CONFERENCE

4th Biennial Conference of South Asian Association of Physiologists (SAAP)

&

3rd National Convention of Bangladesh Society of Physiologists (BSP)

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5 - 7 December 2014

Shaheed Dr. Milon Hall
Bangabandhu Sheikh Mujib Medical University (BSMMU)
Dhaka, Bangladesh

Advancement of Physiology from Research to Clinical Practice

Organized by:

BANGLADESH SOCIETY OF PHYSIOLOGISTS (BSP)

4th Biennial Conference of South Asian Association of Physiologists (SAAP)
&
3rd National Convention of Bangladesh Society of Physiologists (BSP)

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Message

As the 4th Biennial conference of the South Asian Association of Physiologists is drawing closer, it is with delight that I write this message. We join hands with Physiologists world over in promoting the discipline of Physiology for the well being of mankind. In this context it is timely that the organising committee has come up with an interesting theme for the upcoming conference "Advancement of Physiology from Research to Clinical practice" to be held in Dhaka from the 5th to the 7th of December 2014.

Under the leadership of Professor Noorzahan Begum and the hard work of the organising committee we look forward to an academically stimulating scientific program. The preconference workshop on promotion of Neuroscience through an integrated approach will be a highlight and an excellent opportunity for researchers and educators to update their knowledge and skills. Renowned neuroscientists are invited to share their expertise in teaching and conducting research in neuroscience.

I believe that the participants of the 4th SAAP conference will have a unique experience in listening to and meeting with experts and researchers on diverse topics. The interactive symposia, free paper sessions and poster presentations will be an excellent platform for the young scientists to discuss their research and to receive feedback. It is by sharing the scientific work that we are able to contribute to the development and consolidation of knowledge towards on the mechanisms of body function, dysfunction and its treatment.

It is expected that the attendees of the SAAP-4 conference will enjoy the warm hospitality of our colleagues of Bangladesh Physiological Society and take back pleasant memories of visiting a city enriched with history and culture.

I wish the SAAP-4 conference every success and looking forward to meet you in Dhaka.

Sharaine Fernando
President
South Asian Association of Physiologists
2012-2014

Message

South Asian Association of Physiologists (SAAP) being the pioneer organization in terms of mobilizing physiology community in South Asia takes the pride in organizing its 4th biennial conference in Dhaka. Thanks to motivation and consistent efforts of SAAP community that growing stature of SAAP is now being more and more recognized. Beside the biennial scientific conference pre- and post- conference workshops are also now well received and supported by leading scientific bodies.

SAAP recognizes that teaching as a human development tool is as old as human civilization. It is one of the most fascinating challenge, involving perpetual un-foldment of ever newer intricacies in transmitting knowledge and wisdom through evolution of suitable pedagogy. It demands more from faculty than merely delivering lectures and communicating technical information mechanically through convention method of teaching. The intricacies involved are turning to be more and more challenging.

Organizers of the conference deserve full appreciation for their high level of interest in putting together exciting scientific programmes and engaging renowned speakers from world over and attracting a large number of young audience all across South Asia leading to development of new friendships and collaborations.

Arif Siddiqui PhD
Secretary General
SAAP
Associate Dean and Professor of Physiology
Riphah International University
Islamabad, Pakistan

Message

Any medical conference irrespective of its magnitude gives us an opportunity to discover something new. I am delighted to know that the Bangladesh Society of Physiologists (BSP) is going to organize the 4th Biennial Conference of the South Asian Association of Physiologists (SAAP) along with the 3rd National Convention of the society from 5th to 7th December, 2014. This is indeed a great initiative taken by the society.

This sort of conferences enables the participants to exchange advancements in scientific knowledge and skills, and allows medical students and trainees to update their knowledge of medical science. I believe this conference will be beneficial for physiologists, other fields of basic medical science as well as clinicians of this region.

I congratulate all the participants and wish a successful completion of this conference.

Professor Pran Gopal Dutta
Vice-Chancellor
Bangabandhu Sheikh Mujib Medical University
Dhaka

Message

I am highly pleased to know that Bangladesh Society of Physiologists is going to organize 4th Biennial conference of South Asian Association of Physiologists (SAAP) and 3rd National Convention of Bangladesh Society of Physiologists (BSP) on 5-7 December 2014. A pre-conference workshop on "promotion of neuroscience through integrated approach" as a part of SAAP-4 will also be held on 5-6 December 2014 to develop and promote co-operation in all matters related to physiology education and research for the advancement of neurosciences in South Asia.

It deserves praise and congratulations for their great effort to arrange such conference.

Medical science is continuously developing and changing due to ongoing research work. This conference will create an opportunity to exchange knowledge and technology with participant renowned Physiologists of home and abroad.

I wish a grand success of this conference.

Professor M. Iqbal Arslan
Dean
Faculty of Basic Medical Science and Paraclinical Science
Bangabandhu Sheikh Mujib Medical University
Dhaka

Message

I am highly pleased to know that Bangladesh Society of Physiologists is going to organize 4th Biennial conference of South Asian Association of Physiologists (SAAP) and 3rd National Convention of Bangladesh Society of Physiologists (BSP) on 5-7 December 2014. and Pre Conference Workshop on 5-6 December 2014. Such kind of scientific conference will provide good means to knowledge and professional skill.

Bangladesh society of Physiologist is a professional body dedicated for the development of Physiology and the Physiologists. This conference is a strong step to fulfill their goal. I congratulate the organizer for the efforts from the bottom of my heart.

I wish the conference crowned with success.

Professor Gopal Chandra Sarker
Professor
Department of Physiology
Barind Medical College, Rajshahi

Message

I am highly pleased to know that Bangladesh Society of Physiologists is going to organize 4th Biennial conference of South Asian Association of Physiologists (SAAP) and 3rd National Convention of Bangladesh Society of Physiologists (BSP) on 5-7 December 2014 and Pre Conference Workshop on "promotion of neuroscience through integrated approach" on 5-6 December 2014. I congratulate the organizers of this conference for their effort to make the physiologists familiar with modern and advanced knowledge. I believe this conference will be worth full with the presence of many experienced and eminent physiologists as well as new physiologists from country and abroad. This is inevitably an opportunity to exchange experience, knowledge and technology among the participants. So the participants can improve their expertise in international standard. I wish this conference will be worth full from all aspects.

Prof. ASM Ziaul Haque
Professor
Department of Physiology
Uttara Women's Medical College, Dhaka

Welcome Address

Welcome Address

Bismillahir Rahmanur Rahim.

The Honorable Chief Guest, the National Prof. M.R. Khan, Special Guest Prof. Pran Gopal Datta, the Honorable Vice Chancellor, Bangabandhu Sheikh Mujib Medical University, Guests of Honour Prof. Iqbal Arslan, Dean, Faculty of Basic Science & Paraclinical Science, Prof Gopal Chandra Sarker and Prof. Ziaul Haque, two Prof. of Physiology and my beloved members of Bangladesh Society of Physiologists (BSP).

Assalamulaikum and Good Evening.

It is a great privilege for me to welcome you all in this inaugural ceremony of South Asian Association of Physiologists (SAAP 4) and 3rd National Convention of BSP.

I also welcome every body who responded to our invitation in this inaugural ceremony ignoring their lots of preoccupation.

First of all, I welcome our Chief Guest National Prof. M.R. Khan, an eminent clinician, his presence highly inspired us in this graceful occasion.

I also welcome our Special Guest Prof. Pran Gopal Datta, Honourable Vice Chancellor Bangabandhu Sheikh Mujib Medical University. His presence has dignified this ceremony and his cooperation is highly acknowledged with thanks.

I convey my heartfelt thanks and gratitude to our Guest of Honour Prof. Iqbal Arslan, Dean, Faculty of Basic Science and Paraclinical Science, BSMMU and also our two learned and dedicated senior teacher of physiology, Prof. Gopal Chandra Sarker and Prof. A.S.M. Ziaul Haque.

Ladies and gentleman.

The month of December is related to our pride and sacrifice. I remember the martyrs of Indepence and pay homage and gratitude to those who sacrificed their lives during liberation war.

I remember with gratitude our past presidents and senior members of the association who led the organization to a respectable position. Some of them have passed away and I pray for their departed soul.

I also convey my thanks and gratitude to our foreign faculties and delegates who have come a long way to Bangladesh to grace this conference, their presence has made a special attraction for our

young physiologists. I hope exchange of views and ideas, sharing of experiences with them will benefit our young physiologists immensely.

Organizing committee has included scientific sessions of preconference workshop on neuroscience as well as conference with also some other programs like cultural events which are the reflection of our country. It is my privilege to thank all the plenary speakers, invited speakers and other speakers, their highly acknowledge speech may be helpful to make a successful conference.

I also thank some of our clinicians who extended their helping hands to make the conference successful. I really feel honoured for their contribution in this graceful occasion and makes our conference theme "Advancement of Physiology from Research to Clinical Practice" meaningful.

Generous contributions and cooperation of some of the pharmaceutical& nonpharmaceutical companies help a lot, I specially thanks them for their contributions.

Lastly, my heartiest thanks to all the members of BSP who take a lot of trouble to come from different corners of the country to attend the program. I welcome them most cordially.

Thank you ladies and gentleman, enjoy a happy and memorable day.

Prof. Dr. Noorzahan Begum
Chairperson, Organizing Committee
SAAP-4, Dhaka, Bangladesh.

Address of Chief Guest

Madam Chairperson, respected guests, learned participants, assalamualaikum & very good day to you all. I am grateful for being selected to deliver the speech as chief guest in this prestigious 4th Biennial conference of south Asian Association of Physiologists (SAAP) and the 3rd National Convention of Bangladesh Society of Physiologists (BSP) organized by Bangladesh Society of Physiologists (BSP). At the same time it is very encouraging that Bangladesh Society of Physiologists for the 1st time has been able to organize this sort of international programme here in Bangladesh.

This conference is a milestone because it has been able to bring the physiologists not only from the SAARC countries but also from other parts of the world. Indeed this big association of physiologists is endeavoring for the development of physiology as a discipline in the world. I am optimistic that this kind of association will help us to understand each other for the betterment of the subject.

I hope that this conference will open up a new window from which members of the society around the world will get ample opportunities to exchange their views and ideas among themselves for further upgrading the subject in the educational field and also in the field of research.

I wish this conference a grand success. Once again, my heartfelt thanks to the family of Physiology and to all participants to make this event a grand success.

National Prof. Dr. M R Khan

Address of President

Honorable Chief Guest, Special Guest, Respected Guest of Honour,

President, General Secretary, and Members of Executive Committee of South Asian Association of Physiologists, chairperson & members of Organizing Committee for SAAP IV Conference of host country, Bangladesh, resource personnel participants, all dignitaries speakers from international forum and physiologists present in this inaugural session of fourth Biennial Conference of South Asian Association of Physiologist held at Dhaka, Bangladesh.

Assalamu Alikum

It is a great pleasure on my part to preside over the inaugural session of the conference in this month of December 2014, early winter part of Bangladesh. We are thankful to all dignitaries, resource personnel, participants and physiologists who have joined in this conference from different SAARC country - India, Pakistan, Sri Lanka, Nepal and also from Bangladesh and from abroad. Conference and meetings of SAARC country delegates in the subject of Physiology is not only a simple get together but also it gives us a chance for friendly and sympathetic attitudes, presentation of scientific papers, discussions of present trends in teaching methodologies and curriculum development, evaluation & quality assurance in medical subjects including Physiology. Geographically SAARC countries are either neighbors or in closeness in their locations. Medical education, disease profile, culture, custom, and habits of societies of these countries have also similarities. So, it is justifiable that there may be exchange of views, meetings and presentations in scientific and research methods in medical subjects including physiology by holding seminars, symposium & conferences.

With sadness in my mind I would like to inform you that the eminent Physiologist in Bangladesh and President of Bangladesh Society of Physiologists, Prof. M A Hai expired on 5th February, this year. Let all of us pray for the peace of his departed soul. I am in confidence that you will enjoy the scientific sessions and the discussions and arrangements of the conference for the next two days. The organizing committee of this conference would try with their full capacity and humble hospitability to make the conference of SAAP IV a successful one. I hope and wish that at the end of the conference you will be back to your country with pleasant memories of SAAP IV conference held at Dhaka which is an age old historic city too.

Many thanks to you all for patience hearing of my speech.

Professor Mosharraf Hossain Molla
President
Bangladesh Society of Physiologists (BSP)

Address of Secretary General

It is a great honour for me to welcome you all in the 3rd national Convention and annual general meeting of Bangladesh Society of Physiologist (BSP).

I remember with gratitude our past presidents and senior members of BSP who led this organization to a respectable position. Some of them are passed away. I pray for their departed soul. I must recall the name of Prof. M.A. Hai, whose intense desire, inspiration and relentless effort led the society to a remarkable prestigious position.

History of Physiology is nearly a half century in our country. post graduation (M.Phil) in the field of Physiology has started its journey in the year 1967 at IPGM & R. Initially the teachers in Physiology were few hence a combined Society of Physiologist and Pharmacologist named .Bangladesh Physiological & Pharmacological Society (BPPS) was established in the year 1984. At present post graduate course in Physiology has been running by a number of institutes in Bangladesh. As a result higher degree holders in Physiology greatly increased. The Bangladesh Society of Physiologists (BSP) was thus founded on 30th November, 2005. The Society has now about 350 members from home & abroad. The goal of society is to promote advancement of knowledge related to Physiology and allied science. The responsibility and activities of the society is conducted by an exclusive committee.

At present there are more than 300 Physiologists, all are actively involved in teaching both in undergraduate and post graduate medical education in Bangladesh. They are also doing research in Physiology.

All the participants present in this conference are learned, dedicated sincere and research minded and actively involved in teaching, training and research works. I hope the conference will provide opportunity to exchange ideas, views and experience among the participants and they will be immensely benefited.

Physiology is mother subject of medical science and every branch of medical science of knowledge of Physiology is necessary. So, it is necessary to maintain a high standard and up to date knowledge of its teaching as well as research. There should be opportunity for frequent exchange of knowledge and ideas among different branches of Physiology and allied subjects through conference, seminars, symposium and work shops. Moreover Physiologists working as teachers and researchers should be sent to universities of research institute abroad for exchange of knowledge and technologies in teaching and research.

I like to express my heartiest thanks to all the members of BSP for their presence at this meeting and glorify this occasion. I would also like to acknowledge to all who rendered their support through sponsoring. I also express my gratitude to authority of BSMMU for allowing us to use their conference hall.

Finally I wish every success of 3rd National Convention and Annual general meeting of Physiologists . I request our members to uphold the prestige and honour of the society and make it as a prestigious institution

I am thankful to Almighty Allah for a successful completion of convention

Prof. Dr. Farida Adib Khanum
Secretary General

Bangladesh Society of Physiologists (BSP)

Vote of Thanks

It is my first and foremost duty to acknowledge the contribution of all concerns which has made this conference successful. On behalf of the conference organizers and Bangladesh Society of Physiologists I offer my heartiest thanks and gratitude to them.

It is my honor to felicitate honorable chief guest Prof. MR Khan ,National Professor and most respected pediatrician in Bangladesh, Special guest Prof. Pran Gopal Datta, Honorable Vice Chancellor of Bangabandhu Sheikh Mujib Medical University, Guests of Honor Prof Iqbal Arslan, Dean of the faculty of Basic Medical Science and Paraclinical Science of Bangabandhu Sheikh Mujib Medical University, Prof Gopal Chandra Sarker, Prof ASM Ziaul Hoque, two reputed teachers of Physiology in Bangladesh, President of South Asian Association of Physiologists Prof. Sharaine Fernando, Secretary General of this association Prof Arif Siddiqui, for their gracious presence and encouraging us to overcome all obstacles to organize this conference and up dating Physiology in Bangladesh.

I specially extend my thanks to all the participants and distinguished speakers of the workshop and conference from SAARC countries and other countries for bearing the trouble of a long distance travel and facing many hurdles to be present in the conference to make it successful.

I extend my gratitude to the administrative authority of Bangabandhu Sheikh Mujib Medical University for providing every possible means of support for smooth organization of this conference and also acknowledge the services of all people related to this event to take place.

At last, but not the least, I thank Professor Noorzahan Begum, Chairman of the organizing committee of this 4th SAAP conference and 3rd Annual convention of BSP, and her dynamic team, whose hard work made this conference possible.

Many thanks to all of you for patience hearing of my speech.

With best wishes to all of you, I hereby close my speech.

Professor Rokeya Begum
Chairperson
SAAP 4, Finance Sub-Committeee

Bangladesh Society of Physiologists

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2012-2014

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4th Biennial Conference of South Asian Association of Physiologists (SAAP)
&
3rd National Convention of Bangladesh Society of Physiologists (BSP)

Date: 5-7th December 2014

Venue: Bangabandhu Sheikh Mujib Medical University

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Prof. Nayeema Akhtar
Prof. Shelina Begum
Prof. Ruhul Amin

Prof. Md. Abdur Rahman
Memorial Award

Award Winner

Award Winner 2013

Md. Maheen Rahman

Name	:	Md. Maheen Rahman
Father's Name	:	Dr. Md. Mozibur Rahman
Mother's Name	:	Mrs. Mohsena Khatun
Date of Birth	:	6th December, 1993
Name of the Medical College	:	Sir Salimullah Medical College, Dhaka
Date of Admission	:	Dec, 2012
Date of Passing 1ST Professional Examination	:	July 2013
Position in 1st Professional Examination	.:	2nd Position
Marks obtained in Physiology (In %)	:	89.50%
Present Address	:	Flat# D4, 26 Mitali Road, Zigatola, Dhaka-1209
Permanent Address	:	Vill: Sarkar para, Post: Farazi Kandi P.S: Matlab Uttar, Dist: Chandpur
Religion	:	Islam
Nationality	:	Bangladeshi
Brother & Sister	:	Two Brothers
Marks obtained in O Level	:	G.P.A 5.00
Marks obtained in A Level	:	G.P.A 5.00

Award Winner 2012

Md. Muhaiminul Alam

Name	:	Md. Muhaiminul Alam
Father's Name	:	Dr. Md. Khurshid Alam.
Mother's Name	:	Syeda Dalia Hassan.
Date of Birth	:	12th June, 1991.
Name of the Medical College	:	Community Based medical College Bangladesh
Date of Admission	:	09-12-2010
Date of Passing 1 ST Professional Examination	:	July 2012
Position in 1ST Professional Examination	:	1St Position
Marks obtained in Physiology (In %)	:	90.25%
Present Address	:	H# 10, R#07, Sector# 03 Uttara, Dhaka.
Permanent Address	:	H# 10, R#07, Sector# 03 Uttara, Dhaka.
Religion	:	Islam
Nationality	:	Bangladeshi by Birth:
Brother & Sister	:	One younger Brother and Sister
Marks obtained in O Level	:	GRA- 5.00
Marks obtained in A Level	:	G.P.A- 4.30

Award Winner 2011

Urmita Datta

Name	: Urmita Datta
Father's Name	: Uttam Datta
Mother's Name	: Shikha Datta
Date of Birth	: 1st August, 1992
Name of Medical College	: Dhaka Medical College
Date of Admission	:
Date of Passing First Prof Exam	: July 2011
Position in First Prof Exam	: First
Marks Obtained in Physiology	: Honours Marks
Present Address	: 65 Shiddheswari Circular Road Dhaka 1217
Permanent Address	: Vill. & PO: Bag Anchra Bazar PS: Sharsha, Dist.: Jessore
Religion	: Hindu
Nationality	: Bangladeshi
Siblings	:
Marks Obtained in SSC	: GPA 5.00
Marks Obtained in HSC	: GPA 5.00

Award Winner 2010

Md. Imran Hossain

Name	:	Md. Imran Hossain
Father's Name	:	Md. Menhaz Uddin Mother's
Name	:	Mrs. Emily Begum
Date of Birth	:	25th September, 1991
Name of the Medical College	:	Sir Salimullah Medical College, Dhaka
Date of Admission	:	2009
Date of Passing 1ST Professional	:	July,2010
Position in 1 ST Professional Examination	:	1 St Position
Marks obtained in Physiology (In %)	:	86.75%
Present Address	:	App# 5A, H# 345, South Kafrul,Dhaka.
Permanent Address	:	Dudhgari, Nazirpur Hat, P.O: Gurodashpur, Nator.
Religion	:	Islam
Nationality	:	Bangladeshi
Brother & Sister	:	nil
Marks obtained in S.S.C.	:	G.P.A- 5.00
Marks obtained in H.S.C	:	G.P.A- 5.00

Award Winner 2009

Rafid Ahmed

Name	: Rafid Ahmed
Father's Name	:
Mother's Name	:
Date of Birth	:
Name of Medical College	: Dhaka Medical College
Date of Admission	:
Date of Passing First Prof Exam	: 2009
Position in First Prof Exam	: First
Marks Obtained in Physiology	: Honours Marks
Present Address	: 1125/1 East Shewrapara Kafrul, Mirpur, Dhaka 1216
Permanent Address	:
Religion	: Islam
Nationality	: Bangladeshi
Siblings	:
Marks Obtained in SSC	: GPA 5.00
Marks Obtained in HSC	: GPA 5.00

Award Winner 2008

Maimunah Mohammad Hemayet Uddin

Name	:	Maimunah Mohammad Hemayet Uddin
Father's Name	:	Mohammad Hemayet Uddin
Mother's Name	:	Mahbuba Mohammad
Date of Birth	:	
Name of Medical College	:	Dhaka Medical College
Date of Admission	:	
Date of Passing First Prof Exam	:	2008
Position in First Prof Exam	:	
Marks Obtained in Physiology	:	Honours Marks
Present Address	:	Dept. of Paediatrics Sheikh Khalifa Medical City
Permanent Address	:	
Religion	:	Islam
Nationality	:	Bangladeshi
Siblings	:	
Marks Obtained in O Levels	:	
Marks Obtained in A Levels	:	

