose the weaknesses in the students as well as the weaknesses in the curriculum, delivery of teaching-learning process or the evaluation process. Particularly in the rapidly advancing fields of medicine and related subjects, it is important that academics strive hard to incorporate new developments in the field as well as new developments in the medical education and assessment techniques into their teaching-learning process. As academics we shall not miss the indirect message meant for us in the result sheets of students; success or failure of academics and academic programme.

Photo Gallery


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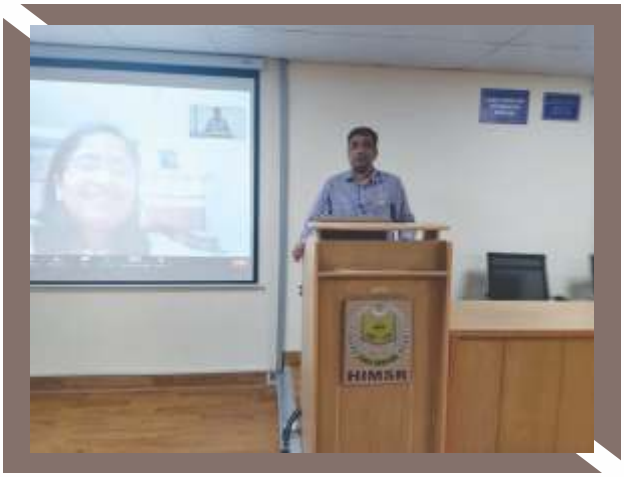
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Thank You
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