SCIENTIFIC SESSIONS

Conference Day-1

December 6th 2014

8:00 AM	**Registration**	**Lobby between Shaheed Dr. Milon Hall & Milton Hall (BSMMU)**
9:00-9:30 AM	**SHAHEED DR. MILON HALL** ***Keynote Speech:*** Prof.Benedito H Machado(Brazil)"Hypertension, Hypoxia and the Secrets of the Respiratory Network"	**Chair:** Prof.Arif Siddiqui **Co-Chair:** Prof. Qazi Shamima Akhtar
9:30-10:00 AM	**MR Chowdhury Memorial Oration** **Speaker:** Prof. Saeed Semnanian (Iran) "Orexinergic Transmission in the Locus Coeruleus Nucleus Contributes to Tolerance and Physical Dependence to Morphine in Rats"	**Chair:** Prof. KM Fariduddin **Co-Chair:** Prof. Amina Khatun
10:00-10:30 AM	**Plenary 1** **Speaker:** Prof.Mohammad Aslam (Pakistan) "Modulation of Testicular Steroidogenesis"	**Chair:** Prof. Nadira Islam **Co-Chair:** Prof. Bishnu Hari Paudel
10:30 -10:50AM	**SHAHEED DR. MILON HALL** **Invited lect-1** ***Speaker:*** Prof. Amar K Chandra (India) "Indiscriminate Use of Iodized Salt and its Possible Impact in Health and Disease" ***Chair:*** *Prof.Benedito H. Machado* ***Co-Chair:*** *Prof. Mahfuzur Rahman*	**MILTON HALL** **Invited lect-2** ***Speaker:*** Prof. Jayashree Bhattacharjee (India) "Coronary Artery Disease Riskin Post-Menopausal Women" ***Chair:*** *Brig.Gen. Mosharrof Hossain* ***Co-Chair:*** *Prof. Somnath Gangopadhyay*
10:50-11:10 AM	**Invited lect-3** ***Speaker*** : Prof Emran Bin Yunus (Bangladesh) "Medical Education in Bangladesh: Past Present Future" ***Chair:*** *Prof.Robert G. Carroll* ***Co-Chair:*** *Prof. US Naima Begum*	**Invited Lec-4** ***Speaker:*** Prof. GK Pal (India) Effects of Yoga on Cardiovascular Risks Attributed by Sympathovagal Imbalance in Various Clinical Disorders ***Chair:*** *Prof. MA Bari* ***Co-Chair:*** *Prof. Prakash Chandra Dhara*
11:10-11:40 AM	**TEA BREAK**	
11:40-12:00 Noon	**Invited lect -5** ***Speaker:*** Prof.Hamid Javed Qureshi (Pakistan) "Physiology of Growth" ***Chair:*** *Prof. HR Ahmed* ***Co-Chair:*** *Prof. Majbun Ara*	**Invited lect-6** ***Speaker:*** Prof. TM Amatya (Nepal) "Crisis Management of Acute Mountain Sickness with Physiological Basis" ***Chair:*** *Prof. Ramesh Rajan* ***Co-Chair:*** *Prof. Rezina Akter*
12:00-1:00PM	**Free paper session-1** ***Cardiovascular & Respiratory System*** ***Chair:*** *Prof. Nayeema Akhter* ***Co-Chair:*** *Dr. Rita Khadka* 5 papers 12 min (10min+2 min) **OP 1- OP 5**	**Free paper session- 2** ***Reproductive System*** ***Chair:*** *Prof. Amar K Chandra* ***Co-Chair:*** *Prof. MM Moinuddin Ahmed* 5 papers 12 min (10min+2min) **OP 6 - OP 10**

1:00 -2:00PM	***LUNCH AND PRAYER & POSTER EVALUATION***	
2:00-2:20PM	**SHAHEED DR. MILON HALL** ***WORKSHOP***	**MILTON HALL** **Symposium : Ergonomics** **Theme :*Issues of ergonomics in South East Asian countries*** ***Chair:*** *Prof. Cheng Hwee Ming* ***Co-Chair:*** *Prof. Firoza Begum* ***Speakers:*** Prof. Prakas Chandra Dhara (India)" Intervention of Ergonomics for Improving Health and Efficiency of Women Involved in Agricultural Sector"
2:20-2:40 PM		**Prof. Paresh Chandra Ghosh,(India)** "Ergonomics for safety,health and productivity: Common issues for South East Asian countries"
2:40-3:00 PM		**Prof. Somnath Gangopadhyay (India)"** Development of work related musculoskeletal disorders among women workers of unorganized sectors with special reference to chikan embroidery workers of West Bengal"
3:00-3:20 PM		**Discussion**
3:20-3:40 PM		**Invited lec-7** ***Speaker:*** Prof. Pratima Chatterjee " Working Capacity of Female Athlets" ***Chair:*** Dr. Tharaka Dassanayake ***Co-Chair:*** Prof. Akhterun Nessa
3:40-5:05 PM	**Free paper session-3** ***Nervous system*** ***Chair:*** *Prof Edathil Vijayan* ***Co-Chair:*** *Prof. Mahmuda Begum* 7 papers 12 min (10min+2min) **OP 11-OP 17**	**Free paper session-4** ***Endocrine System*** ***Chair:*** *Prof. KK Deepak* ***Co-Chair:*** *Prof.Chandra Rani Sarker* 7 papers 12 min (10min +2min) **OP 18-OP 24**
5:05-5:35 PM	**TEA BREAK**	
5:35-6:35 PM		***SAAP Executive Council Meeting***
6:35-9:00 PM	***Cultural Show & Conference Dinner***	

Conference Day-2

7th December 2014

Time 9:00-9:30 AM	**SHAHEED DR. MILON HALL** **MA Hai Memorial Oration** ***Speaker:*** Prof. Liaquat Ali (Bangladesh) "Basic Defects of Diabetes in Bengali Population"	***Chair:*** *Prof. Sharaine Fernando* ***Co-Chair:*** *Prof. Shamima Begum*
9:30-10:00 AM	**Plenary 2** ***Speaker:*** Prof.Savithri Wimalasekara(Sri Lanka) "Health Effects of Sound and Noise Pollution"	***Chair:*** *Prof. Vajira Weerasinghe* ***Co-Chair:*** *Prof. Mohammad Newaz*

10:00-10:30 AM	**Plenary 3** ***Speaker:*** Prof.Kusal K Das (India) "Heavy Metal Toxicity, Hypoxia & VEGF Gene Expression"	***Chair****: Prof. Dewan Majid* ***Co-Chair:*** *Prof. Mohidur Rahman*
10:30-10:50 AM	**SHAHEED DR. MILON HALL** **Invited lect 8** ***Speaker:*** Prof. Shyamal Roy Choudhury (India) "Ethics in Biomedical Research: Roleof Professional Associations" ***Chair:*** *Prof. Saeed Semnanian* ***Co-Chair:*** *Prof. Rezina Akter*	**MILTON HALL** **Invited lect 9** ***Speaker***: Prof. Jahangir Kabir (Bangladesh)" Neurophysiology and Dysfunction of Lower Urinary Tract" ***Chair:*** *Prof. Shah Abdul Latif* ***Co-Chair****: Prof. Paresh Chandra Ghosh*
10:50-11:10 AM	**Invited lect 10** ***Speaker***: Prof. Ridwanur Rahman "Research Ethics" (Bangladesh) ***Chair:*** *Prof.Anwar Hossain* ***Co-Chair:*** *Prof. Shipra Shinha Roy*	**Invited lect 11** ***Speaker***: Prof.Dewan SA Majid (Bangladesh) "Regulation of Inflammatory Cytokines in the Kidney During High Salt Intake: Implications in Salt-Sensitive Hypertension" ***Chair****: Prof. MA Bari* ***Co-Chair:*** *Prof. Somenath Roy*
11:10-11:40 AM	**Tea Break**	
11:40-12:00 PM	**Shaheed Dr.Milon Hall** **Invited lect 12** ***Speaker:*** Prof. Sharaine Fernando(Sri Lanka) "The Role of Estrogen in Pathogenesis of Asthma" ***Chair:*** *Prof. Pratima Chatterjee* ***Co-Chair:*** *Prof. Ruhul Amin*	**Milton Hall** **Invited lect 13** ***Speaker:*** Prof. AHM Rowshon" Regional and Whole Gut Transit Time and its Measurements ***Chair:*** *Prof. Mosharraf Hossain Molla* ***Co-Chair:*** *Prof. Jesmin Ara Hoque*
12:00-12:20 PM	**Invited lect 14** ***Speaker***: Prof. HR Ahmed (Pakistan) "Modern Evolutionary Synthesis: Darwin's Modelling and Mechanisms" ***Chair:*** *Prof. Kusal K Das* ***Co-Chair****: Prof.Akhterun Nessa*	**Free paper session- 5** **12:00-1:00PM** ***Allied & Clinical Science*** ***Chair:*** *Prof. Emran Bin Yunus* ***Co-Chair:*** *Lt.Col. Sharmeen Sultana* 5 papers 12 min (10min+2min) **OP 25- OP 29**
12:20-12:40PM	**Invited Lect 15** ***Speaker:*** Prof. KK Deepak (India) "Social Responsibilities of Physiologists" ***Chair:*** *Prof. Gopal Chandra Sarker* ***Co-Chair:*** *Prof. Rezina Sultana*	
12:40-1:00PM	**Invited Lect 16** ***Speaker:*** Dr. Arun K Chakraborty (India) "Webscale in Biomedical and Bioinformatics" ***Chair:*** *Prof. Hamid Javed Qureshi* ***Co-Chair:*** *Prof. Golam Mahbub E Mostofa Chaudhury*	
1:00-2:00 PM	**Lunch prayer & Poster Evaluation**	
2:00-2:20 PM	**Invited lect 17** ***Speaker***: Prof. Mohammed Newaz (USA) "GPCR Signaling and the Regulation of Vascular Function" ***Chair:*** *Prof. Shelina Begum* ***Co-Chair:*** *Prof. Abdul Wakil*	**Symposium: Medical education** ***Chair:*** *Prof.Muhammad Aslam* ***Co-Chair:*** *Prof. Abida Ahmed* ***Speakers:***Prof. Hwee Ming Cheng (Malayasia) Homeostatic Teaching and Student Learning".

2:20-2:40PM	**Invited lect-18** ***Speaker:*** Dr. Rita Khadka (Nepal) "Cardiac and Vascular Autonomic Modulations and Baroreflex Sensitivity in Patients with Coronary Artery Disease" ***Chair:*** *Prof. Hossain Reza* ***Co-Chair:*** Dr. Arun K Chakraborty (India)	Prof. Bishnu Hari Paudel(Nepal) Addressing Student Learning Preferences: A Challenge and Need
2:40-3:00 PM	**Invited lect 19** ***Speaker:*** Somenath Roy (India) Mutation of Different Candidate Gene Causes Delayed Parasite Clearance and Malaria Treatment Failure after Artemisinin Combination Therapy ***Chair****: Prof. Savithri W. Wimalasekera* ***Co-chair****:Prof. Miah Mohammad Wadood Mustafa*	Dr. Sheilla Pinjani (Pakistan) Integrating Professionalism in Teaching and Learning
3:00 -3:20 PM	**Invited lect 20** ***Speaker:*** Dr. Mosharraf H. Sarker (Bangladesh) "Modulation of macrophase phagocytosis by probiotic bacteria in vitro" ***Chair:*** *Prof. Jafri Malin Abdullah* ***Co-Chair*** *Prof. Mahfuzur Rahman Khan*	**Discussion**
3:20-4:50 PM	**Free paper session-6** ***Renal System/Gastrointestinal system/Related areas*** ***Chair:****Prof. Shyamal Roy Choudhury* ***Co-Chair:*** *Prof. Jalaluddin Ahmed* 7 papers 12 min(10min+2min) **OP 30 -36**	**Free paper session-7** ***Exercise Physiology/Biotechnology/ Medical Informatics/Others*** ***Chair:*** *Prof. TM Amatya* ***Co-Chair:*** *Prof. Zahid Hassan* 7 papers 12 min (10min+2min) **OP 37- OP 43**
4:50 – 5:20 PM	***Tea break***	
5:20- 6:20 PM	**Valedictory session**	:Prof. Noorzahan Begum
6:20 - 7:20 PM	***SAAP General Meeting & Concluding session ("Dhaka Declaration"- outcome of Conference)***	
8:00-9:30 PM	***Fellowship Dinner for SAAP Delegates***	

Abstracts

Keynote Speech

Chair : *Prof. Arif Siddiqui*

Co-Chair : *Prof. Qazi Shamima Akhtar*

HYPERTENSION, HYPOXIA AND THE SECRETS OF THE RESPIRATORY NETWORK

Benedito H. Machado

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In addition to the essential role played by the neural mechanisms to provide the diaphragm and chest muscle contraction and relaxation essential for O2 and CO2 pulmonary exchanges, the respiratory neurons in the brainstem are precisely connected to the pre-sympathetic neurons in order to finely adjust the cardiac and vascular functions, accordingly with the requirements of each phase of the respiratory cycle. Recent experimental evidence point out that hypertensive states may suffer profound influence from changes in the neural respiratory network activity, which should be considered as a new important player among the several mechanisms underlying the genesis of neurogenic hypertension. Different experimental hypertensive models dependent on increase in sympathetic outflow are associated with important changes in the pattern of coupling between respiratory and sympathetic activities. In perspective, we may take in consideration that changes in the respiratory pattern can contribute to an increased sympathetic outflow to the cardiovascular system and consequently to hypertension. To evaluate this possibility we are performing electrophysiological recordings of respiratory and pre-sympathetic neurons in the ventral medulla of rats submitted to chronic intermittent hypoxia and our findings are indicating that the major changes are related to the electrophysiological properties of respiratory neurons, which may facilitate an increase in the frequency discharge of pre-sympathetic neurons, which intrinsic activity is not affected by intermittent hypoxia. Our data suggest that changes in the respiratory network might be one of the unrevealed secrets of the hypertension in rats submitted to the chronic intermittent hypoxia.

Supported by FAPESP and CNPQ.

Memorial Orations

MR CHOWDHURY MEMORIAL ORATION

Chair : *Prof. KM Fariduddin*

Co-Chair : *Prof. Amina Khatun*

OREXINERGIC TRANSMISSION IN THE LOCUS COERULEUS NUCLEUS CONTRIBUTES TO TOLERANCE AND PHYSICAL DEPENDENCE TO MORPHINE IN RATS

Saeed Semnanian, Hossein Mohammad pour Kargar, Yousuf Mousavi, Hakimeh Abdollahi, Masoumeh Ghaemi, Yadollah Ranjbar-Slamloo, Hossein Azizi

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Orexin is involved in morphine-induced physical dependence and withdrawal. The locus coeruleus (LC) nucleus receives dense orexinergic projections, and is shown to express orexin receptors type 1. LC is also a key brain region implicated in morphine tolerance and dependence. However the role of orexinergic transmission at the LC nucleus in morphine dependence and tolerance is unknown. We are studying the effect of orexin neuropeptide at the locus coeruleus nucleus in naloxone-induced morphine withdrawal syndrome and tolerance to the analgesic effect of morphine, using behavioral, extracellular and whole-cell patch clamp recording techniques in rats. The tail flick test using thermal nociceptive stimulation of the tail showed that central administration of orexin receptor type-1 antagonist SB-334867 inhibits the development of tolerance to antinociceptive effect of morphine. Using in vivo extracellular single unit recording, we found that i.c.v. injection of SB-334867 prevents the development of tolerance to morphine in locus coeruleus (LC) neurons. Moreover, our results indicated that intra LC microinjection of SB-334867 prior to each morphine injection or prior to naloxone administration reduces the severity of naloxone-induced morphine withdrawal symptoms. We also used whole-cell patch clamp recording in rat horizontal slices containing the locus coeruleus nucleus to examine the effect of orexin on synaptic transmission. The results showed that in vitro application of orexin-A increases LC spontaneous firing rate and paired-pulse ratio (PPR). It also decreases spontaneous excitatory postsynaptic currents (sEPSCs) frequency of LC neurons, but did not change sEPSCs amplitude. Our electrophysiological data indicate that orexin-A application decreased evoked excitatory postsynaptic currents (eEPSCs) and evoked inhibitory postsynaptic currents (eIPSCs) in LC neurons synapses. It is concluded that orexinergic transmission in the locus coeruleus nucleus might involve in the development of tolerance and physical dependence to morphine. Moreover, our results provide in vitro evidences for a critical role of orexin signaling in LC neurons. It can be deduced that these changes in excitatory synaptic transmission may be elicited by presynaptic rather than presynaptic mechanisms. **Keywords:** Locus Coeruleus, Orexin, Orexin receptor type-1, Morphine, Tolerance, Dependence, Tail flick test, whole-cell patch clamp recording, extracellular single unit recording.

MA HAI MEMORIAL ORATION

Chair : *Prof. Sharaine Fernando*

Co-Chair : *Brig. Gen. Mosharrof Hossain*

BASIC DEFECTS OF DIABETES IN BENGALI POPULATION

Liaquat Ali

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Insulin secretory defect and insulin resistance are known to be the two basic defects in diabetes mellitus (DM) which are present in various proportions in different types of diabetic and prediabetic states. Type 1 and Type 2 DM differ on the etological basis of these defects (with autommune mediated selective destruction of pancreatic B cells in TIDM) and it is still unsettled whether gestational diabetes mellitus (GDM) is a separate entity or a special variety of T2DM in pregnancy. There is no organized data on the incidence and prevalence of T1DM among Bangalee population. From clinical impression it seems that typical T1DM is rare (may be <1%) among these people. Epidemiological data related to T2DM are relatively better generated and it seems that around 6-7% of adult population suffer from this disorder. Present evidence suggest that both of these basic defects are present in the nonobese T2DM Bangalee subjects; however, pancreatic B cell dysfunction seems to be more prominent in these groups. Addition of confounding factors, like age and overweight/obesity, increases the relative importance of insulin resistance and it may even appear to be more dominant in some of these subgroups. The two basic defects also appear in different proportions in various subtypes of prediabetes. In impaired fasting glucose (IFG) only insulin secretory defect is present without any insulin resistance; on the other hand, insulin resistance is the only defect in impaired glucose tolerance (IGT) even when the effect of BMI is adjusted. In the combined (IFG-IGT) group both the defects are present. The natural history of the disorder from various prediabetic states to T2DM still needs to be clarified in this population. Although typical T1DM is rare in Bangalee population, it is known that DM develops at a relatively younger age among these people. Within this young diabetic group, a subgroup shows some clinical, biochemical, immunological and genetic characteristics of both T1 and T2DM varieties. In a small subset of the young diabetic subjects, the onset of the disorder is characterized by chronic pancreatitis and this group is termed as fibrocalculus pancreatic diabetes (FCPD). Although WHO and ADA Expert Committees have classified this group as a simple secondary diabetes, evidence in Bangalee population show that the relationship between exocrine and endocrine pancreatic damages are not so straightforward as in secondary diabetes. A mutation in the SPINKI gene (which is linked to the conversion of trypsinogen to trypsin) has been reported to be associated with chronic pancreatitis in FCPD and the tropical calcific pancreatitis (TCP) in this population. For GDM, again, there is not yet any representative population based data among the Bangalees. From hospital based studies it seems that around 10% of pregnant mothers develop GDM among these people. Present evidence show that insulin resistance is the major basic defect in GDM. A large proportion of T2DM mothers are first diagnosed during pregnancy (due to lack of proper antenatal care) and, by definition, they are termed as GDM. Available data indicate that presence of insulin secretory defect (present in preexisting T2DM) can be a demarcating factor from true GDM (who have primarily insulin resistance) among Bangalee mothers.

Plenary Lectures

PLENARY 1

Chair : *Prof. Nadira Islam*

Co-Chair : *Prof. Bishnu Hari Paudel*

MODULATION OF TESTICULAR STEROIDOGENESIS

Rabia Latif[1], Waqas Hameed[2], Ghulam Mustafa[3], **Muhammad Aslam[4]**

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Introduction: Some antihypertensive drugs, diabetes mellitus and stress have been shown to adversely affect testicular steroidogenesis and male fertility. **Objective:** The present study was designed to experimentally elucidate the effects on Amlodipine (a calcium channel blocker), Visfatin (an adipose tissue adipokine) and stress hormones (corticosterone, nor- epinephrine) on Leydig cell steroidogenesis and intracellular calcium in vitro. **Methods:** Leydig cells of Sprague-Dawley rats were isolated and purified by percoll. Cells were incubated for 3h with / without Amlodipine (in the presence / absence of LH, dbc CAMP, pregnenolone and 25-Hydroxycholesterol), Visfatin (in the presence / absence of LH and intracellular signaling blockers including PKC blocker, PKA blocker and Raf 1/Ras blocker) and Stress Hormones like Corticosterone and Nor- epinephrine (in the presence / absence of LH, alpha tocopherol and Ascorbic Acid). Cell culture extracts were stored at -80oC before analysis of testosterone by ELISA. Cytosolic calcium was measured in purified Leydig cells by fluorometric technique. **Results:** Amlodipine (A calcium channel blocker): Amlodipine reduced ($P < 0.05$) steroidogenesis and intracellular calcium in treated rats. The site of Amlodipine-induced steroidogenesis inhibition seems to be prior to the formation of pregnonolone at the level of StAR protein. (a) Visfatin (An adipokine) Visfatin increased testosterone production ($P<0.001$) from cultured Leydig cells in vitro model and operates through variety of enzymes, but especially through Ras / Raf / Kinase enzymes. (b) Stress Hormones (Corticosterone, nor-epinephrine): Both the Stress hormones reduced testicular steroidogenesis by their effects on intracellular calcium in vitro. However, anti-oxidants like ascorbic acid and alpha tocopherol prevented fall in testosterone and in malondialdehyde levels reducing oxidative stress. **Conclusion:** A calcium channel blocker (Amlodipine), Insulin-mimetic drug (Visfatin) and Stress hormones (corticosterone, nor-epinephrine modulate testicular steroidogenesis through intracellular calcium and kinase enzymes, besides other factors.

PLENARY 2

Chair : *Prof. Vajira Weerasinghe*
Co-Chair : *Prof. Mohammad Newaz*

HEALTH EFFECTS OF SOUND AND NOISE POLLUTION

Prof Savithri W. Wimalasekera
Consultant Clinical Physiologist and Head, Department of Physiology,Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda, Sri Lanka
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Noise, defined as 'unwanted sound', is now well recognised as an environmental stressor and a nuisance. It has been established that traffic noise alone is harmful to the health of almost every third person in the European Region. One fifth of Europeans are regularly exposed to high sound levels at night that could have a significant impact on their health. These alarming figures have made the World Health Organisation to adopt noise as a health hazard. Effects of noise on audition are well known. Exposure to continuous noise of 85-90 dB(A), over 40 working hours per week are known to cause hearing damage.Listening to loud sounds (at or above 85 dB(A) such as loud music) over an extended period is known to produce noise induced hearing loss (NIHL). The louder the sound, the shorter the time period before hearing damage occurs. NIHL is a direct result of irreversible changes in the sensory cells and other structures in the organ of Corti in the cochlea of the ear. As a result, the hair cells and the supporting cells disintegrate, and the nerve fibers that supply the hair cells too disappear. This results in a permanent threshold shift of hearing and an irreversible hearing loss at higher frequencies. Higher exposure particularly over a lifetime in industrial settings, can lead to a progressive loss of hearing, with an increase in the threshold of hearing sensitivity. However non-auditory effects of noise are defined as "all those effects on health and well-being, caused by exposure to noise, with the exclusion of effects on the hearing organ and the masking of auditory information". Traffic noise is recognised as one of the most important sources of environmental annoyance. Severe annoyance persistent over prolonged periods of time is known to cause distress. In order to immediately trigger protective reactions (fight/flight or defeat reactions) the information conveyed by noise is very often more relevant than the sound level. The sound and noise emissions are processed by central pathways which activate the neuro-endocrine systems directly or through the amygdala. The amygdala, is one of the first organs that get activated due to sound and has the ability to rapidly detect signals. The signal processing in the amygdala is linked with cortical, limbic and hypothalamic centers producing health effects. Noise can induce indirect stress effects such as disturbance in communication and conversation. Due to the above reasons, even during sleep, the noise from aeroplanes or heavy goods vehicles may be categorized by the brain as danger signals and induce release of stress hormones. Studies have reveled that the resting levels of urinary catecholamines (adrenaline and noradrenaline) were significantly higher in the noise-exposed children, indicating raised levels of stress amongst them. An increased cardiovascular risk is observed if the daytime immission level exceeds 65 dB(A). Exposure to noise causes physiological activation including increase in heart rate, blood pressure, peripheral vasoconstriction and thus increased peripheral vascular resistance. These changes further increase the risk for cardiovascular disease amongst the exposed. In accordance with the noise stress hypothesis; chronic stress hormone dysregulations, and an increase of established endogenous risk factors of ischaemic heart disease have been observed under long-term exposure to environmental noise. Therefore noise is

associated with an increased risk of myocardial infarction. Exposure to noise disturbs sleep proportionate to the amount of noise experienced in terms of an increased rate of changes in sleep stages and an increase in the number of awakenings. Noise exposure impairs performance in tasks such as reading. It may impair memory, reduce helping behaviour, increase aggression and reduce the processing of social cues. These adverse effects have an impact on the society. Noise exposed children are known to have deficits in sustained attention, visual attention, difficulty in concentrating, poorer auditory discrimination and speech perception. All above indicators emphasise the importance of reducing noise in the environment for the South Asian region. Studies on assessment of health effects on noise need to be conducted in the region to save our peoples from these preventable hazards.

PLENARY 3

Chair : *Prof. Dewan Majid*

Co-Chair : *Prof. Mohidur Rahman*

HEAVY METAL TOXICITY, HYPOXIA AND VEGF GENE EXPRESSION

Kusal K. Das

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The era of industrial revolution brought to forefront the use of metals in industrial machines to household usages. The WHO- Health Report on "reducing risk, promoting healthy life" identified as environment and occupational exposure to toxic metals as one of the major risk factors for increasing health burden across the world. Heavy-metal toxicity may be the host of other diseases which is hardly realized by general medical practitioners. While there are many ways to reduce the damage done by heavy metals and detoxify from heavy metals but further evaluation needed to explore the possible protective mechanism to fight against metal poisoning. Certain heavy metal causes oxidative stress by inducing the generation of reactive oxygen species (ROS), reducing the antioxidant defense system of cells via depleting glutathione. This interferes with some essential metal, inhibiting sulfhydryl, dependent enzyme or antioxidant enzymes activities and /or increasing susceptibility of cells to oxidative attack by altering membrane integrity and fatty acid composition. Consequently heavy metals may develop intracellular hypoxia and alter VEGF gene expression by increasing HIF-1 ? accumulation. Hypoxia inducible factor-1 ? (HIF-1 ?) is a key transcription factor required for expression of hypoxia-dependent genes In normoxic conditions. In the presence of Fe2+ and oxygen, HIF-1? is continuously degraded through the Von Hippel Lindau protein (pVHL)/Ubiquitin/Proteosome pathway. When oxygen becomes limiting, prolyl hydroxylase is inhibited and HIF-1? accumulates. After translocation and combination with the constitutive HIF- 1 ?, the transcription factor binds to hypoxic response element (HRE) sequences to up regulate a number of downstream genes such as VEGF etc. which provides adaptation against sustain hypoxia. It is evident that hypoxia up regulates NOS expression. As a result, NO production is increased. Chronic Hypoxia increases KLF6 and NF-?B and decreases KLF4, resulting in an increased expression of iNOS. This increase in iNOS leads to increase NO production that reacts with O2- to form ONOO-. Then peroxynitrite makes mitochondria swell up and release cytochrome. Various heavy metals cause oxidative stress by inducing the generation of reactive oxygen species (ROS), reducing the antioxidant defense system of cells via depleting glutathione, interfering with some essential metal, inhibiting sulfhydryl, dependent enzyme or antioxidant enzymes activities and /or increasing susceptibility of cells to oxidative attack by altering membrane integrity and fatty acid composition. This heavy metals may develop intracellular hypoxia. This presentation analyzed the significant impact of sustained hypoxia in physiological system alone or along with simultaneous exposure of heavy metal and possible protective role of vitamin c as antioxidant in rats. The study clearly shows that exposure of chronic sustained hypoxia and heavy metal treatment either alone or in combination influence HIF-1?, and nitric oxide pathways. It is also observed that this alteration of this HIF-1? pathway influences expression of VEGF gene in rats. Possibly exposure to heavy metal like hypoxic

exposure activates the hypoxia-inducible pathway and facilitates selection of cells with increased transcriptional activity of hypoxia-inducible genes, which may be important in the heavy metal-induced alteration of cellular metabolic process. Heavy metals might affect oxygen sensing by either locking the sensor by directly inhibiting prolyl hydroxylases (PHD 1-3) or forming ROS and increase adaptability of HIF-1? in the cellular metabolic process reflected by alteration of serum hypoxia markers. Simultaneous treatment with vitamin c is found to be beneficial in all the hypoxia marker parameters evaluated. This increase in iNOS leads to increase NO production that reacts with O2- to form ONOO-. Then peroxynitrite makes mitochondria swell up and release cytochrome. Author reviews the role of two heavy metals (Ni & Pb) as environmental pollutant to regulate micro-environmental oxidative and nitrosative stress in the discussion.

Invited Lectures

INVITED LECTURE - 1

Chair : *Prof. Benedito H. Machado*

Co-Chair : *Prof. Mahfuzur Rahman*

INDISCRIMINATE USE OF IODIZED SALT AND ITS POSSIBLE IMPACT IN HEALTH AND DISEASE

Amar K Chandra

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Background: Iodine is an indispensable component of thyroid hormones. The consequences of iodine deficiency are goiter, hypothyroidism, cretinism, reproductive failure, childhood mortality including socio-economic retardation of the affected community collectively known as iodine deficiency disorders (IDDs). Conversely, ingestion of excessive iodine is associated with thyroid disorders but its effects on other systems not studied adequately. **Objectives:** To prevent IDDs, different countries have implemented universal salt iodization; in the iodine deficient regions peoples were benefited for the consumption of iodine through edible salt however, the impact of universal salt iodization in environmental iodine sufficient regions has not been explored adequately. In the present investigation the effect of excess iodine ingestion on different physiological systems has been investigated. **Methods:** We conducted iodine nutritional status along with thyroid functional status of the people in the environmental iodine sufficient areas who are further exposed to iodized salt for universal salt iodization. Simultaneously we conducted studies on the effects of excess iodine on thyroid, male and female reproductive system, neurophysiological and immune functions including the generation of stress in experimental animals using the standard biochemical and immunological protocols. **Results:** Based on epidemiological studies we found regular consumption of excess iodine enhance the prevalence of autoimmune disorders and impair reproductive functions of both male and female while our laboratory based investigations on experimental animals revealed that consumption of excess iodine inhibits the thyroid gland function, impairs reproductive functions, alters excitatibility of the different areas of brain, develops stress and suppress the immune system of the experimental animals. **Conclusion:** Excess iodine has various deleterious effects as it enhances the prevalence of thyroid disorders in humans, impair thyroid gland functions, reproduction of both the male and female, brain functions, develops stress and even suppresses immune functions in laboratory animals. The consequences of excess iodine are severe like iodine deficiency.

Key words: excess iodine, endemic goiter, autoimmune thyroid disorders, reproduction, immune function, environment

INVITED LECTURE - 2

Chair : *Brig. Gen. Mosharrof Hossain*

Co-Chair : *Prof. Somnath Gangopadhyay*

CORONARY ARTERY DISEASE RISK IN POST-MENOPAUSAL WOMEN

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Introduction: Cardiovascular disease is the leading cause of death among women in industrialized countries and accounts for more than 40% of all deaths among women on a global scale. Menopause, an estrogen deficient state, is known to increase the cardiovascular risk. The probability of a menopausal woman developing coronary artery disease (CAD) is 46% and 20% for stroke. There are several factors that regulate the development of CAD. Interaction of endothelium with blood platelets plays an important role in pathogenesis of CAD. Lipid changes accompanying menopause account for only few cases of CAD. Endothelium-dependent nitric oxide mediated vasodilatory mechanisms are also known to play a role in development of coronary artery disease. We have done several consecutive studies in the search of etiopathogenesis of CHD covering all the above mentioned factors, two studies are being presented below.

INVITED LECTURE - 3

Chair : *Prof. Robert G. Carroll*

Co-Chair : *Prof. US Naima Begum*

MEDICAL EDUCATION IN BANGLADESH: PAST PRESENT FUTURE

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Modern medical profession is an imported item in our land from western world and medical education as well. Over thousands of years of evolution and customization both the profession and the education have been put on a solid structure and function with three ever expanding horizon; science, art and philosophy. These horizons are anchored spanning on many boundaries that are history, geography, culture, customs, economy, beliefs, practices and many others. The bottom line of medical education is to produce medical professionals in whose custody the care seekers shall remain safe. Therefore, the profession and the education for producing the professionals are unique and not parallel to any thing similar. Around the world, the medical profession and professionals are marching forwards with newer knowledge production, dissemination and implementation in all horizons along with evidence based customizations and ritualization. The beginning of practice of modern western medicine began from 1764 for the colonialists in this subcontinent. The beginning of medical education was from 1835 with the establishment of Kolkata Medical College in undivided India. In the territory of Bangladesh, the beginning of medical practice was from 1854 with the establishment of Mitford Hospital and, medical education with Dhaka Medical College in 1946. The main aim of almost all of these endeavors was to serve the colonial interests. Since then many changes have been continuing shaping and reshaping the profession, practice and education. However, possibly none was or is on other than in empirical or ad hoc manner. On that context where do we stand? No doubt in a crossroad! The outcome, output and indicators of profession, practice and education are severely and progressively on downhill drive. 'If you don't know the road to where the road will lead to any where' was the experience of 'Alice of Alice-In-The-Wonderland'. This presentation is an assorted speaking-the-mind with an endeavor to get a picture by pick and place them in the vast canvas of past and present with looking forwards to the future to focus the Medical Education in Bangladesh.

INVITED LECTURE - 4

Chair : *Prof. MA Bari*

Co-Chair : *Prof. Prakash Dhara*

EFFECTS OF YOGA ON CARDIOVASCULAR RISKS ATTRIBUTED BY SYMPATHOVAGAL IMBALANCE IN VARIOUS CLINICAL DISORDERS

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Any factor that increases susceptibility of the individual to cardiovascular disease (CVD) is considered as a cardiovascular (CV) risk. CV risks could be physical, physiological, or psychosocial. There are many known CVD risk factors. Though few of them such as family history, age and gender are unmodifiable, many of them are modifiable. The modifiable CV risks include obesity, smoking, lack of physical activity, prehypertension, hypertension, dyslipidemia and atherogenic risk, insulin resistance, prediabetes, diabetes, retrograde inflammation, unhealthy diet, psychosocial stress and work stress. Diabetes, hypertension and CVD are more prevalent in Indian subcontinent and they account for 52 per cent of deaths and 38 per cent of disease burden as per WHO report on South East Asia Region (SEAR). Assessing a person's CV risk has become the accepted way to target the preventive management of subjects who are asymptomatic but at high risk of CVD. Physiological parameters of CV risks are assessed by spectral analysis of HRV, continuous BP variability by Finapres and color Doppler. The Framingham risk score (FRS) for CVD has evolved as a validated means for predicting CVD risk in asymptomatic patients. Risk is considered low if the FRS is less than 10%, moderate if FRS is between 10% to 19% and high if FRS is 20% or more. Metabolic syndrome is an important determinant of CV risk. Till date, no systematic study has been conducted from SEAR for assessment and prevention of CVD. Moreover, FRS often underestimates the CV risk in Asians, in younger patients and subjects with low-socioeconomic status. The concern for cost-effectiveness of CVD interventions in developing countries is growing. Presently, there is a bias towards pharmaceutical interventions in CVD control in both developed and developing nations. While the burden of CVD is alarming in countries of SEAR, future research should put greater emphasis on non-clinical interventions to reduce the economic burden of CVD control. In order to overcome this cost-effective burden in India, we propose Yoga therapy as intervention module in prevention of CVD risks. The basis of yoga in prevention of CVD and reduction in CV risks are derived from the fact that yoga attains holistic improvement of health through body (physical-physiological) - mind (psychological) homeostasis by primarily attaining sympathovagal balance. Irrespective of the etiology, sympathetic overactivity has been recognized as the main pathophysiologic mechanism in the genesis of CVD and metabolic syndrome. Sympathovagal imbalance owing to sympathetic overactivity and vagal withdrawal is reported to be the basis of many clinical disorders including CVD. Recently we have reported the contribution of vagal inhibition in the causation of CV risk. However, the role played by vagal withdrawal has been under-reported. Improvement of vagal tone is the key to achieve stable homeostasis through sympathovagal balance. Therefore, practice of yoga, especially pranayama that aims at improving vagal tone and reducing sympathetic activity appears to be promising in reducing the CV risks.

Key Words: Cardiac dysfunctions, LF-HF ratio, Cardiovascular risks, Sympathovagal imbalance, Vagal withdrawal, Yoga

INVITED LECTURE - 5

Chair : *Prof. HR Ahmed*

Co-Chair : *Prof. Majbun Ara*

PHYSIOLOGY OF GROWTH

Prof. Hamid Javed Qureshi (Pakistan)

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Growth is a complex phenomenon which is affected not only by growth hormone and somatomedins but also by insulin, thyroid hormones, androgens, estrogens and glucocorticoids. It is also affected by genetic and racial factors, and adequate nutrition. It is normally accompanied by a sequence of maturation changes and it involves protein synthesis and increase in length and size but not just an increase in weight, which could reflect formation of fat or retention of salt and water rather than growth. The growth process involves cell division and net protein synthesis throughout the body but a person's height is determined specifically by bone growth, particularly of the vertebral column and legs. Ordered, controlled growth is essential for development and maintenance of the normal human. In humans, two periods of rapid growth occurs, the first in infancy and second in late puberty. The first period of accelerated growth is partly a continuation of the fetal growth period, the second growth spurt at the time of puberty is due to growth hormone, androgens and estrogens. The subsequent cessation of growth is mainly due to closure of epiphyses in about 18 years, after ward further increase in height is not possible. This growth spurt occurs earlier in girls. Impaired nutrition including diseases such as chronic diarrheal states, psychological disturbances and hormonal derangement are important causes of growth failure. The most common endocrine deficiencies are of growth hormone, thyroid hormone and insulin. During infancy and childhood, malnutrition can interfere with both intellectual development and total body growth. A normal man requires only 20 essential organic compounds in addition to a source of calories and water. Eight amino acids, 11 vitamins and linoleic acid are essential. The most generalized deficiencies in humans are caloric malnutritcon (marasmus) and protein malnutrition (Kwashiorkor). These deficiencies are wide spread in underdeveloped countries and are more common in elderly, chronically ill and alcoholic persons in developed countries.

INVITED LECTURE - 6

Chair : *Prof. Ramesh Rajan*

Co-Chair : *Prof. Rezina Akter*

"CRISIS MANAGEMENT OF ACUTE MOUNTAIN SICKNESS WITH PHYSIOLOGICAL BASIS"

Dr. Tara Man Amatya

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Acute Mountain Sickness(AMS) is a common health problem in sojourners in high altitude usually at about 10,000 feet (3000 meters) and above.If appearance of AMS is ignored, some serious consequences like High Altitude Pulmonary Edema(HAPE) and High Altitude Cerebral Edema(HACE) may develop and may lead to death.Fortunately , AMS is a preventable illness if we know the cause and mechanism of development as well as if preventable measures are taken in time.So in this review of AMS such information of epidemiology, risk factors , pathophysiology, clinical features, preventive measures and steps of crisis management of AMS will be discussed.

INVITED LECTURE - 7

Chair : *Dr. Tharaka Dassanayake*

Co-Chair : *Prof. Akhterun Nessa*

WORK CAPACITY OF FEMALE ATHLETES

Pratima Chatterjee

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Background: Topic of women in sports has aroused a great deal of interest in 1970s'. In the light of present evidence, we see no reason why women should not be allowed to and encouraged to participate in all sports. Work tolerance of females has become increasing interest as we have developed our social attitude against discrimination on the basis of sex. Most of the distorted belief about the harmful effects of sports participation of women has been now eliminated. But today women can develop an extremely high level of fitness-competitive sports are requiring more and more conditioning to win. Top athletes must receive proper quality and quantity of training with adequate rest to recover from fatigue and sufficient food intake to replenish energy supplies and to repair muscular and other tissues. Nutrition has always been of great interest to athletes. It is apparent that proper nutrition will enable an individual to perform at his or her optimum both in practice and competition. Poor nutritional and dietary practices could affect both performance and the physical development of athletes. There are some sex differences in physiological systems - (i) Skeletal Muscle (ii)Cardio-Pulmonary functions (iii) Hormonal. Obviously, mean body weight for females is considerably less than the mean body weight for male. But there are some qualitative differences and similarities within the skeletal muscle mass of males and females. **Objective:** To observe work capacity of female athletes. **Methods:** All experiments performed at room temperature from 270C to 320C, with the relative humidity varying between 60% to 80% nutritional status and socio-economical status investigated by questionnaire method. **Results:** Maximum aerobic capacity is dependent on cardio-pulmonary functions. Maximum O2 consumption rates are about 50% higher in young adult males than females. Maximal aerobic capacity is a dominant factor for good performance in endurance events. Elevated O2 max maintain the integrity of O2 transport system during endurance exercise. **Conclusion:** All these changes of skeletal muscles, cardio-pulmonary functions are dependent on sex hormones. In case of male-testosterone and in case of female-oestrogen are responsible for sex differences in performance.

Key words: Female athletes, cardio-pulmonary functions, sex differences.

INVITED LECTURE -8

Chair : *Prof. Saeed Semnanian*

Co-Chair : *Prof. Rezina Akter*

ETHICS IN BIOMEDICAL RESEARCH: ROLE OF PREFESSIONAL ASSOCIATIONS

Shyamal Roy Choudhury

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Research in biomedical sciences has undergone significant changes in recent years due to globalization, easy access to information and extensive development of Information and Communication Technology. Some of these researches arise from transnational collaborations made up of sponsors from richer countries and researchers and research subjects from poorer countries. Under such circumstances issues of research ethics need to be given special attention so that noncompliance to ethical guidelines does not occur. The objective of this paper is to highlight the basic principles of research ethics, its importance and to suggest the role of professional associations in increasing awareness of ethics in biomedical research among graduate, post-graduate students, mentors and researchers. In this paper informations regarding biomedical research ethics have been obtained from various published sources and from the Ethical Codes, Policies, Guidelines/ Declarations adopted by Universities, Research Organisations, Professional Associations of western countries and India.Research Ethics provide guidelines for the responsible conduct of biomedical research. It also educates and monitors scientists conducting research to ensure a high ethical standard.Some areas of Responsible Conduct of Research have been identified. These areas need to be considered by the researchers while conducting biomedical research. These are data acquisition, management, sharing and ownership, conflict of interest and commitment, Human subjects, Animal welfare, Research Misconduct like Fabrication, Falsification, Plagiarism and Questionable Research Practices, Publication Practices and responsible authorship, Mentor-Trainee Responsibilities, Peer Review, Collaborative science.This paper will discuss a brief history of Biomedical Research Ethics, its importance and basic principles as adopted.The role of Professional Associations (a) in organizing awareness programme of research ethics through workshop. Seminars, (b) inclusion of research ethics in academic curricula (c) extension of research ethics consultation services when needed adoption of ethical code for biomedical collaborative research in south Asian Countries have been suggested.

Keywords: research ethics, ethical codes, ethical guidelines, fabrication - falsification - plagiarism (FFP), responsible conduct of research (RCR)

INVITED LECTURE - 9

Chair : *Prof. Shah Abdul Latif*

Co-Chair : *Prof. Paresh Chandra Ghosh*

NEUROPHYSIOLOGY AND DYSFUNCTION OF LOWER URINARY TRACT

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The lower urinary tract consists of the bladder and urethra and in males also includes the prostate. These organs are involved in the involuntary storage of urine produced in the upper urinary tract and the voluntary expulsion of urine at an appropriate time and place. The urinary bladder store and expel urine in a coordinated, controlled fashion. This is regulated by the central and peripheral nervous systems by a complex neurophysiological process. Dysfunction of the lower urinary tract may occur when there is disruption of neurological control centre. Neurogenic bladder is a term applied to a malfunctioning urinary bladder due to neurologic dysfunction or insult emanating from internal or external trauma, disease, or injury. The manifestation of dysfunction depends on the level of injury and severity of disruption. A complete gynecologic, urologic, and neurologic examination should be performed when evaluating patients with neurologic lower urinary tract dysfunction. In addition, urodynamic studies and neurophysiologic testing can be used in certain circumstances to help establish diagnosis or to achieve better understanding of a patient's vesicourethral functioning. An understanding of the basic neurophysiologic mechanisms of the lower urinary tract can guide us for evaluation and treatment of patients who present with lower urinary tract disorders.

INVITED LECTURE - 10

Chair : *Prof. Anwar Hossain*

Co-Chair : *Prof. Shipra Sinha Roy*

RESEARCH ETHICS

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Research ethics involves the application of fundamental ethical principles to a variety of topics involving research, including scientific research. These include the design and implementation of research involving human experimentation, animal experimentation, various aspects of academic scandal, including scientific misconduct, such as fraud, fabrication of data and plagiarism. Research ethics is most developed as a concept in medical research. The key agreement here is the 1964 Declaration of Helsinki. The Nuremberg Code is a former agreement, but with many still important notes. Research in the social sciences presents a different set of issues than those in medical research. Issues related to ethical principles are described in the presentation. The academic research enterprise is built on a foundation of trust. Researchers trust that the results reported by others are sound. Society trusts that the results of research reflect an honest attempt by scientists and other researchers to describe the world accurately and without bias. But this trust will endure only if the scientific community devotes itself to exemplifying and transmitting the values associated with ethical research conduct. There are many ethical issues to be taken into serious consideration for research. Sociologists need to be aware of having the responsibility to secure the actual permission and interests of all those involved in the study. They should not misuse any of the information discovered, and there should be a certain moral responsibility maintained towards the participants. There is a duty to protect the rights of people in the study as well as their privacy and sensitivity. The confidentiality of those involved in the observation must be carried out, keeping their anonymity and privacy secure. As pointed out in the BSA for Sociology, all of these ethics must be honoured unless there are other overriding reasons to do so - for example, any illegal or terrorist activity. Research informants participating in individual or group interviews as well as ethnographic fieldwork are often required to sign an informed consent form which outlines the nature of the project. Informants are typically assured anonymity and will be referred to using pseudonyms. There is however growing recognition that these formal measures are insufficient and do not necessarily warrant a research project 'ethical'. Research with people should therefore not be based solely on dominant and de-contextualised understandings of ethics, but should be negotiated reflexively and through dialogue with participants as a way to bridge global and local understandings of research ethics. The ethical issues in human subjects research have received increasing attention over the last 50 years. Institutional Review Boards for the Protection of Human Subjects (IRB's) have been established at most institutions that undertake research with humans. These committees are made up of scientists, clinical faculty, and administrators who review research according to the procedures set out in the Federal Regulations at 45 CFR 46. There are three primary ethical principles that are traditionally cited when discussing ethical concerns in human subjects research.

o The first ethical principle cited by the influential Belmont Report is autonomy, which refers to the obligation on the part of the investigator to respect each participant as a person capable of making an informed decision

regarding participation in the research study. The investigator must ensure that the participant has received a full disclosure of the nature of the study, the risks, benefits and alternatives, with an extended opportunity to ask questions. The principle of autonomy finds expression in the informed consent document.

- The second ethical principle is beneficence, which refers to the obligation on the part of the investigator to attempt to maximize benefits for the individual participant and/or society, while minimizing risk of harm to the individual. An honest and thorough risk/benefit calculation must be performed.
- The third ethical principle invoked in research with human subjects is justice, which demands equitable selection of participants, i.e., avoiding participant populations that may be unfairly coerced into participating, such as prisoners and institutionalized children. The principle of justice also requires equality in distribution of benefits and burdens among the population group(s) likely to benefit from the research.

INVITED LECTURE - 11

Chair : *Prof. MA Bari*

Co-Chair : *Prof. Somenath Roy*

REGULATION OF INFLAMMATORY CYTOKINES IN THE KIDNEY DURING HIGH SALT INTAKE: IMPLICATIONS IN SALT-SENSITIVE HYPERTENSION

Dewan Syed Abdul Majid

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Although salt-sensitive hypertension (SSH) develops due to inappropriate sodium excretion by the kidney, the exact mechanism initiating this defect following high salt (HS) intake is still being investigated. Over the past decade in our laboratory, we had conducted a series of studies examining the roles of different vasoactive factors (angiotensin II, nitric oxide, superoxide and peroxynitrite etc.) in the mediation of salt-sensitive hypertension. However, our recent experiments revealed that nitric oxide (NO) inhibition is associated with marked increase in pro-inflammatory cytokine, tumor necrosis factor-alpha (TNF-?) and a decrease in anti-inflammatory cytokine, interleukin-10 (IL-10) levels in plasma and in renal tissue which are associated with marked infiltration of macrophages in the kidneys. As NO deficiency is a hallmark feature in SSH and as these inflammatory cytokines are suggested to be involved in the pathophysiology of SSH, we are currently examining the hypothesis that chronic HS intake initiates a condition of altering the balance between pro- and anti-inflammatory cytokines by reducing NO production and thus, tipping the scale towards SSH by enhancing renal tubular sodium reabsorptive function by direct epithelial actions of these cytokines. These experiments are being conducted in a series of acute and chronic studies in anesthetized as well as in conscious mice in our laboratory. Using appropriate ELISA kits, the levels of different cytokines (anti-inflammatory, IL-10 and pro-inflammatory, IL-6 and TNF-?) were measured in plasma and renal tissues collected from the wild type (WT; C57BL6) mice treated with or without NO inhibitor agent, nitro-L-arginine methyl ester (L-NAME) as well as from eNOS enzyme knockout (eNOS-KO) mice (~8 wks old) which were fed either normal (NS; 0.04% NaCl) or HS (4% NaCl) containing diet for 2 weeks. In acute studies, renal hemodynamics and excretory function in these mice were evaluated using standard clearance techniques. In chronic experiments, systemic blood pressure (BP) was monitored chronically in mice using implanted radiotelemetry and also in some cases, using tail-cuff plethysmography. 24-hour urine collection was made using metabolic cages to assess renal functional parameters. HS intake significantly increased BP in eNOS KO mice as well as in L-NAME treated WT mice but not in non-treated WT mice. The plasma level of TNF-? remains undetectable in both WT & eNOS KO mice during NS intake but was increased during HS intake. However, compared to the values during NS intake, the levels of other cytokines were lower in the kidney during HS intake both in WT as well as eNOS KO mice. During NS intake, the plasma level of IL-6 was higher and that of IL-10 was lower in eNOS KO mice compared to WT mice. Chronic treatment with etanercept (TNF-? blocker) attenuated the HS induced increases in BP in L-NAME treated as well as in eNOS KO mice. Collectively, these findings indicate that HS intake generally increases the levels of pro-inflammatory cytokines only in NO deficient condition but not in mice with intact NO intact condition. These data suggest that an imbalance in the production of inflammatory cytokines due to chronic HS intake contributes to the phenotype of SSH.

INVITED LECTURE - 12

Chair : *Prof. Pratima Chatterjee*

Co-Chair : *Prof. Ruhul Amin*

THE ROLE OF ESTROGENS IN THE PATHOGENESIS OF ASTHMA

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Oestrogens are now known to have numerous physiological effects on the human body other than on sex differentiation, sexual development and reproductive functions. Gender differences in the prevalence and severity of asthma has been reported. In females, variations in severity of asthma during different phases of the menstrual cycle and in stages of reproductive life and with use of hormonal contraceptives and hormone replacement therapy have led to the discovery of actions of oestrogens on lung function and the immune mechanism. Oestrogen receptors (ER? and ER?) have been detected on the bronchial epithelium, bronchial smooth muscle and in the pulmonary vasculature. Thus estrogens play a role in lung mechanics and in the inflammatory response. In addition oestrogen is known to have actions on the immune cells and the immune reaction. Although the exact mechanisms of action of oestrogen on the immune reaction producing asthma is still not clear, the potential effects of oestrogen on antigen presentation, type 2 T helper cells (Th2) polarization, isotype switching to immunoglobulin E (IgE) and on mast cell degranulation have been reported. It has been reported that oestrogen enhances the production of antigen presenting cells which preferentially promote the Th2 response. Presence of Th2 cells and interleukins such as IL-4, IL-5 and IL-13 produced by these lymphocytes are known to potentiate the inflammatory response in asthma. Estrogens have also been shown to promote the class switching of B cells to produce Ig E isotype of immunoglobulins which is essential in the type 2 hypersensitivity reaction producing symptoms of asthma. It is binding of IgE to mast cells followed by rapid degranulation releasing mediators of hypersensitivity reaction that produce the symptoms of asthma. Oestrogen has been shown to enhance mast cell degranulation which could be blocked by tamoxifen, a tissue specific ER antagonist. However, the mechanism by which estrogens contribute to the development asthma is quite complex, with effects dependent on the concentrations of hormone and the concomitant presence or absence of other factors including other reproductive hormones. Further, exogenous compounds with estrogenic activity may have an influence. Thus to elucidate the mechanisms of action of oestrogen on lung function and the immune response on humans, further studies are essential.

INVITED LECTURE - 13

Chair : *Prof. Mosharraf Hossain Molla*

Co-Chair : *Prof. Jesmin Ara Hoque*

REGIONAL AND WHOLE GUT TRANSIT TIME AND ITS MEASUREMENTS

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Gastrointestinal transit is important for digestion and absorption of ingested food. It may be affected by physiological and pathological effects. So, assessment of transit through the gastrointestinal tract provides useful informations. Although several methods are available, each has distinct advantages and limitations. Recently, an ingestible wireless motility capsule (WMC), similar to capsule video endoscopy, has became available that offers a less-invasive, standardized, radiation free and office-based test. The capsule has three sensors for measurement of pH, pressure and temperature, and collectively the information provided by these sensors is used to measure gastric emptying time, small bowel transit time, colonic transit time and whole gut transit time. Current approved indications for the test include the evaluation of gastric emptying in gastroparesis, colonic transit in constipation and evaluation of generalized dysmotility. Rare capsule retention and malfunction are known limitations and some patients may experience difficulty with swallowing the capsule. The normal range for transit time includesthe followings: gastric emptying (2-5 hours), small bowel transit (2-6 hours), colonic transit (10-59 hours) and whole gut transit (10-73 hours). Besides avoiding the use of multiple endoscopic, radiologic and functional gastrointestinal tests, WMC can provide new diagnoses, leads to a change in management decision and help to direct further focused work- ups in patients with suspected disordered motility. Therefore, WMC represents a significant advance in the assessment of segmental and whole gut transit and motility and could proved to be an indispensable diagnostic tool for all concerned.

INVITED LECTURE - 14

Chair : *Prof. Kusal K Das*

Co-Chair : *Prof. Akhterun Nessa*

MODERN EVOLUTIONARY SYNTHESIS: DARWIN'S MODEL AND MECHANISMS

HR Ahmad

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Natural selection as a driver of evolution is a gradual process. It enabled the advantageous biological traits to propagate through populations of various species starting from the primordial soup over billions of years ago on this planet. This effect of inherited genomic traits is meditated through the reproductive success of organisms in the interaction with their environment. It is a key mechanism of evolution. This term natural selection was coined by Darwin to compare it with an artificial selection also known as a selective breeding of plants and animals. The journey began with how the prebiotic molecules made a cell and how cells made us. This deals with the rate of epigenetic and genomicvariations that exist in all populations of organisms. Random mutation and environmental factors contribute to the genomic variation of significance. If properly mated, the gift will be passed on to the offspring. Consequently, the tree of life on earth has been erected. The factors of the environment that influence the genome are signals from molecular biology, neighboring cells, individuals, the population, various species as well as abiotic niches. This would mean that individuals with certain advantageous variants of biological traits will survive and reproduce in a given environment more than individuals with other variants. Consequently, the population would grow through the processes of natural selection. Since natural selection acts on the phenotype, its genetic basis is governed by allele frequency in a given population using an axis of genes-proteins-functions. Various components of natural selection derive the cycle of life from parents to gametes to zygotes to adults and back to parents. Over-reproduction, steady populations, limited resources, competition and heritability of unique traits lead to differential survival and speciation. Darwin keenly and sharply observed during his Galapagos research elective how the new species could emerge from a particular ecological niche. He compared his natural observations with the known data of artificial selection by human breeders. Through the lens of analogical reasoning, he genially proposed his model of natural selection as a driver of evolution. Darwin gave us a unifying model of evolution being composed of theories: 1. Evolution, 2. Common descent, 3. Species diversification, 4. Gradualism and 5.Natural selection. Mechanisms, on how the model worked, were not elucidated during his life time. Darwin's theory of evolution, however, is now well supported by discoveries in classical and molecular genetics, anthropology, paleontology and geological surveys. This modern evolutionary synthesis has enlightened the pathway to appreciate natural selection as the prime mover for evolution. Now the question to be raised is what is known about human evolution during the last 10 to 15 thousand of years? There are hints from the recent neuroscienceresearch that the laminar architecture of the human cerebral cortex has undergone some changes particularly in the regions responsible for speech (understanding the spoken word and active speaking). The superior temporal gyrus (contains the auditory center and Wernicke's area) and the gyri ofthe frontallobe containing the Brora's area and the associated areas for these centers have shown changes that can be explained on the basis of evolutionary pressure. Paleontological research data show that the second major field of evolutionary changes in the human body is the anatomy of jaw. If we compare the jaws of Neanderthalers (nearly 40.000 years ago) with homosapiens, there are clear evolutionary changes according to the needs asNeanderthals were vegetarian.In summary, homosapiens are at the top in the kingdom due to evolution of human brain with superb information processing capacity being driven by socio-ecological constraints.

Key words: biological traits, variation, natural selection, artificial selection

INVITED LECTURE - 15

Chair : *Prof. Gopal Chandra Sarker*

Co-Chair : *Prof. Rezina Sultana*

SOCIAL RESPONSIBILITIES OF PHYSIOLOGISTS

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Physiology is one of the important subjects that provides a basic foundation to doctors to understand the intricacies of human body. Not only doctors, the patients do need to understand basic physiological concepts to keep themselves healthy and also to learn the issues related to diseases. The need to provide the physiology knowledge to a healthy individual or a patient is always welcome. However, there is a paucity of some mechanism to do so. There is no denial of the fact that these days not only a patient but a common man is knowledge conscious and tries to be aware of the health issues and related knowledge. Due to lack of any efficient mechanism people do not get the relevant information. Most physiologists inadvertently keep themselves away from public engagement. They presume that Physiology is merely a teaching subject and only confined to classroom. Although they themselves understand the significance of physiology, rarely they talk about it in general public. The understanding of human physiology and its relevance to the general health of an individual is a matter of public concern too. On the contrary public is hardly aware of the knowledge as well as the subject called "Physiology". It is the responsibility of the physiologists to make people aware of the importance of the physiological well being. This responsibility of physiologists can be shared in several ways. The first and foremost way is by writing for public in periodicals, books or daily newspapers. Writing for public is always a viable, lucrative and at times remunerative option. Reading always leaves a long lasting impact of any relevant knowledge among people. The second way is by participating in community health promotional activities. The most commonly sought physiologists' expertise lies in the field of exercise physiology for healthy individuals. Physiology can help ensuring safe and effective workout for healthy individuals. The physiologist could be a part of creating safe habits and imparting safe practices for those exposed to challenging environment. The third way is by setting up diagnostic labs and clinical services for non-invasive physiological interventions in the departments. Such regular clinics and labs are like autonomic function lab, pulmonary function lab, neuro-physiological testing lab, sleep lab, integral health, biofeedback clinic, pain clinic etc. The fourth way is to take help of the Physiologists' associations/organizations to participate in innovative or traditional manner to impart knowledge of physiology to society. It is a good option to adopt the local community or nearby school for imparting physiology education by organizing innovative hands-on educational program. Health Fair is another platform to organize such events. There is also a possibility for associations to tie up with public or private organizations and create space for public engagement for physiologists.

INVITED LECTURE - 16

Chair : *Prof. Hamid Javed Qureshi*

Co-Chair : *Prof. Golam Mahbub E Mostofa Choudhury*

BIOMEDICAL INFORMATICS APPROACH TOWARDS PERSONALIZED MEDICAL INFORMATICS: A NOVEL STANDARD OF HEALTHCARE

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Background : Major clinical drugs are ineffective for many patients, some harmful enough leading to death. Some have serious adverse drug reactions, causing their withdrawal from the market. Thus there is a need for "the right treatment for the right person at the right time" through Personalized Medicine.Biomedical Informatics (BMI) provides integration of 'Bioinformatics' and 'Translational Medicine'. Proposed Personalized Medical Informatics (PMI) platform is essential for developing BMI methods leading to personalized medicine: a new standard of healthcare. **Objectives :**Primary objectives for PMI are: (i) to overcome each translational barrier: bench-to-bedside, bedside-to-community and community-to-policy, promoting knowledge sharing between segregated communities (ii) to facilitate access and integration of Health Records in light of available biological, imaging, clinical and public health data. **Methods :**PMI requires a cyber-infrastructure network comprising of service-oriented architecture, web-based access, cloud computing for on demand computational resources, semantic interoperability through the use of ontology-based metadata (describing data, services, and other components of the infrastructure), personal genome analysis data, text mining, data-warehousing, custom drug-designing and molecular modeling. **Results :** PMI would (a) provide a platform for analysis and connection of genetic information with clinical phenotypic information, improving healthcare through efficient diagnosis, prevention and treatment (b) help translate biomedical research results into clinical practice, through processing of large-scale genomic data, interpretation of the functional effect of genomic variation, relate complex genetic interactions and transfer these discoveries into medical practice (c) generate the need for developing new health application devices for regular patient monitoring and health checkup; sync the information to cloud servers for understanding patient's health and emergency needs. **Conclusion :** Challenges in PMI are to amalgamate and convert these fast developing scientific capabilities into useful medical and clinical information - secure management of clinically-derived data across hospital-university interfaces, development of large-scale data integration warehouses, and clinical decision support systems, to build the genotype-phenotype relationship.

Keywords: biomedical informatics, personalized medicine, translational medicine, biomedical research, bioinformatics

INVITED LECTURE - 17

Chair : *Prof. Shelina Begum*

Co-Chair : *Prof. Abdul Wakil*

GPCR SIGNALING AND THE REGULATION OF VASCULAR FUNCTION

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G-protein coupled receptor (GPCR) kinase-2 (GRK-2) has been implicated in the regulation of vascular tone. Enhanced GRK-2 has been reported in hypertensive and the activity of GRK-2 is closely regulated by Raf kinase inhibitor protein (RKIP) and raf-1 interaction. Raf kinase plays a significant role in GPCR-mediated signaling pathways that involve both vasodilator and vasoconstrictor effector systems. For ?-adrenergic receptor mediated vasodilatation, Raf kinase exerts a physiological regulatory influence via inhibition of GRK while, Raf kinase augments vasoconstrictor GPCR signaling. Therefore, a crucial balance in Raf kinase signaling is required to maintain a normal blood pressure and vascular function. Peroxisome Proliferator Activated Receptor (PPAR) ligands have been shown to reduce blood pressure in hypertensive models but their interaction with GRK-2, RKIP or Raf-Kinase is not explored. In this study we tested the hypothesis that PPAR ligand-dependent attenuation of blood pressure in SHR involves GRK-2 -mediated signaling mechanism influencing RKIP and Raf-1. We also examined the effect of acute and chronic Raf kinase inhibition on blood pressure regulation in Sprague-Dawley rats using telemetry transmitters for continuous monitoring of blood pressure parameters. We conclude that GRK-2, RKIP and Raf kinase plays a significant role in blood pressure regulation, and RAf Kinase inhibition affects both vasodilator and vasoconstrictor signaling in response to GPCR activation.

INVITED LECTURE - 18

Chair : *Prof. Hossain Reza*

Co-Chair : *Dr. Arun K Chakraborty (India)*

CARDIAC AND VASCULAR AUTONOMIC MODULATIONS AND BAROREFLEX SENSITIVITY IN PATIENTS WITH CORONARY ARTERY DISEASE

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In both myocardial ischemia and myocardial infarction heart perfusion is altered. In myocardial ischemia heart, perfusion is diminished while in myocardial infarction, some portion of myocardium is scarred. In case of myocardial ischemia, cardiac autonomic modulation, vascular autonomic modulation, and baroreflex sensitivity are found to be increased as assessed by heat rate variability, blood pressure variability and baroreflex sensitivity respectively, whereas, in case of myocardial infarction, cardiac autonomic modulation, vascular autonomic modulation, and baroreflex sensitivity are found to be reduced. It may be due to the intrinsic cardiac autonomic network of the heart. The intrinsic cardiac afferent neurons transduce the local mechanical and chemical milieu of the heart. When there is myocardial ischemia, ischemic tissues release a number of substances, like substance P, bradykinin, histamine, and adenosine, which might stimulate cardiac autonomic afferent fibers and might increase the vagal activity. However, in case of myocardial infarction due to scarring of tissues, the intrinsic cardiac autonomic network is damaged. Thus, it seems that a different mechanical impact of scars of varying size might be involved in decreasing cardiac autonomic modulation.

INVITED LECTURE - 19

Chair : *Prof. Savithri W. Wimalasekera*

Co-Chair : *Prof. Miah Mohammad Wadood Mustafa*

MUTATION OF DIFFERENT CANDIDATE GENE CAUSES DELAYED PARASITE CLEARANCE AND MALARIA TREATMENT FAILURE AFTER ARTEMISININ COMBINATION THERAPY

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Background: Artesunate plus sulfadoxine-pyrimethamine was randomly used against Plasmodium falciparum for last 5 years. This study was designed to evaluate the current efficacy of this combination therapy for first time in Eastern India **Methods:** Seventy eight patients were randomized to Artesunate plus sulfadoxine-pyrimethamine treatment and the therapeutic efficacy was monitored from day 1 to day 42. Parasite clearance time and parasite clearance half-life were checked in all patients. In vitro susceptibility to artesunate, pyrimethamine and sulfadoxine were examined. Genotypic variation of different candidate gene (pfatpase6, pfmdr1, pfdhfr, pfdhps and pfcrt gene) were also assessed. **Results:** Treatment failure rate was recorded 12.82% {six (6) late treatment failures (7.69%) + Four (4) early treatment failures (5.13%)}, just up to the cut-off level (10%) for drug policy change recommended by WHO. Delayed parasite clearance (Parasite Clearence Time, >48-?72h) were observed in 19 (24.36%) patients. Increasing proportion of these slow-clearing infections (parasite clearance half-life >4.4h) were also proved the decrease efficacy of Artesunate plus SP. Reduce susceptibility to artesunate (Mean IC50 13.58nM) were observed in 10 (14.08%) isolates for first time in India. High rate in vitro pyrimethamine (50.70%) and sulfadoxine (43.66%) resistance were found. This recent failure is associated with mdr1 86Y+184F or 86Y+184F+1246Y, dhfr 51I+59R+108N and dhps 436A+437G+540E or 436A+437G+540E+ 613T haoplotype and in some instance with pfatpase6 431K gene. **Conclusions:** Our present findings implicate that Artesunate plus sulfadoxine-pyrimethamine treatment failure in this area of Eastern India is increasing. The formulation of sulfadoxine-pyrimethamine within artemisinin combination therapy should be reconsidered.

Keywords: Plasmodium falciparum, Delayed parasite clearance, ACT, treatment failure, Single nucleotide polymorphism, candidate gene

INVITED LECTURE - 20

Chair : *Prof. Jafri Malin Abdullah*

Co-Chair : *Prof. Mahfuzur Rahman Khan*

MODULATION OF MACROPHAGE PHAGOCYTOSIS BY PROBIOTIC BACTERIA IN VITRO

Yashaswini S. Nanjundaiah[1], David A. Wright[1], Nasima S. Chowdhury[1], Anwar R. Baydoun[2], and **Mosharraf H. Sarker[1]**

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Introduction: Lactobacillus rhamnosus GG (LGG), a well know probiotic bacteria, has been shown to stabilise the gut microbial environment and confer a number of health benefits including activation of non-specific and specific immune response, suppression of intestinal inflammation and alleviating food allergies. However, the physiological mechanisms by which the probiotics confer their health benefits are not fully understood. The aim of the research is to investigate the role of probiotic on the phagocytic function of macrophage. In this study a cell free LGG culture medium was used since it has been shown that LGG releases a number of soluble factors which are responsible for beneficial health effects in the hosts. **Methods:** Phagocytosis of e.coli (HfrC) by murine macrophage j774 cells (both ingestion and digestion) was monitored by gentamicin protection assay (GPA). Macrophage and e.coli were co-incubated for a set period of times and then external un-phagocytised bacteria were killed by gentamicin (200µgml-1). Macrophages were then lysed and ingested bacteria were quantified by colony counting technique. For monitoring bacterial digestion, macrophages were incubated initially with e. coli for 60 minutes and then gentamicin was used to kill any un-phagocytised external bacteria. Undigested e.coli were subsequently recovered from lysed macrophages and quantified at an interval of 40 minutes for 4 hours. The Nitric Oxide (NO) production was measured from nitrite accumulation from the cell culture medium by griess assay. Production of NO was also monitored by measuring fluorescence intensity of DAF-2AM using a fluorescence microplate reader and a fluorescence microscope. Fluorophore DCF was used to monitor free radicals production. iNOS and NOS2 expression were measured using the Western blot assay. **Results:** E.coli ingestion by macrophage was found to be reduced by LGG conditioned medium. The conditioned medium, however, had significantly accelerated the digestion rate ($p<0.05$). This enhanced e.coli digestion was found to be mediated by NADPH oxidase dependent rapid free radicals production. Nitric oxide inhibitor had little effect on the LGG conditioned medium mediated enhanced bacterial digestion. LGG conditioned medium had produced a low but concentration dependant increase in basal NO. However, when LGG conditioned medium was applied along with LPS, the NO production concentration dependently reduced. **Discussion:** A balanced production of nitric oxide and free radicals is necessary for normal phagocytic function of macrophages. Low physiological levels of both molecules preserves cells integrity but excess production produce pro-inflammatory responses which lead to tissue injury (Korhonen et. al, 2001, Inflammation, 25(4):223-32). In this study a pulse of free radicals production to LGG conditioned medium seems to be targeted for rapid digestion of e.coli without affecting any tissue injury. Therefore, the ability of LGG to modulate the basal NO, iNOS, free radicals and NADPH oxidase can be a novel approach in improving the intestinal homeostasis and immunity.

Key Words: LGG conditioned medium, nitric oxide, free radicals, and phagocytosis.

Symposia Lectures on Ergonomics

LIST OF SYMPOSIA PRESENTATION : *Issues of ergonomics in South East Asian countries*

Date : 6th December 2014, **Time :** 2:00 PM - 3:20 PM, **Venue :** Milton Hall

Chair : *Prof. Cheng Hwee Ming*

Co-Chair : *Prof. Firoza Begum*

Topic & Speaker

- "Intervention of Ergonomics for Improving Health and Efficiency of Women Involved in Agricultural Sector"
  Prof. Prakas Chandra Dhara (India)

- "Ergonomics for safety,health and productivity: Common issues for South East Asian countries"
  Prof. Paresh Chandra Ghosh,(India)

- "Development of work related musculoskeletal disorders among women workers of unorganized sectors with special reference to chikan embroidery workers of West Bengal"
  Prof. Somnath Gangopadhyay (India)

SYMPOSIA PRESENTATION -1

INTERVENTION OF ERGONOMICS FOR IMPROVING HEALTH AND EFFICIENCY OF WOMEN INVOLVED IN AGRICULTURAL SECTOR

Prakash C. Dhara

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A large proportion of the population in India and other countries in South East Asia are involved in agriculture. Agricultural workers are involved in rice cultivation almost throughout the year. Women are intimately related to the rice cultivation jobs, starting from the sowing of the rice seed to the cooking of the rice. It was noted that the women workers had very poor daily wages. The daily wages of the women was lesser than that of their male counterpart. From the study of socioeconomic status of female agricultural workers it was noted that the per capita annual income of their family was slightly greater than men. Most of the workers (85%) remained under the poverty line. Their socioeconomic status was low to very low. Nutritional status of the female workers, engaged in different rice cultivation jobs, had been assessed by weighing raw and cooked food method. The results showed that the amount of intake of different foodstuffs were lesser than the RDA value, except for cereals and other vegetables. They used to take a large amount of cereals (usually rice). Due to low economic status, the women agricultural workers could not purchase nutritious food. Daily food intake as well as nutrient intake was lower than that of RDA values as prescribed by ICMR (2000). Musculoskeletal Disorders (MSD) of women was high in rice cultivation tasks. Eye problems are caused mainly due to entry of dust and very small fragments of straw (sometimes paddy grain) into the eyes. The occurrence of pain in lower back, upper and lower limbs was highly prevalent. The working posture was evaluated by video recording of the rice cultivation tasks and direct observation method. The total duration of each posture and frequency of major postural change were also noted. The working postures were divided in to four major types- standing, bending, sitting, and walking. Results represented that the bending was the dominating posture in transplantation and reaping. Prolonged bend posture leads to low back pain. Sitting (squatting) was the dominating posture in uprooting task. Prolonged squatting leads to upper and lower limb pain. Standing posture was dominating in bundling of straw and threshing. There was a significant difference in all body dimensions ($p<0.001$) between male and female agricultural workers. The percentage difference was ranged from 3.5% to 17.4%. Different percentile values (5th, 50th and 95th) of each body dimension were computed. Percentiles values were used for designing workstation (threshing work station, grain storage wok place etc). Those were used for designing agricultural hand tools, e.g., threshing device / machine, handle of hoe, paddy spreader, threshing machine etc. The drudgery of female agricultural workers can be reduced by conducting awareness and training program. Awareness about nutritional status, work posture, work method, work-rest cycle, manual material handling were included in the program. For this purpose a booklet has been prepared according to the guidelines of the IEA (International Ergonomics Associations) and ILO (International labour Organization) awareness check list of agricultural work. The booklet has been prepared in local language (Bengali). Efforts have been made to modify it according to the problems of agricultural works in India.

SYMPOSIA PRESENTATION -2

ERGONOMICS FOR SAFETY, HEALTH AND PRODUCTIVITY COMMON ISSUES FOR SOUTH-EAST-ASIAN COUNTRIES

Paresh Chandra Ghosh

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Views expressed in article is of author in no way it reflects the official views of neither Govt of India nor central labour institute nor any product endorsement) Many incidences during Second World War happened in most of south East Asian countries to British army, navy and air force. Due to war demand those points were not given priority. After end of world war British medical fraternity started analyzing war memos and found that a large causalities has suffered to British army navy and air force in specifically at south east Asia due to heat stress. That is how; in the year nineteen forty nine British established a specialty which will deal with medical, physical, psychological factors of human being in shop floor to promote safety health and increased productivity of industry. Prof Misrani has selected a Greek word "ergonomics" means work according to natural laws at shop floor. That is how ergonomics was born in England and spreaded all over world making it one of the largest scientific bodies in world today. During same time in India at tata steel Jamshedpur in erstwhile Bihar they are aware of occupational disease at their Jamshedpur steel plant during 1939. The then Chief medical officer of Tata steel Jamshedpur Dr Haydar Ali who felt the need of different medical specialty and competency among doctor to understand complex industrial disorders which are not prevalent in common population thus "Occupational health " concept has come to India. Today India has many medical specialty such as Diploma in Industrial health (DIH), Diploma in Public Health (DPH), Associate fellow of Industrial Health (AFIH),etc.In all such post graduate course ergonomics is included and taught for industrial exposures to doctors. Ergonomics is the science of multy disciplinary approach for improving industrial safety health and higher productivity. International Labour Organization (ILO) defined ergonomics as science of human biology & engineering. Whereas in United States of America (USA) it is known as human factor research, Scandinavian country it is known as work environmental research. International ergonomics association (IEA) is one of the largest scientific body having one hundred odd countries of its member through their respective ergonomics societies of parent country. India is a member of IEA for long time. I am optimistic Bangladesh is also a member of IEA have considerable work being done in this area. Ergonomics issues are complex in nature. It comprises of Physiological and physical factors and machineries people use. Thus ergonomics issues related to Physiological factors such as human Body Dimensions, capacity, Job demands, posture, various job reaches are few common issues SARC countries are facing. We need physiological status of people who are going to perform at shop floor. Their physiological capacities such as VO2max, job demand in terms of physiological parameters are key to safety. Acceptable work load is a must for each nation SARC countries can set their safe limits of Industrial operation through ergonomics Reserarch.This is one issue which only physiological solution will be practicable to shop floor. Developments of Anthropometrical Data banks for each SARC countries are must for reduction of postural stress from shop floor or elsewhere. Similarly Physical factors such as heat, cold, Illumination, noise, vibrations are potential physical hazards people are facing during industrial operations. Their effects on human productivity, safety and health will be prime discussion in the article. The effects of thermal limits for industrial operations can only be set by Physiological research. Heat & cold tolerances of human is varied due to physiological variation in SARC countries. SARC countries can develop their own set limits of all such environmental exposure both heat & cold by laboratory experiment then shop floor variations. Similarly all other physical factors like noise, industrial illumination, vibration exposure of industrial operators can be set for all SAC countries either developing common standards for all SARC countries like European union standards except British standards. It can be done for each physical factor. A good amounts work India has already been done which SARC countries can make it common standards for universal application in all SARC countries.

SYMPOSIA PRESENTATION -3

DEVELOPMENT OF WORK RELATED MUSCULOSKELETAL DISORDERS AMONG WOMEN WORKERS OF UNORGANIZED SECTORS WITH SPECIAL REFERENCE TO CHIKAN EMBROIDERY WORKERS OF WEST BENGAL

Somnath Gangopadhyay

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The final report of the National Commission for Enterprises in the Unorganized Sector (NCEUS) showed that the workers in the unorganized sector constitute more than 93 percent of the total workforce of India. It is also evident that female workers rely more on the unorganized sector than men. Majority of women in the unorganized sector work for low and highly unequal wages compared to their male counterparts. The situation is deteriorating even further because of the impact of globalization and liberalization, relaxation of labor laws etc. Identifying issues and problems in the occupational health of women remains a challenge. India is a land of craftsmen. Textiles are decorated by various techniques, e.g. embroidery, brocading, printing, painting and dyeing, but among all of these, the embroidery craft is ranked at the top. Chikan embroidery is one of the most ancient and popular art forms in Indian villages. It has been an integral part of Indian villagers` occupation since the ancient period and has earned popularity in the international market in modern times as well. A major occupation for the people in the villages of West Bengal is Chikan and Kantha embroidery. Many rural women in West Bengal are experts in making wonderful, chikan embroidery salwaar suits, sarees, bed covers, pillow covers etc. They make these on order of their neighbors who would use them for daily purposes and these are made for marketing purposes as well. The living standards of chikan embroidery workers are wretched since their earnings are meager and working hours are pretty long. To ensure a regular trickle of money, the embroiderers work rigorously throughout the year. The chikan embroidery work is a highly tedious manual job operation and 1 out of 300 female workers suffers from some work related diseases. Work related physical & psychological factors largely determine the occurrence of low-back pain & upper extremity complaints. It is observed that income had the largest effect on self-related health & psycho-emotional health rating. An association between occupational stress & Musculo Skeletal Disorders has also been found in Indian scenario among chikan embroidery workers.

Symposia Lectures on Medical Education

SYMPOSIUM: MEDICAL EDUCATION

Date : 7th December 2014, **Time :** 2:00-2:20 PM, **Venue :** Shaheed Dr. Milon Hall

Chair : *Prof. Muhammad Aslam*

Co-Chair : *Prof. Abida Ahmed*

Topic & Speaker

- Homeostatic Teaching and Student Learning
  Prof. Hwee Ming Cheng (Malayasia)

- Addressing Student Learning Preferences: A Challenge and Need
  Prof. Bishnu Hari Paudel (Nepal)

- Integrating Professionalism in Teaching and Learning
  Dr. Sheilla Pinjani (Pakistan)

SYMPOSIA PRESENTATION - 1

HOMEOSTATIC TEACHING AND STUDENT LEARNING

Cheng Hwee Ming

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Teaching Physiology involves explaining mechanistic events, simplifying integrated processes to help students understand key organizing principles in Physiology. How much of what we say is effectively conveyed to the students? How might some of our best efforts in teaching be miscommunicated and misconceptions in Physiology inadvertently seeded in the students' minds? One helpful check on whether what and how we want students to understand Physiology is faithfully transmitted when we teach is to listen to them. By listening, we are thinking of the variety of ways we can hear them expressing their appreciation of Physiology. We can take note of what they say in their written responses in test papers by observing for any common misperceptions among the students in a class. In small group tutorials, we should make time to listen as we allow students to verbalize, discuss and explain Physiology in a non-threatening, non-embarrassing learning milieu. Our active listening as Physiology educators will provide valuable insights and feedback to re-organize and fine tune our teaching. Several examples of this 'homeostatic teaching' that concern a number of essential Physiology concepts will be illustrated from Respiratory, Cardiovascular and Renal systems. These will highlight common students' misconceptions that were uncovered from giving active attention to feedbacks from the students.

SYMPOSIA PRESENTATION -2

ADDRESSING STUDENT LEARNING PREFERENCES: A CHALLENGE AND NEED

Bishnu Hari Paudel,

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Introduction: Entire health professions education efforts are directed towards making student learning better. In this continuous search of modalities of better student learning, taking care of each and every student individually has prime importance. **Description:** Facilitating student learning has been a continuously burning issue in education. It has been taken into consideration in medical/health professions education. The education research of last four decades has been focused on how to teach and evaluate students better. While didactic lecture continues to be one of the major modalities in large group teaching, an improved method of lecture as structured interactive session has been practiced in many of the newly established/more receptive medical schools. In small group teaching varied methods have evolved, especially in the clinical settings. On the student side, relatively less attention has been paid to in developing world. In industrialized world, students are equally trained to tune to the system of innovation in educational methods. They are delt individually as a practicing physician deals with individual patients because of differences in learning preferences of individual students. In other words, dealing with a student is analogous to managing a patient. This approach probably needs more attention though it is challenging when student enrollment in medical schools has surged in many countries. **Conclusion:** Addressing students' learning is a challenging task for teachers. However, for their better learning teachers need to treat them individually as physicians treat patients individually.

SYMPOSIA PRESENTATION -3

INTEGRATING PROFESSIONALISM IN TEACHING AND LEARNING

Sheilla K Pinjani

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Professionalism is a dynamic entity and has been continuously evolving over time. Curricular reforms around the world have made efforts to incorporate all the core competencies including professionalism according to their regulating bodies. Attempts have been made to teach and assess professionalism health professional schools; however, it has not been emphasized in faculty development, teacher education and evaluation. Excellence in teaching is achieved when one is able to keep balance between all roles of a teacher and act as role model. This pilot study was an effort to see the effect of combined method approach for developing insight of own qualities as part of 12 roles of teacher to enhance professionalism attributes.The effectiveness of combined method approach for developing insight of own qualities required for excellence in teaching. This was a qualitative study using content analysis of daily writing in e-personal development review journals by all 24 students enrolled in the Advanced Level Teaching and Learning Course as part of Masters programme in health professionals education. Value titles for 5 groups were used as anchors to learn about inner values, positivity and co-operation at work and incorporating these values in 12 roles of teacher to develop excellence as teacher. Group titles were used to explore underlying values under each quality given as title to the group in e-forum as 'Thought of the Day'.Approach used to learn values and develop insight in qualities was very much appreciated by all and majority looked at strategies to incorporate them in self and teaching practices. Combined method approach seems to be an effective way of honing qualities and becoming role model teachers. This approach can be adapted to undergraduate education to develop professionalism at early stage.

Key words: Professionalism, role models, integrating values in teaching

Free Paper Sessions

LIST OF ORAL PRESENTATION

FREE PAPER SESSION-1 : *Cardiovascular & Respiratory System*

Date : 6th December 2014, **Time :** 12:00-1:00PM, **Venue :** Shaheed Dr. Milon Hall

Chair : *Prof. Nayeema Akhter*
Co-Chair : *Dr. Rita Khadka*

OP-1. A Novel Combinatorial Cardio-therapeutic Approach Against Lead induced Oxidative Stress in Rat Heart
Debosree Ghosh, Syed Benazir Firdaus, Sudeshna Paul, and Debasish Bandyopadhyay

OP-2. Stress Affected IL-6 and Hemodynamic Factor Relationship to Predict Early Atherogenesis in Young Population
Ali Muhammad Soomro, Nasim Aslam Channa, Mujadid Qureshi & Zulfiqar Ali Laghari

OP-3. Exercise Induced Sports Anemia in Female Athletes in Dhaka City
Tanbira Alam, Rokeya Begum

OP-4. Effects of Training on Pulmonary Function Amongst Sri Lankan National Level Athletes
Wijayasiri K.D.C.U, Wimalasekera S. W., Thurairaja C

OP-5. Pulmonary Infections caused by Nocardia Species in Patients with Chronic Obstructive Pulmonary Diseases.
Dr. Muhammad Noman Rashid, Dr. Syed Tousif Ahmed, Dr. Muhammad Asif Memon

FREE PAPER SESSION - 2: *Reproductive System*

Date : 6th December 2014, **Time :** 12:00-1:00 PM, **Venue :** Milton Hall

Chair : *Prof. Amar K Chandra*
Co-Chair : *Prof. MM Moinuddin Ahmed*

OP-6. Effect of Antagonist of Gonadotropin Inhibitory Hormone on Puberty Onset in Male Mice
Imran Amjad

OP-7. Preterm Delivery: Role of Zinc and Copper
Masuda Sultana, Nasim Jahan, Nayma Sultana

OP-8 Effect of An Iodide Blocker – Perchlorate on Female Reproduction in Adult Rats
Dakshayani Mahapatra and Amar K. Chandra

OP-9. Relationship of Serum Fasting Insulin and Prolactin with Gonadotropins In Infertile Women
Shamima Bari, Rokeya Begum , Qazi Shamima Akhter, Tanbira Alam, Kadija Begum

OP-10. Seminal Plasma Lead and Cadmium and Sperm DNA Fragmentation in Male Partners of Infertile Couples Investigated at A Selected Centre
Wijesekara GUS, Fernando DMS, Wijeratne S, Bandara N

FREE PAPER SESSION - 3 : *Nervous system*

Date : 6th December 2014, **Time :** 3:40-5:05 PM, **Venue :** Shaheed Dr. Milon Hall

Chair : *Prof Edathil Vijayan*
Co-Chair : *Prof. Mahmuda Begum*

OP-11. Cognitive Functions and Psycho Social Determinants among Srilankan Adolescents
Kaththiriarachchi L S, Hewage DC, Wimalasekera SW, Mendis ALS

OP-12. Role of Interventional Neurology in practical purpose
Md. Shahidullah

OP-13. Eye Problems Among Workers in Re-rolling Industry
Reza Ahmad, **Nahid Sultana,** Rabeya Yasmin

OP-14. Effect of Oyster Mushroom (Pzeurotus Florida) on Stress Induced Depression in Wistar Albino Rats
Sharmin Akther, Nasim Jahan, Nayma Sultana

OP-15. Cognition & Metacognition: Their Role in Developing EQ
Samina Malik, Aamenah Malik, Sarah Khalid

OP-16. Parasympathetic Nerve Function Status in Female with Rheumatoid Arthritis
Kawser Jahan, Noorzahan Begum, Sultana Ferdousi

OP-17. Renal Sympathetic Denervation Suppresses Insulin Resistance at Pre-diabetic Stage in OLETF Rats
Kazi Rafiq, Shamshad J. Sherajee, Yoshihide Fujisawa, Masaki Mogi, Hirofumi Hitomi, Hiroyuki Kobori, Hermann Koepsell, and Akira Nishiyama

FREE PAPER SESSION - 4 : *Endocrine System*

Date : 6th December 2014, **Time :** 12:00-1:00PM, **Venue :** Milton Hall

Chair : *Prof. KK Deepak*
Co-Chair : *Prof. Chandra Rani Sarker*

OP-18. Study of Spirometric Lung Function Status in Type 1 Diabetic Patients in Bangladesh
Khan Mohammad Arif

OP-19. Anti-diabetic Effect of Peanut (Arachis Hypogaea L.) Extract in Alloxan Induced Diabetic Male Rats
Fatema Akter, Nasim Jahan, Nayma Sultana

OP-20. Relationship of Parathyroid Hormone and Obesity in Bangladeshi Subjects
Nurjahan Akter, Rokeya Begum, Qazi Shamima Akter

OP-21. Rare Sugar D-psicose Prevents Progression and Development of Diabetes in Type 2 Diabetes Mellitus (T2DM) Model Otsuka-Long-Evans-Tokushima Fatty (OLETF) Rats
Akram Hossain, Li Sui, Fuminori Yamaguchi, Kazuyo Kamitori, Youyi Dong, Ikuko Tsukamoto, Iida Tetsuo, Masaaki Tokuda

OP-22. Assessment of Insulin Resistance in Adult Male with Essential Hypertension
Susmita Sinha, Qazi Shamima Akhter

OP-23. Excess Iodine Imparts Oxidative Stress in Some Target Tissues of Thyroid Hormones
Arijit Chakraborty, Prof. Amar K Chandra

OP-24. Adiposity in Body Fat percentage Defined and BMI Missed Obese Cases is Associated with Adipokine and Cardiometabolic Dysregulation in Normoglycemic Males
Syed Shaheed Habib, Khlalid A Al Regaeiy, Laila Al Dokhi

FREE PAPER SESSION- 5 : *Allied & Clinical Science*

Date : 7th December 2014, **Time :** 12:00-1:00PM, **Venue :** Milton Hall

Chair : *Prof. Emran Bin Yunus*
Co-Chair : *Lt.Col. Sharmeen Sultana*

OP-25. Comparison of Anti-inflammatory Activity of Nigella Sativa and Diclofenac Sodium in Albino Rats
Muhammad Usman Bashir, Hamid Javaid Qureshi, Muhammad Shoaib

OP-26. Molecular Biological Analysis of Hepatitis B Virus in Bangladesh:Impact of HBV-related Genomic Alteration for Determining Disease Progression and Hepatocarcinogenesis
Mamun-Al-Mahtab, Sheikh Mohammad Fazle Akbar, Salimur Rahman

OP-27. Assessment of Some Aspects of Cardiovascular Function Status in Male Patients with Stable COPD
Magfura Pervin , Noorzahan Begum, Taskina Al

OP-28. GC-made Protein Disorder Shades New Light on Vertebrate Evolution
Arup Panda, Soumita Podder, Sandip Chakraborty and **Tapash Chandra Ghosh**

OP-29. Evaluation of MRSA Chrome Agar for the detection of Methicillin Resistant Staphylococcus aureus.
Durdana Chowdhury, Sanya Tahmina Jhora, Tarek Mahbub Khan, Sadia Afroze

FREE PAPER SESSION-6: *Renal System/Gastrointestinal system/Related areas*

Date : 7th December 2014, **Time :** 3:20-4:50 PM, **Venue :** Shaheed Dr. Milon Hall

Chair : *Prof. Shyamal Roy Choudhury*
Co-Chair : *Prof. Jalaluddin Ahmed*

OP-30. Attenuation of Uremia through Phytotherapy & Functional Foods on Experimentally Induced Male Albino Rats
Dilip Kumar Nandi, Koushik Das, Suchismita Roy, Shreya Mandal, Shrabani Pradhan, Arpita Patra, Arpita Mandal, Animesh Samanta

OP-31. Hepatoprotective Role of Ashwagandha (Withania Somnifera) Root Extract On Gentamicin Treated Rats
Nayma Sultana, Sadia Choudhury Shimmi

OP-32. Prevalence of Eating Disorders in Sindh University Students Using Scoff test
Zulfiqar Ali Laghari, Jamshed Warsi, Ali Muhammad Soomro

OP-33. Osmotic Fragility Status of Red Blood Cell in Patients wirh Chronic Kidney Disease
Monira Khatun, Nayeema Akhter, Jobeda Khanam

OP-34. Study of Vitamin E Supplementation on the Antioxidant Enzyme Systems of Female Indian Athletes
Ananya Chattopadhyay and Pratima Chatterjee

OP-35. Effect of Peanut (Arachis Hypogaea L.) on Dyslipidemia in Young Adults
Hasina Akter, Nasim Jahan, Nayma Sultana

OP-36. Urinary Electrolytes and Serum Lipid Profile in Non-Obese Patients of Essential Hypertension.
Zafar H Tanveer

FREE PAPER SESSION-7 : *Exercise Physiology/Biotechnology/Medical Informatics/Others Male Albino*

Date : 7th December 2014, **Time :** 3:20-4:50 PM, **Venue :** Milton Hall

Chair : *Prof. TM Amatya*

Co-Chair : *Prof. Zahid Hassan*

OP-37. Exercise induced changes in Autonomic Nerve function in Patients with Irritable Bowel Syndrome by power spectral analysis
Karma Tenzin

OP-38. Effects of Physical Exercise and Omega-3 Fatty Acid Supplementation on Bone Mineral Density in Postmenopausal Women
Ayesha Akhter, Nasim Jahan, Nayma Sultana

OP-39. Perceptions of Pakistani Medical Students about Medical Education and their Future Medical Career
Muhammad Javed Iqbal, Tehseen Iqbal, Shah Zaman Latif

OP-40. Cardioprotective effect of Peanut (Arachis hypogaea L.) Extract and Its Combined Action with Propranolol against Isoproterenol Induced Cardiotoxicity in Rats
Farah Naz, Nasim Jahan, Nayma Sultana

OP-41. Effect of Combined Oral Contraceptive Pill (COCP) on Pulmonary Function
Farhana Islam, Nasim Jahan, Nayma Sultana

OP-42. Insight into Designing Novel Series of Lead Molecules Against Dengue Serotypes to Restrict the Interaction with Human NRBP (Nuclear Receptor Binding Protein)
Pratap Parida, RNS Yadav, PK Mohapatra, J Mahanta

OP-43. Cypermethrin mediated sperm nuclear fragmentation, hormonal disruption and anti-steroidogenesis : Possible ameliorating role of Zinc and Alpha Lipoic Acid
Sujata Maiti Choudhury

ABSTRACTS OF ORAL PRESENTATION

OP - 1

A NOVEL COMBINATORIAL CARDIO-THERAPEUTIC APPROACH AGAINST LEAD INDUCED OXIDATIVE STRESS IN RAT HEART

Debosree Ghosh[1], Syed Benazir Firdaus[1], Sudeshna Paul[1] and Debasish Bandyopadhyay[1*]

[1]*Department of Physiology, University of Calcutta, University College of Science and Technology, Kolkata India.*

Background: Lead is a highly toxic heavy metal. Melatonin's ability to act synergistically with other natural antioxidants at low doses has been identified. We wanted to investigate if melatonin and aqueous extract of curry leaves (CuLE) in combination provide better protection against lead induced oxidative stress in rat heart. **Objectives:** The objectives of the present studies are to find out whether Melatonin+ CuLE in combination is capable of providing protection to rat heart against lead acetate induced oxidative damage. **Methods:** Rats were treated intraperitoneally (i.p.) with lead acetate (15 mg / kg body weight) for a period of seven consecutive days. The rats were pre-treated (fed orally) with melatonin (10 mg / kg body weight) and CuLE (50 mg/kg body weight) in combination for seven days. **Results:** Treatment with lead acetate caused accumulation of lead in the cardiac tissue, alterations in the biomarkers of organ damage and oxidative stress, deteriorative changes to the cardiac tissue morphology and collagen content. Involvement of oxidative stress is evident from the alterations in the level of lipid peroxidation and protein carbonyl content, activities of the antioxidant as well as pro-oxidant enzymes and some of the enzymes of the Citric acid cycle and Electron Transport Chain (ETC) following lead acetate treatment. All changes were protected when the rats were pre-treated (fed orally) with melatonin (10 mg / kg body weight) and CuLE (50 mg/kg body weight) in combination for seven days. **Conclusions:** The results of the current studies indicate protective effect of both, melatonin and CuLE to mitigate lead acetate-induced oxidative stress in experimental rats possibly through their synergistic antioxidant mechanism(s).This study opens up avenues for development of an effective drug formulation against lead induced oxidative stress mediated cardiac damage in people who get environmentally or occupationally exposed to lead.

Key words: Lead acetate, melatonin, curry leaves, oxidative stress, tissue injury, synergistic antioxidant mechanism(s)

OP - 2

STRESS AFFECTED IL-6 AND HEMODYNAMIC FACTOR RELATIONSHIP TO PREDICT EARLY ATHEROGENESIS IN YOUNG POPULATION

Ali Muhammad Soomro, Nasim Aslam Channa, Mujadid Qureshi & Zulfiqar Ali Laghari

Department of Physiology, Institute of Biochemistry University of Sindh Jamshoro

Background: Stressful events aggravate the immune changes that may lead to serious physiological alterations of hemodynamics as reported in young age population. The relationship of stress affected IL-6 level and hemodynamic parameters was earlier investigated for probable cause of the 'previous association' in the subjects with heart problems. But the stress affected IL-6 and hemodynamic factor linked ph ysiological disruption towards the 'prediction of early atherogenesis in young population' is of great concern.

Objectives: A cross-sectional study was designed to explore the stress affected IL-6 and hemodynamic factor relationship to probable cause for 'early atherogenesis'. **Methods:** Subject selection was conditioned to stress inventory and IL-6 test during work stress and after conditioned rest gap of two months. 120 successful participants studied twice: during work stress as "stress study" and re-examined after two months conditioned rest as "control study". Obtained data were tabulated and statistically analyzed by SPSS-14. **Results:** Stress affected IL-6 value in the subjects during working hours 'Stress study' and after conditioned rest 'Control study' were different at highly significant level ($p<0.001$). The findings of systolic blood pressure (SBP), diastolic blood pressure (DBP) and heart rate (HR) during work stress show increased by 10.12%, 14.7% and 17.7% respectively. While the correlation coefficient of level of stress affected IL-6 with SBP ($r=0.22$) and DBP ($r=0.194$) was positive at significant level ($p< 0.01$) though increased value of HR found non-significant ($r=0.15$) in population under work stress. **Conclusion:** Findings of this study may pave a way to predict the process of atherogenesis a leading cause of ischemic heart diseases, conditioned to regular follow-up and coherent broad base studies.

Key Words: Work stress, IL-6, Haemodynamics, Atherosclerosis.

OP - 3

EXERCISE INDUCED SPORTS ANEMIA IN FEMALE ATHLETES IN DHAKA CITY

Tanbira Alam[1], Rokeya Begum[2]

Physiology Unit, FoM, AIMST University, Semeling, Bedong, Kedah, Malaysia[1], *Department of Physiology, Enam Medical College, Dhaka, Bangladesh*[2]

Background: Alteration of hematological parameters and serum iron status can influence physical performance. Anemia has negative effects on physical exercise. In athletes, anemia is most frequently associated with iron deficiency. **Objective:** To identify factors responsible for anemia in female athletes in Dhaka city. **Methods:** This cross sectional study was carried out in the Department of Physiology, Dhaka Medical College, Dhaka, Bangladesh from July 2010 to June 2011. For this purpose a total numbers of 105 subjects (70 female athletes and 35 non athletes) were included within the age ranged from 15-25 years. In this study 35 apparently healthy female non athletes were selected as control (Group- A) and according to sporting category 70 female athletes were selected as study group (Group- B) which was further subdivided as (Group-B_1) runners and (Group-B_2) cyclists. Hb%, RBC concentration, serum iron and ferritin level and Total iron binding capacity (TIBC) were measured two and half hour after morning exercise after completion of two months and were recorded for all the groups. Student's unpaired "t" test was done to compare between groups. **Results:** Mean Hb%, RBC Conc, PCV, and ferritin level were significantly ($P<0.001$) lower in athletes than those of control group. Within the study group, runner's serum Iron and serum ferritin level were lower than those of cyclists group **Conclusion:** Strong physical work out results in early stages of iron depletion which might compromise the health and performance of athletes, among them runners were more affected than cyclists.

Keywords: Iron deficiency, Anemia, endurance, exercise and iron status

OP - 4

EFFECTS OF TRAINING ON PULMONARY FUNCTION AMONGST SRI LANKAN NATIONAL LEVEL ATHLETES

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Colombo South Teaching Hospital, Kalubowila, Dehiwala, Sri Lanka[1]. Department of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda, Sri Lanka[2], Post Graduate Institute of Medicine, University of Colombo, Colombo, Sri Lanka[3]

Background: Poor performance of Sri Lankan athletes in the international arena is observed despite regular training. Performance depends on the physical fitness and technical training. Although techniques are addressed, a player's physical fitness is not optimized by the present training programmes. **Objective:** To determine the status of pulmonary functions amongst Sri Lankan national level athletes in comparison to matched controls. **Methods:** National level athletes (n = 63) engaged in resistance and endurance sports were studied. Baseline data were collected by a questionnaire and clinical examination. Pulmonary functions were assessed by a Vitallograph spirometer. Results were compared with age, height, weight and gender matched controls (n= 63). Data were analyzed using SPSS version 16 statistical package. **Results:** Inspiratory function as indicated by the Forced Inspiratory Vital Capacity (FIVC), Forced Vital Capacity (FVC) and Forced Expiratory Volume in 1st second (FEV_1) were significantly higher amongst the athletes ($p< 0.05$). The small air way function as determined by mid stream Forced Expiratory Flow ($FEF_{25\%-75\%}$) of the athletes was similar to the controls ($p>0.05$). The expiratory muscle efficiency as indicated by Peak Expiratory Flow Rate (PEFR) and FEV1/ FVC ratio was not significantly different between the athletes and the controls ($p> 0.05$). **Conclusion:** The study concludes that training programmes for the athletes must consist of exercise schedules to optimize the strength of respiratory muscles. This will achieve optimal pulmonary function amongst athletes. Improvement of pulmonary function may in turn promote better performance of athletes at competition.

Key words: National athletes, Pulmonary function tests, Respiratory muscles, Exercise training, Physical fitness.

OP - 5

PULMONARY INFECTIONS CAUSED BY NOCARDIA SPECIES IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASES

Muhammad Noman Rashid[1], Syed Tousif Ahmed[2], Muhammad Asif Memon[3]

Department of Physiology, Ziauddin University, Karachi, Pakistan

Background: Pulmonary nocardiosis (PN) is a severe and infrequent infection caused by Nocardia species. Nocardia can behave both as opportunistic as well as infectious with a high morbidity and mortality that mainly affects immunocompromised patients. In recent years, an increase in PN cases has been detected among patients with chronic obstructive pulmonary disease (COPD). The factors that is associated with its presence and the determinants of its prognosis remains unknown. The aim of this study is to identify the frequency of nocardia in bronco alveolar lavage fluid (BALF) of patients suffering from chronic obstructive pulmonary disease. **Objective:** Analyze the bronco alveolar lavage fluid (BALF) of patients suffering from COPD for presence of nocardia and determination of

differential leukocyte count. **Methods:** It is a prospective study of COPD patients conducted from March 2012 till October 2012 at Ziauddin hospital in Karachi, Pakistan. The study comprises of 140 patients with chronic obstructive pulmonary disease. All patients have gone through fiber optic bronchoscopy in which 10 cc of BALF was collected. All the bronchoscopies were conducted by pulmonologist. Nocardial profile and differential leukocyte count (DLC) was performed in Ziauddin University laboratory **Results:** All patients were divided in two groups A and B according to gender, and each group was further divided according to age i.e. above 40 years and below 40 years. 68 patients sample showed nocardia species out of 140 patients. No gender variation was noted. However it was observed that in both groups A and B, those patients having age more than 40 years have higher percentage of Nocardia in BALF samples. **Conclusions:** Nocardiosis is considered to be uncommon in Pakistan, but our study suggests that prevalence of Nocardial infections in patients suffering from COPD is quite high and cases are not restricted to the classical immunocompromised host. **Key Words:** Bronchoalveolar lavage (BAL), Bronchoalveolar lavage fluid (BALF), chronic obstructive pulmonary disease (COPD), Pulmonary Nocardiosis (PN), differential leukocyte count (DLC).

OP - 6

EFFECT OF ANTAGONIST OF GONADOTROPIN INHIBITORY HORMONE ON PUBERTY ONSET IN MALE MICE

Imran Amjad

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Background: Sexual inactivity before the puberty onset is secondary to the central inhibition of GnRH release, which does not depend on the negative feedback of gonadal steroids.

Objective: to investigate a possible role of RF9 on central inhibitory tone of GnIH in onset of puberty in male mice. **Methods:** All mice (n=34) in experimental group were subjected to intra-peritoneal administration of RF9 for five days at age of 27 days. The treatment was continued twice daily for 5 days (up to 31 days of age). All mice in vehicle treated groups (n= 34) were administered with saline and left for their natural growth housed in hygienic and well ventilated conditions at 24^{O}C. Food and water was made available ad libitum. Body weight, blood samples, excision of testicular tissue of the mice of both groups was worked out after every five days. All data were expressed as mean ± standard error of mean and $p<0.05$ was taken as an indication of significant difference. Data were analyzed by using version 17 SPSS. **Results:** All animals in RF9 treated group showed low body weight gain than the vehicle treated control group of animals. However, there was no significant ($p > 0.05$) difference between mean body weights of the two groups. Animals treated with RF9 showed early preputial separation i.e. at day of 33 - 34 when there was significant difference ($p < 0.05$) between two groups of animals. It was evident that appearance of spermatozoa in seminiferous tubules of RF-9 treated mice became affected earlier i.e. by 32 days and 37 days of age. There was significant ($p < 0.05$) difference observed at the age of 58 days between RF9 treated group and vehicle treated group. Difference for plasma testosterone observed between RF9 treated group and vehicle treated group at any of age for testosterone concentration was non-significant. **Conclusion:** It is concluded from the current findings that RF9 cause early onset of puberty by enhancing the development of gonads and appearance of spermatozoa and it also inhibited the GnIH on testicular tissue. The present study indicates a novel role for testicular RF9 signaling in regulation of neuroendocrine reproductive axis in male mice.

Key words: RF9, Puberty onset, Mice, Spermatozoa, GnRH, GnIH.

OP - 7

PRETERM DELIVERY: ROLE OF ZINC AND COPPER

Masuda Sultana[1], Nasim Jahan [2], Nayma Sultana[3]

[1]Associate Professor, Dhaka Community Medical College, [2,3] Professor, Department of Physiology, Sir Salimullah Medical College, Dhaka

Background: Preterm delivery is a very challenging obstetric complication in Bangladesh. Reduced serum Zn and Cu concentration of the pregnant mother may have some role in causing preterm delivery. **Objectives:** To measure serum zinc and copper level in mother with preterm delivery and also to observe their relationship with fetal outcome. **Method:** This cross sectional study was carried out in the Department of Physiology, Sir Salimullah Medical College Mitford Hospital, Dhaka, during the period of 1st January 2009 to 31st December 2009. A total number of 136 subjects were included in this study, of whom 27 were full term delivery mother with their respective neonates (control) and another 27 were preterm delivery mothers with their respective neonates (study group). Age ranged of preterm and full term mother were from 20-40 years. Again, 28 non pregnant women with age range from 20-30 years were taken as reference value. Statistical analysis was done by using appropriate method as applicable. **Results:** Mean serum Zn and Cu level were significantly lower ($p<0.001$) in preterm mother in comparison to those of full term mother. Again, cord serum Zn and Cu concentrations were significantly ($p<0.001$) lower in preterm neonates when compared with those of full term neonates. **Conclusions:** The present study revealed a lower level of ser zm zinc and copper in pre-term delivery mother and their neonates. These hypozincemia and hypocupremia may be responsible for poor fetal outcome.

Key Words: Pre-term, Copper, Zinc

OP - 8

EFFECT OF AN IODIDE BLOCKER – PERCHLORATE ON FEMALE REPRODUCTION IN ADULT RATS

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Background: Perchlorate contamination is widespread on account of industrial as well as natural sources. It is also used as an antithyroid drug. Perchlorate competitively inhibits iodide transport at the level of Sodium-Iodide Symporter (NIS) in the thyroid gland, affecting thyroid structure and function. Thyroid on the other hand influences reproductive axis. **Objectives:** To investigate the effect of perchlorate exposure on the structural and functional status of reproductive system in female rats. **Methods:** Twelve adult female virgin albino (Wistar strain) rats of 110±10 gm were divided into two groups. The Experimental group was administered potassium perchlorate orally while the Control group was given distilled water for a period of 28 days. Estrous cycle was studied regularly by examining vaginal smear of the animals. At the end of the treatment, the animals were weighed and sacrificed. The ovarian and uterine weights were measured and histological sections were prepared. The activity of the steroidogenic enzymes, 3 HSD and 17 HSD were assayed alongwith the measurement of the serum levels of estradiol and estriol to assess the structural and functional alterations in the reproductive system. **Results:** Perchlorate

administration caused irregularity in the estrous cycle, with a prolonged estrous stage. Histological studies showed ovarian hypertrophy with numerous corpus luteum and disoriented lumen in the uterus with numerous secretory glands. Increased activity of the steroidogenic enzymes (3 HSD and 17 HSD) was found. Serum estradiol level decreased whereas serum estriol level was increased.

Conclusion: Perchlorate caused structural and functional alterations in the ovary. All these changes suggest that perchlorate has potent stimulatory activity on female reproductive system, unlike other antithyroid drugs. However further studies are required to establish the findings.

Keywords: Perchlorate, Ovary, Female Reproduction, Iodide Blocker, Steroidogenic enzymes

OP - 9

RELATIONSHIP OF SERUM FASTING INSULIN AND PROLACTIN WITH GONADOTROPINS IN INFERTILE WOMEN

Shamima Bari[1], Rokeya Begum [2], Qazi Shamima Akhter [3], Tanbira Alam [4], Kadija Begum [5]

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Background: Infertility has become a global health problem affecting 8-10% of couple in the world wide and 12-15% in Bangladesh. Increase levels of serum fasting insulin and prolactin have been implicated as a cause of infertility. **Objective:** To find out the association of serum fasting insulin and prolactin levels with gonadotropins in infertile women. **Method:** This cross sectional study was conducted in the department of Physiology, Dhaka Medical College , Dhaka from July 2010 to June 2011 .A total number of 150 female healthy subjects age ranged from 20 – 40 years were included in this study. Out of them100 infertile women were selected as study group (group B).Group B was subdivided into two groups, group B_1 and B_2. Group B_1 consisted of 50 primary infertile women and group B_2 consisted of 50 secondary infertile women .Rest 50 age matched apparently healthy parous women were considered as base line control group (group A).All the study subjects were selected from out patient department of infertility unit, BSMMU, Dhaka. The control subjects were selected by personal contact. The study parameters were included serum fasting insulin, prolactin , serum FSH and LH , fasting blood glucose and blood glucose two hours after break fast (2HABF). **Results:** In this study, the mean serum fasting insulin and prolactin levels were significantly higher in infertile women than those of parous women . Within the study group serum fasting insulin was higher in primary infertile women and serum prolactin level was higher in secondary infertile women both were statistically not significant . In addition, fasting blood glucose level was almost similar in all groups which were within normal limits. But, blood glucose 2HABF was higher in secondary infertile women than those of parous women which was statistically significant. Again, serum FSH and LH levels were significantly lower in infertile women than those of fertile women . In addition, Serum prolactin level was significantly positively correlated with serum insulin in primary infertile women . **Conclusion:** serum fasting insulin and prolactin level were significantly hi gher in infertile women than those of healthy parous women. These alterations may lead to menstrual irregularities, ovulatory dysfunction and infertility.

Keywords: infertility, prolactin , insulin, FSH, LH.

OP - 10

SEMINAL PLASMA LEAD AND CADMIUM AND SPERM DNA FRAGMENTATION IN MALE PARTNERS OF INFERTILE COUPLES INVESTIGATED AT A SELECTED CENTRE

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Background: Lead and cadmium are known to cause DNA fragmentation by producing reactive oxygen species. **Objective:** This study was done to determine the association between seminal plasma lead and cadmium concentration and sperm DNA fragmentation. **Methods**:Male partners (n=300) of couples investigated for infertility at a private tertiary care centre were recruited from August 2010 to March 2012. Seminal fluid analysis was done according to WHO guidelines. Seminal plasma lead and cadmium were estimated by Graphite Furnace Atomic absorption spectrophotometry. Pb positive(n=20), Cd positive(n=20) and the control group(n=20) with both Pb and Cd negative men were identified for the assessment of sperm DNA fragmentation expressed as DNA fragmentation Index (DFI) using an improved Sperm Chromatin Dispersion test. The association between Pb and Cd in seminal plasma and DFI was determined using One way ANOVA. The means of seminal plasma Pb and Cd concentration of subjects with high DNA fragmentation (DFI 30%) and low DNA fragmentation (DFI < 30%) were compared using the t-test. Pb and Cd concentration and DFI were correlated using Pearson correlation. **Results:** The mean DFI% (SD) of the Pb[39.80 (25.08)] and Cd[22.85 (15.87)]positives were higher than the controls[22.65 (11.29)] with a significant increase in Pb positives ($p<0.05$). Men with a high DFI (30% or more) had a significantly ($p<0.05$) higher Pb concentration (SD) when compared to subjects with low DFI% [30.1µg/dl(7.83)] vs.[5.57µg/dl(2.10)]. A significant positive correlation ($r = 0.35$, $p<0.05$) was found between seminal plasma Pb concentration and sperm DNA fragmentation (DFI) but there was no correlation ($r=0.17$, $p>0.05$) between seminal plasma Cd concentration and DFI. There was a significant negative correlation between DFI and sperm concentration, progressive motility, normal morphology and viability. **Conclusions:** sperm DNA fragmentation was higher in both lead and cadmium positives when compared to the controls. Lead in seminal plasma was associated with sperm DNA fragmentation.

Key words: Seminal plasma lead and Cadmium, DNA fragmentation.

OP - 11

COGNITIVE FUNCTIONS AND PSYCHO SOCIAL DETERMINANTS AMONG SRILANKAN ADOLESCENTS

Kaththiriarachchi L S[1], Hewage DC[2] , Wimalasekera S W[2], Mendis ALS[1]

[1]Division of Physiology, Department of Pre-clinical Sciences, Faculty of Medicine, General Sir John Kotelawala Defence University, Rathmalana, Sri Lanka; [2]Department of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda, Sri Lanka

Background: Adolescents are often subject to stress associated with psychosocial adversities. Sri Lankan adolescents too experience stress due to adversities in the school and home environments such as reduced access to education, and competitive examinations. Environmental stressors have

been recognized to cause negative effects on cognitive development amongst children worldwide. However the impact of stressors on cognitive development of adolescents is unknown. **Objectives**: To determine cognitive functions, and psychosocial determinants among periurban adolescents and to determine the association between cognitive function test scores and stress scores amongst them. **Methodology:** A cross sectional analytical study was conducted on 80 adolescents attending government schools in a peri-urban area. The subjects were selected according to the inclusion criteria. An interviewer administrated pretested questionnaire was used to determine the socio demographic factors. Psychosocial determinants were obtained by a pretested stress questionnaire. Cognitive functions were assessed by Test of Non Verbal Intelligence (TONI - 3) and four subtests of Weschsler Intelligence tests (WISC-IV). **Results:** Data were collected from 80 subjects (78% males). The mean WISC –IV estimated full scale IQ scores were similar between the females and the males (mean 34.3±8.6 SD for the females VS 31.7 ± 8.4 SD for the males; *p=0.25)*. The mean scores for TONI was statistically significantly higher for the females than the males (mean 96.2 ±12.9 SD VS mean 88.2±9.7 SD, p = 0.006). WISC and TONI cognitive function scores were negatively correlated with the stress scores. There was a statistically significantly negative correlation between the stress scores and the cancellation sub test scores of the WISC (Pearson's correlation coefficient=- 0.294, p = 0.009). **Conclusion:** The study confirmed the association between adolescent's stress level and cognitive functions. Measures should be taken at school and at home to reduce stress levels among adolescents to enhance cognitive development.

Key words: Adolescent, Cognition, Cognitive function tests, Stress factors

OP - 12

ROLE OF INTERVENTIONAL NEUROLOGY IN PRACTICAL PURPOSE

Md. Shahidullah

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Background: "Interventional Neurology" comprises the delivery of minimally invasive, targeted treatments, performed using imaging in Neurological disease. The principles of angiography for diagnosis was started from the 1920s and for treatment from the 1960s. For cerebral vasculature the technique started in the 1970s. Contrary to coronary angiography, where the image includes both the blood vessels and the overlying structure; in cerebral angiogram, bones and soft tissue images are subtracted to visualize blood vessels more accurately. So, this angiogram is called Digital Subtraction Angiography (DSA). DSA gives dynamic imaging of brain blood flow by the use of iodine signal and digital processing of image. Objective: To observe the pattern of blood flow, in contrast to other modalities of brain angiogram and also to get idea about arterial phase, capillary phase and venous phase all together. Also there is an advantage to select the pictures according to clinical value. **Methods:** Purpose of this superspeciality has two broad perspective: Diagnostic and Therapeutic. Both of the procedures can be applied in both brain and spinal cord. Uses of Interventional Neurology: A) Diagnostic : Cerebral DSA & Spinal DSA, B) Therapeutic: Acute Stroke Management, Prevention of Stroke--- Angioplasty & Stenting, Coiling for SAH, Embolization for Arterio-Venous Malformation (AVM) and Dural Arterio-Venous fistula (DAVF), Embolization for vascular tumour, ex: Meningioma, angiofibroma, Embolization for epixtaxis, Venous sampling **Results:** Acute Stroke Management: **Intravenous fibrinolysis** with rtPA is a recommended treatment option which usually given within 3 to 4.5 hours. Other than this some options also exists. **Intra arterial thrombolysis** is one of them. In that case, thrombolytic agents are given directly to the artery occluded by embolus. Here chances of recanalization specially in large artery is more and occlusion in more proximal location as intracranial internal carotid artery and proximal MCA is less resistant to thrombolytics.

Mechanical Thrombectomy is also suitable alternative for stroke management. It is suitable for large artery occlusion, where patients are ineligible for fibrinolytic therapy and in severe stroke disability. Two common devices have received FDA approval: Concentric MERCI and Penumbra Suction System. **Prevention of Stroke**:Balloon angioplasty and / or Stent placement can be done in prevention of stroke for athero-sclerosis stenosis. It can also be done in dissection, cerebral vasospasm. There are usually separate self expanding carotid stent for this endovascular treatment. Carotid stenting is currently confined to those with greater than 50% symptomatic stenosis or greater than 75% asymptomatic stenosis. **Treatment for aneurysm:** Aneurysm rupture causes Sub Arachnoid Hemorrhage which is a devastating disease. Re rupture of aneurysm is usually fatal. For that two treatment options are present: Surgical clipping and Endovascular Coiling. Clinical outcome of both the procedures is comparable. **Treatment of AVM and AVF:** There are three treatment options. Surgey, Radiaton, and Endovascular Embolization. The primary agents used for AVM embolization are : nBCA, Onyx, Liquid alcohol etc **Treatment in tumour:** Embolization can be done before surgery in highly vascular tumour as meningioma, angiofibroma etc. In that case embolization materials are those by which we can achieve transitory effect like PVA, gelfoam sponge etc. **Conclusions:** DSA gives dynamic imaging of brain blood flow by the use of iodine signal and digital processing of image. It also helps to select the pictures according to clinical value.

Key Words: DSA, Stroke, Embolism

OP - 13

EYE PROBLEMS AMONG WORKERS IN RE-ROLLING INDUSTRY

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Background: Re-rolling industry, which turns scrap material into finished steel, is one of the most important suppliers of the construction industry, where the workers are exposed to high temperature. Usually these workers are from low socio-economic group and unaware about the risk of exposure without proper Personal protective equipments. **Objective:** the aim of this study was to explore the eye problems among the workers working in rerolling industry. **Methods**: A descriptive cross sectional study was conducted among the workers of selected re-rolling mills to find out the problems in the eyes of the workers, who working in the environment of high temperature. Data was collected through face to face interview of the respondents by using a pre-tested questionnaire. It was conducted from April to June 2007 in selected re-rolling mills. Sample size was 200. Data was collected by interview using pre-tested questionnaire and check list. Eyes were examined using standard procedure by Ophthalmoscope. Data obtained entered in SPSS program for analysis. **Results**: The study was conducted among purposively selected 200 respondents, out of whom 157 (78.5%) were production workers and 43(21.5%) were engaged with office work. Among the Production workers 83(52.9%) worked in the temperature less than 40 degree Celsius, 40(25.5%) worked in the temperature in 100-300 degree Celsius and 34(21.7%) worked in the environment of more than 300 degree Celsius. Eye examination revealed that among the production workers 50(31.8%) had conjuctival Inflammation, 44(28%) had corneal inflammation, 27(17.19%) had partial corneal opacity and 7(3.5%) had partial opacity in lens. The proportion were found high among the workers who worked under (100-300) °C temperature and above. Statistically it was found significant ($p<0.05$). Among the total respondents it was observed that **91(45.5%)** had redness of eyes, 115(57%) had watering from eye, 52(26%) had itching and 52(26%) had visual problems. Though

they had different types of eye problems but none of them use eye glass as PPE (personal protective equipments).Most of the complaints found among the production workers and who were working for longer time. **Conclusion:** The study concludes that different types of eye problems were present among the worker in production site, which might be attributable to exposure to extremely hot humid working environment. The study findings will enable the health policy makers to aware the worker about their job risk and protective measures.

Key words: workers, temperature, opacity, inflammation, re-rolling mill.

OP - 14

EFFECT OF OYSTER MUSHROOM (PLEUROTUS FLORIDA) ON STRESS INDUCED DEPRESSION IN WISTAR ALBINO RATS

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Background: Stress induced depression is a common type of depression. Many anti-depressant drugs are available which have side effects. Oyster Mushroom (Pleurotus florida) may have some anti-depressant effect in reducing stress symptoms **Objective:** To observe the effect of Oyster mushroom on stress induced depression in Wistar albino rats **Methods:** An experimental study was carried out in the Department of Physiology, Sir Salimullah Medical College (SSMC), Dhaka. 36 Wistar albino male rats, apparently same weight (150 to 180 g) and age (90 to 100 g), were divided into control and experimental groups. Control groups were Baseline control group (Group A, n=12) and Stress induced depressed control group (Group B, n=12). Experimental group was Stress induced depressed with mushroom treated group (Group C, n=12). All groups received basal feeding for 28 days. Depression was induced by restraint stress in Group B and C. Group C received Oyster mushroom extract (200 mg/kg body weight, orally) for the same period. Sucrose Preference Test (SPT), Tail Suspension Test (TST), Forced Swim Test (FST) were performed on day-29. . Then on day-30 fasting blood glucose level was measured. Brain and adrenal tissue were taken for histological examination. **Results:** Sucrose preference (%) and period of climbing in FST were significantly ($p<0.001$) higher and period of immobility in TST and FST were significantly ($p<0.001$) lower in Group C in comparison to Group B but were almost similar to Group A. Period of swimming in FST was higher in Group C than Group B ($p<0.05$) and Group A. Fasting blood glucose level was significantly ($p<0.001$) lower in Group C in comparison to Group B and was almost similar to Group A. Adrenal and brain histology was normal in Group C in comparison to Group B. **Conclusion:** Oyster mushroom has anti-depressant effect may be due to some of its active components.

Key word: Stress-induced depression, Anti-depressant, Mushroom

OP - 15

COGNITION & METACOGNITION: THEIR ROLE IN DEVELOPING EQ

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Background: Leadership is a set of traits and is needed at all levels. A leader should have great thinking skill (cognition), he knows himself (metacognition) and benefits the society (Emotional

intelligence). Medical undergraduates are expected to develop these leadership qualities as they advance from preclinical to clinical years due to increased interaction with patients but there is paucity of sufficient research in this field. **Objective:** To determine the role of clinical training on development of leadership traits and emotional intelligence among undergraduate medical students. **Methods:** Current cross-sectional study was designed for qualitative and quantitative comparison of 12 leadership traits among 100 preclinical & clinical medical undergraduates at CMH Lahore Medical and Dental College on 5 point-likert-scale. Their EQ was measured quantitatively as well as qualitatively by using free online test by INSPIR3 based on 10 multiple-choice questions. **Results:** Clinical medical undergraduates were found to possess leadership skills significantly higher than preclinical students. Likewise, the EQ of clinical students was significantly higher than preclinical ones. **Conclusion:** Medical training enhances cognition and metacognition, which further has its impact on development of emotional intelligence. Awareness of leadership qualities among preclinical students by introducing such questionnaires will facilitate them to rediscover themselves as academic and professional leaders and inculcate these traits if they are lacking in them. This will further promote the growth of their EQ, enabling them to place themselves as successful leaders in adverse circumstances.

Key words: Leadership, Cognition, Metacognition, EQ.

OP - 16

PARASYMPATHETIC NERVE FUNCTION STATUS IN FEMALE WITH RHEUMATOID ARTHRITIS

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Background: Sudden cardiac death in patients with Rheumatoid Arthritis has been attributed to the decreased vagal drive to the heart. **Objective:** To assess cardiac parasympathetic nerve function status in patients with Rheumatoid Arthritis (RA). **Methods:** This cross sectional study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Shahbag, Dhaka from January to December 2010. Sixty female RA patients aged 185ti years were included in the study group. They were enrolled from the Out Patient Department of Rheumatology Wing of the Department of Medicine, BSMMU, Dhaka. For comparison age matched thirty apparently healthy females were also studied as control. To assess parasympathetic nerve function status, all the subjects were examined by three nonivasive cardiovascular reflex tests such as heart rate response to valsalva maneuver (valsalva ratio), heart rate response to deep breathing and heart rate response to standing (30th :15th ratio). For statistical analysis independent sample t test was used. **Results:** Mean values of valsalva ratio, deep breathing test and 30^{th}:15^{th} ratio were significantly ($p<0.001$) lower in rheumatoid arthritis patients compared to those of healthy control. **Conclusion:** From this study it may be concluded that lower cardiac parasympathetic nerve activity characterized the autonomic nerve dysfunction in patients with Rheumatoid Arthritis.

Key words: Rheumatoid Arthritis, Parasympathetic nerve function, cardiovascular reflex test.

OP - 17

RENAL SYMPATHETIC DENERVATION SUPPRESSES INSULIN RESISTANCE AT PRE-DIABETIC STAGE IN OLETF RATS

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Background : Overactivity of the sympathetic nervous system has been shown as one of the major contributors to the complex pathophysiology of hypertension, hyperinsulinemia and diabetes. Renal sympathetic denervation (RDX) improves glucose metabolism and insulin sensitivity in addition to reducing blood pressure in patients with resistant hypertension. **Objectives**: We investigated the effects of renal sympathetic denervation at early age on the development of hypertension and glucose metabolism in type 2 diabetic rats with possible underlying mechanisms. **Methods:** Uninephrectomized (at 5 week of age) Otsuka Long Evans Tokushima Fatty (OLETF) and Long Evans Tokushima Otsuka (LETO) were underwent RDX at 6 week of age. RDX-LETO and -OLETF rats had almost undetectable kidney tissues norepinephrine (NE) levels. RDX did not affect blood pressure profiles and heart rate at pre-diabetic stage evaluated by telemetry system. Furthermore, the whole body insulin sensitivity was assessed by the hyperinsulinemic-euglycemic clamp study at 20 week of age. **Results**: RDX-OLETF rats showed markedly lowered in the blood glucose, plasma insulin levels and their area under the curve in response to oral glucose loading during the oral glucose tolerance test compared to non denervated OLETF rats. Again, RDX-OLETF rats showed an improved glucose infusion rate than non denervated OLETF rats. RDX suppressed plasma and renal tissues NE levels and improved *in vivo* glucose uptake by adipose tissues, soleus muscle and liver tissues in OLEFT rats. Furthermore, RDX suppressed sodium dependent glucose transporter 2 (SGLT2) translocation and expression in renal proximal tubular brush border membrane as detected by immunofluorescence and western blot followed by markedly increased urinary glucose excretion in OLETF rats. **Conclusions:** Renal sympathetic denervation improves impaired glucose metabolism, insulin sensitivity through suppressing sympathetic hyperactivity resulting increased glucose uptake by the tissues, and suppresses SGLT2 expression leading to enhanced renal glucose excretion without blood pressure reduction at pre-diabetic stage in type 2 diabetic OLETF rats.

Key Words: Renal sympathetic denervation (RDX), blood pressure, glucose intolerance, insulin resistance, type 2 diabetes, sodium-glucose cotransporter 2 (SGLT2)

OP - 18

STUDY OF SPIROMETRIC LUNG FUNCTION STATUS IN TYPE 1 DIABETIC PATIENTS IN BANGLADESH

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Background: Diabetes mellitus is a chronic and debilitating disease. Its complications give rise to micro and macrovascular diseases which affect eyes, kidneys, heart, blood vessels, nerves and also lungs. There may be a relationship between type-1 diabetes and reduced lung function. Objectives: To observe some aspects of lung functions in type-1 diabetic male in Bangladesh. Methods: This cross-sectional study was carried out in the Department of Physiology, Sir Salimullah Medical

College, Dhaka from 1st January 2009 to 31st December 2009. A total number of sixty (60) male subjects, age ranged from 18-30 years were taken. Among them experimental group consisted of thirty (30) male type-1 diabetic patients. Control group consisted of thirty (30) apparently healthy age, sex, BMI and socioeconomic status matched non-diabetic persons. Lung function parameters like FVC, FEV1, PEFR, and MVV of all the subjects were measured by a digital spirometer. Serum blood glucose and glycosylated hemoglobin (HbA1c) of diabetic patients were measured by usual laboratory technique. Data were analyzed by Student's 't' test and pearson's correlation coefficient test. Results: All the spirometric parameters like FVC ($p < 0.001$), FEV1 ($p < 0.001$), PEFR ($p < 0.001$), FEF25-75 ($p<0.001$), MVV ($p <0.001$) and FEV1/FVC% ($p < 0.05$) were significantly lower in type-1 diabetic patients in comparison to those of apparently healthy non-diabetic male. Again FVC ($p <0.001$), FEV1 ($p < 0.001$), PEFR ($p < 0.05$), MVV ($p<0.05$) were negatively correlated with HbA1c. Whereas, FEF25-75 was negatively and FEV1/FVC% was positively correlated with HbA1c, but these values were statistically non-significant. Conclusion: impairment of some lung functions may be found in type-1 diabetic male due to poor glycemic control.

Key words: Type-I diabetes mellitus, Lung function tests, Glycosylated hemoglobin

OP - 19

ANTI-DIABETIC EFFECT OF PEANUT (ARACHIS HYPOGAEA L.) EXTRACT IN ALLOXAN INDUCED DIABETIC MALE RATS

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Background: Diabetes mellitus is a heterogeneous group of metabolic disorders with micro and macrovascular complications which are the major causes of morbidity and mortality in diabetic patients. Peanut due to its anti-oxidant property can reduce blood glucose level and may reduce the risk of diabetes. **Objective:** To observe the anti-diabetic effects of peanut (Arachis hypogaea L.) in alloxan-induced diabetic male rats. **Method:** This experimental study was carried out in the Department of Physiology, Sir Salimullah Medical College (SSMC), Dhaka between July 2012 and June 2013. Fifteen apparently healthy wistar albino rats, aged 90-120 days, weighing 160-200 g were included in the experimental group (Group C, alloxan-induced diabetic with peanut treated group). Age and weight matched 20 wistar albino rats without peanut supplementation was taken as control and divided into Baseline control (Group A, n=10) and Alloxan-induced diabetic control group (Group B, n=10). All groups of animals received basal diet for 21 consecutive days. In addition to basal diet, animals of alloxan induced diabetic control group received alloxan intraperitoneally (170mg/kg body weight) only on the first day of the study. Moreover, animals of alloxan-induced diabetic with peanut treated group in addition to alloxan intraperitoneally (170mg/kg body weight) only on the first day of the study, also received peanut extract (2 ml/day; orally) for 21 consecutive days (started from day-1 of study period). After 16 hours of fasting blood samples were collected from tail vein of all rats on day-1 and day-3. Then all the rats were sacrificed on day-22. Then blood was collected from the heart and the pancreas was removed and preserved in 10% formalin for histological processing. Fasting blood glucose level was measured by using glucose oxidase method. Serum insulin and blood HbA_{1c} levels were measured by using AxSYM system and immunoassays method respectively. The levels of serum electrolytes such as sodium and potassium ions were measured by using selective electrode electrolyte method. Histology of pancreas was also done by using standard laboratory procedure. The statistical analysis was done by one way ANOVA, Bonferroni and Paired t-test as applicable. **Result:** The % change of body weight was significantly ($p<0.001$) lower in alloxan-induced diabetic control whereas, this level was almost similar in experimental group in comparison to that of baseline control.

The weight of pancreas was significantly lower in alloxan-induced diabetic control group ($p<0.001$) and experimental group ($p<0.05$) when compared to that of baseline control, whereas this level was significantly ($p<0.05$) higher in experimental group than that of alloxan-induced diabetic control group. The mean fasting blood glucose level on day-3 was significantly ($p<0.001$) higher in alloxan-induced diabetic control and experimental group in comparison to that of baseline control. Then this level of experimental group was decreased towards the level of baseline control and showed no significant difference between these two groups on day-22. Moreover, significantly ($p<0.05$) lower level of serum insulin whereas significantly higher levels of HbA_{1c} were observed in alloxan-induced diabetic control ($p<0.001$) and experimental group ($p<0.05$) in comparison to those of baseline control group. Again, significantly ($p<0.001$) higher level of serum insulin whereas lower level of blood HbA_{1c} were observed in experimental group than those of alloxan-induced diabetic control. However, the mean serum sodium and potassium ion levels of all the groups of animals were almost similar and the differences were not statistically significant. In this study, histological examination of pancreas revealed moderate histological changes in 100% of the rats in alloxan-induced diabetic control group. Moreover, 93% of rats showed almost normal histological architecture, whereas 7% showed only minimal histological changes of pancreas in peanut and alloxan treated group. **Conclusion:** From this study, it can be concluded that peanut (Arachis hypogaea L.) has anti-diabetic effect by reducing fasting blood glucose, HbA_{1c} levels, by increasing serum insulin level and also by improving micro architecture changes of pancreatic tissue. This anti-diabetic effect may be due to its high MUFA content and anti-oxidant property.

Key word: Anti-diabetic, Peanut, Alloxan.

OP - 20

RELATIONSHIP OF PARATHYROID HORMONE AND OBESITY IN BANGLADESHI SUBJECTS

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Background: Obesity is an emerging risk factor for various endocrine and metabolic dysfunctions and in particular has recently been associated with elevated parathyroid hormone (PTH) secretion. Such relative hyperparathyroidism may in turn increase the risk of osteoporosis in obesity. **Objective:** Thus, the present study assessed the relationship between PTH concentration and obesity in Bangladeshi subjects. **Method:** For this, 120 subjects (25-50 years, both sexes) were recruited. These included 60 apparently healthy, non-obese (control) and 60 obese (case) subjects. Both control and case groups were further subdivided into males and females. All subjects were selected during 2010 from the Urban Primary Health Care Project (UPHCP), PA-2, Dhaka City Corporation, Dhaka and by personal contact. All subjects were apparently healthy; post-menopausal women were excluded. **Results:** Serum intact parathyroid hormone (iPTH) concentrations were significantly higher in obese males than in male controls (29±5 vs. 21±2 pg/ml respectively; $p<0.001$ by Unpaired Student's t test). Similarly, iPTH concentrations were elevated significantly in obese versus non-obese females (38±16 vs. 25± 3 pg/ml respectively; $p<0.001$). With regards gender-specific differences, serum iPTH concentrations were also significantly higher in females than males in both non-obese (+19.8%; $p<0.001$) and obese groups (+30%; $p<0.01$). Serum total calcium concentration was significantly lower in obese than non-obese males (8.1±0.6 vs. 8.6±0.3 mg/dl;

p<0.001). Indeed, hip circumference (Hip C) was negatively and significantly correlated with serum iPTH concentrations in obese males (r=-0.391; p<0.05). Meanwhile, serum total calcium concentrations were positively and significantly correlated with BMI & Hip-C in obese females (r= +0.397, +0.407 respectively; p<0.05). **Conclusion:** Therefore, obesity is associated with increased PTH secretion. Such hyperparathyroidism was associated, at least in males, with significant hypocalcaemia. It remains to be determined whether the relative hyperparathyroidism observed here contributes to the obesity, or, is a consequence of it. In either case, these data demonstrate that increased PTH secretion should be investigated as a possible contributor to the morbidity and mortality of obesity.

Key words: Intact parathyroid hormone, BMI, Hip-C, Obese.

OP - 21

RARE SUGAR D-PSICOSE PREVENTS PROGRESSION AND DEVELOPMENT OF DIABETES IN TYPE 2 DIABETES MELLITUS (T2DM) MODEL OTSUKA-LONG-EVANS-TOKUSHIMA FATTY (OLETF) RATS

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Background: Prevalence of global obesity has emerged as the single most life-style-related health problem, mostly due to excess calorie leading to one of its complications, insulin resistance followed by concomitant increase of T2DM. To cope with the increased demand of insulin pancreatic b-cells become over active and in turn hypertrophic and injured, leading to b-cell failure followed by glucose intolerance. This circumstance demands age-adjusted balanced food intake in obese-tendency subjects. **Objectives**: We introduce a zero-calorie sweet-taste food additive, D-psicose, a rare sugar produced in Kagawa University, which has been evaluated as a unique metabolic regulator against hyperglycemia and hyperlipidemia, and thus represents as a safe and non-toxic compound to maintain blood glucose levels through the preservation of pancreatic -cells in OLETF rats. **Methods:** Treated OLETF rats were fed 5% D-psicose in drinking water for 60 weeks. Control OLETF and non-diabetic control, LETO rats were fed water only. Body weight, food and drink intake were measured weekly, and blood glucose and insulin monthly. Serum was collected for biochemical analysis. Oral glucose tolerance test was performed. Liver, pancreas and other organs were preserved and stained as per need. **Results:** D-psicose significantly controlled abdominal fat accumulation and thus prevented excess body weight increase. D-psicose improved insulin resistance through constant maintenance of blood sugar levels. Oral glucose tolerance test showed reduced blood glucose levels suggesting also the improvement of insulin resistance. D-Psicose significantly attenuated progressive b-islet fibrosis and preserved islets, evaluated by hematoxylin eosin staining, Masson s trichrome staining and immunostainings of insulin and a-smooth muscle actin. Serum levels of proinflammatory and anti-inflammatory adipocytokines were also controlled well by D-psicose treatment. **Conclusions:** Rare sugar D-psicose might be a promising strategy for the prevention of obesity, maintenance of blood sugar, and preservation of pancreas b-cells.

Keywords: D-psicose, Obesity, T2DM, Insulin resistance, Pancreas b-cells

OP - 22

ASSESSMENT OF INSULIN RESISTANCE IN ADULT MALE WITH ESSENTIAL HYPERTENSION

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Background: The patients with essential hypertension are increasing in Bangladesh and all over the world. In essential hypertension, there may be development of insulin resistance and hyperinsulinemia. An association between essential hypertension and defective insulin secretion has been identified. As insulin resistance represent the underlying mechanism in essential hypertension, it may act as important clinical and biochemical determinants and will provide further information to minimize hypertension related other complications. **Objective**: To observe the insulin resistance in adult male with essential hypertension. **Methods:** This cross sectional study was conducted in the Department of Physiology, Dhaka Medical College, Dhaka from July 2012 to June 2013. Protocol of this study was approved by Ethical Review Committee of Dhaka Medical College. A total number of one hundred fifty male subjects were selected with age ranging from 25 to 45 years. Seventy five male essential hypertensive were enrolled from Out- patient Department of Medicine, Dhaka Medical College Hospital, Dhaka. Age matched seventy five apparently healthy males were studied as control. Insulin resistance was assessed by HOMA-IR method. For that, fasting serum insulin level was measured by ELISA and blood glucose by glucose oxidase method in the laboratory of Department of Physiology and Molecular Biology, BIRDEM Academy, Dhaka. For statistical analyses, unpaired Student's 't' and Pearson's correlation coefficient (r) tests were performed. **Results:** This study reveals that essential hypertension has positive and significant relationship with fasting serum insulin level and insulin resistance. Conclusion: Incidence of insulin resistance is higher in essential hypertensive subjects in comparison to the control subjects.

Key words: Essential hypertension, Fasting serum insulin level, fasting blood glucose level, HOMA- IR

OP - 23

EXCESS IODINE IMPARTS OXIDATIVE STRESS IN SOME TARGET TISSUES OF THYROID HORMONES

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Background: Free radicals are known to damage cell with its components. Generation of cellular oxidative stress under excess iodine exposure on thyrocytes is a well known phenomenon but the likely effects on its principal target tissues remains to be evaluated and is less clearly highlighted in the available literature. **Objectives:** The present study was thus undertaken to ascertain the free radical generation in testis, liver and kidney and also to determine the testicular, hepatic and renal antioxidant profiles with varying excess iodine administration. **Methods**: The morphological/histological alterations in testis, liver and kidney with serum corticosterone levels including the enzymatic changes (SOD, Catalase and GPX) and lipid peroxidation levels in all the target organs were studied and interpreted. Serum GOT and GPT values were also assayed. Urinary iodine excretion pattern was also noted after the treatment with excess iodine in the experimental animals and compared with respective control groups. **Results:** Significant alterations were noted in

all the studied parameters after exposure of excess iodine. Increased SGOT and SGPT levels with a concomitant alteration in all the antioxidant profiles were observed. The excretion pattern of iodine was also increased. **Conclusions**: Overall results reveal that sudden exposure of excessive iodine leads to generation of free radicals in the target tissues of thyroid hormones with considerable morphological / histological changes. All these clearly suggests that excess iodine plays a pivotal role in generation of oxidative stress in those organs suggesting the need of re-evaluation of iodine fortification programme in the post salt iodization period.

Keywords: Free radicals, oxidative stress, excessive iodine, antioxidant profiles

OP - 24

ADIPOSITY IN BODY FAT PERCENTAGE DEFINED AND BMI MISSED OBESE CASES IS ASSOCIATED WITH ADIPOKINE AND CARDIOMETABOLIC DYSREGULATION IN NORMOGLYCEMIC MALES

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Background: Obesity can be defined on the basis of BMI or excess body fat, with the amount of this excess fat actually being responsible for most obesity-associated health risks. **Objective:** to evaluated the relationships between obesity indices, body composition, resistin, adiponectin and cardiovascular risk markers in normoglycemic healthy individuals. **Methods:** This observational cross-sectional study was conducted in the Department of Physiology College of Medicine, King Saud University, Riyadh. A total of 120 healthy male subjects were selected for the study. All subjects underwent analysis of body composition by bioimpedance analysis (BIA). Fasting venous blood samples were analyzed for glucose, glycosylated hemoglobin (HbA1c), homeostatic assessment of insulin resistance (HOMA-IR), lipids, adiponectin, resistin, lipoprotein(a) and high sensitivity C reactive protein (hsCRP). **Results:** Body mass index (BMI) ($r=0.326$, $p < 0.001$), body fat mass (BFM) ($r=0.377$, $p < 0.001$), body fat percentage (BF%) ($r=0.326$, $p < 0.001$), waist hip ratio (WHR) ($r=0.402$, $p < 0.001$) and basal Insulin levels ($r=0.217$, $p=0.018$) were positively correlated with hsCRP. However, serum adiponectin levels ($r=0.189$, $p=0.0391$) were negatively correlated with hsCRP. Adiponectin levels were significantly lower in obese compared to non obese subjects ($p=0.0551$). Body fat percentage defined obese cases which were missed by BMI criteria had significantly higher levels of Triglycerides (TG), HOMA-IR, hsCRP & resistin and lower levels of adiponectin compared to non obese subjects. Keeping hsCRP as dependant variable we observed that WHR, BFM, BF%, BMI and adiponectin were significant predictors in univariate analysis. In multiple regression analysis WHR and adiponectin were independent predictors of hsCRP. **Conclusion:** Adiposity is associated with adipokine and cardiometabolic dysregulation in BMI missed obese cases and having obesity defined by body fat percentage criteria. Serum adiponectin levels and WHR are independent predictors of hsCRP levels in normoglycemic subjects.

Key Words: Adiposity, Adipokine , Cardiometabolic dysregulation

OP - 25

COMPARISON OF ANTI-INFLAMMATORY ACTIVITY OF NIGELLA SATIVA AND DICLOFENAC SODIUM IN ALBINO RATS

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Background: *Nigella sativa* or "Kalonji" is a naturally occurring plant in Pakistan and other countries which possesses a wide range of medicinal properties; the anti-inflammatory property being one of these. Diclofenac sodium is a commonly used anti-inflammatory drug. The present study was carried out to evaluate anti-inflammatory effect of ethanolic extract of *Nigella sativa* seeds to rationalize its use as a cheap alternative of costly anti-inflammatory drugs. **Objective:** The objective of this study was to compare the anti-inflammatory effect of ethanolic extract of *Nigella sativa* seeds with that of diclofenac sodium in albino rats. **Methods**: This Randomized controlled trial (RCT) study was carried out on 90 male albino rats in the Department of Physiology, Services Institute of Medical Sciences (SIMS), Lahore; from September, 2009 to November, 2009. Five percent (5%) formalin in a dose of 50 µl was injected into sub-plantar surface of right hind paw of each rat to produce inflammation. The rats were randomly divided into three groups of thirty each. Group A was given normal saline (control); group B was given *Nigella sativa* seed extract; and group C received diclofenac sodium, as a reference drug. Increase in paw diameter, and total and differential leukocyte counts were measured as markers of inflammation. **Results:** The Nigella sativa seeds extract caused significant ($p<0.05$) reduction in the paw inflammatory response in albino rats. The effect was longer in duration than the effect caused by diclofenac sodium; however, the extract was comparatively less potent than diclofenac sodium. The extract had no significant effect ($p>0.05$) on the total or differential leukocyte counts. **Conclusion:** Our results suggest that ethanolic extract of *Nigella sativa* seeds possesses potent anti-inflammatory effect in albino rats however, this effect is comparatively less but prolonged than that produced by diclofenac sodium.

Key Words: *Nigella sativa,* formalin test, inflammation, diclofenac sodium.

OP - 26

MOLECULAR BIOLOGICAL ANALYSIS OF HEPATITIS B VIRUS IN BANGLADESH:IMPACT OF HBV-RELATED GENOMIC ALTERATION FOR DETERMINING DISEASE PROGRESSION AND HEPATOCARCINOGENESIS

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Background: The clinical course of hepatitis virus (HBV) infection indicates that about 80% chronic HBV-infected subjects do not exhibit features of notable liver injuries (asymptomatic HBV carrier [ASC]), whereas, about 20% chronic HBV-infected patients develop progressive liver diseases like chronic hepatitis B (CHB), cirrhosis of liver (LC), and hepatocellular carcinoma (HCC). Although several factors related to host immunity have been implicated for these differences in clinical manifestations, little is known about virus-derived and HBV-related factors in this regard. **Objective:** To develop insight about the specific host factors that may be related to progression of liver diseases in chronic HBV-infected subjects. **Methods:** 322 patients with chronic HBV infection have already been enrolled in this study and analysis has been made. All serum samples have been tested for

hepatitis B surface antigens (HBsAg), hepatitis B e antigen (HBeAg) and HBV DNA to confirm the diagnosis of chronic HBV infection. The levels of alanine aminotransferase (ALT) and serum bilirubin were evaluated to develop insights about extent of liver damage. Abdominal ultrasonography and/or fine needle aspiration cytology were done to confirm the diagnosis of LC and HCC. Wherever required, cancer marker like afpha fetoprotein (AFP) was assessed. HBV genotype was evaluated by immunoassays (Tokyo Institute of Immunology, Tokyo, Japan) in all patients. In addition, nucleic acids were extracted from all serum samples using SmiTest EX R&D (Sumitomo Metal Industries, Ltd, Tokyo, Japan). HBV genotype was determined by amplifying HBV genome by PCR method and then by conducting sequencing of HBV genome. The first PCR was carried out in 35 cycles and 2nd PCR in 30 cycles. To obtain full length HBV DNA sequence from the nucleic acid, a long distance nested PCR was performed in selected sera to amplify two overlapping fragments with use of Taq plus PCR System. **Results:** On the basis of clinical presentation and laboratory investigations, 24 patients were ASC, 233 were CHB and 65 were LC and HCC. Among ASC patients, 5, 7 and 12 belonged to HBV genotype A, C, and D, respectively; a higher prevalence of genotype D among ASC. On the other hand, HBV genotype C was most prevalent in CHB patients (N=98, 42%), followed by HBV genotype D (N=85, 36%). About 69% patients with LC and HCC also had genotype C and only 6% were infected with HBV genotype A and 23% by genotype D. Full genomic analysis of sera of patients with progressive liver damages (LC and HCC) revealed mutations at HBeAg promoter regions in more than 80% patients. However, mutations in this region were not seen in ASC and patients with less progressive liver diseases. **Conclusions:** This study showed that HBV genotype C is most prevalent HBV genotype in patients with CHB, LC, and HCC in Bangladesh, whereas, genotype D and A are main infecting genotype of ASC patients. This is quite different from HBV genotype distribution in neighboring countries of Bangladesh.

OP - 27

EVALUATION OF THE ANTINOCICEPTIVE AND ANTI-INFLAMMATORY EFFECTS OF ESSENTIAL OIL OF NEPETA POGONOSPERMA JAMZAD ET ASSADI IN RATS

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Background: The management of pain is probably one of the most common and yet most difficult aspects in medical practice. Many improved analgesics and anti-inflammatory agents have been developed, but there is considerable opportunity for conceptual innovation. **Objective:** This study was designed to evaluate the antinociceptive and anti-inflammatory effects of essential oil of Nepeta pogonosperma Jamzad et Assadi (NP) in male Wister rats. **Methods:** Air-dried aerial parts of NP were hydrodistillated and GC-MS analysis of obtained essential oil was conducted. Total 24 male Wister rats weighing 225 ± 25 gm were studied. Essential oil of NP was administered intraperitoneally at the doses of 50 mg/kg, 100 mg/kg and 200 mg/kg for the experimental groups. Control rats received equal volume (2 ml/kg) of normal saline. Antinociception was assessed by tail flick test (after 30 minutes) and formalin test (for further 60 minutes). Then the animal was sacrificed and the paw edema was measured using a water plethysmometer. **Results:** 4a ,7 ,7a -nepetalactone and 1,8-cineole were found as the main concentrated components of NP essential oil. All the doses of NP showed antinociception. NP 200 mg/kg reduced the pain sensation in tail flick ($p < 0.01$) and formalin

test ($p < 0.001$ in both phases). In paw edema test, NP 100 and 200 mg/kg significantly reduced the inflammation ($p < 0.01$ and $p < 0.05$). **Conclusion:**This study reveals that the essential oil of NP may minimize both the acute and chronic forms of nociception and may have potent role against inflammation, but the dose should be maintained precisely to obtain the intended effect.

Keywords: Nociception, Nepeta pogonosperma, Formalin test, Tail flick test, Essential oil, Inflammation

OP - 28

GC-MADE PROTEIN DISORDER SHADES NEW LIGHT ON VERTEBRATE EVOLUTION

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Background: At the emergence of warm-blooded vertebrates, GC rich regions of the cold-blooded ancestral genomes underwent a significant GC increase. Such an increase was previously postulated to increase thermodynamic and structural stability of proteins through selective increase of protein hydrophobicity. **Objective**: To evaluate the effect of GC-made protein disorder on vertebrate evolution. **Results:** Here, we found that, increase in GC content promotes a higher content of disorder promoting amino acid in warm-blooded vertebrates proteins and that the increase in hydrophobicity is mainly due to a higher content of the small disorder promoting amino acid alanine. In warm-blooded vertebrates, prevalence of disordered residues was found to promote functional diversity of proteins encoded by GC rich genes. A higher fraction of disordered residues in this group of proteins was also found to minimize their aggregation tendency. **Conclusions:** Thus, we propose that the GC transition has favored disordered residues to promote functional diversity in GC rich genes, and protect them against functional loss by protein misfolding.

Key Words: GC-made Protein, Vertebrate Evolution, Amino acid alanine

OP - 29

EVALUATION OF MRSA CHROME AGAR FOR THE DETECTION OF METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS*.

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Background: Methicillin Resistant *Staphylococcus aureus* (MRSA) has become a major cause of nosocomial infections; associated with clinical and financial implications. For the detection of MRSA, CLSI guidelines (2010) has recommended cefoxitin as a surrogate marker when using Disc Diffusion Test, as it is a potent inducer of mec a regulatory system. Advanced culture based method; especially the chromogenic media has decreased the time for detection and demonstrably enhanced recovery. **Objective:** to evaluate the efficacy of MRSA Chrome Agar to detect MRSA and compare it with oxacillin and cefoxitin disc diffusion test and detection of mecA gene by PCR. **Methods:** A total 116 *Staphylococcus aureus* (*S. aureus)* isolated from various clinical samples, were obtained from three tertiary care hospitals of Dhaka city. *S. aureus* was identified by colony characters, Gram's stain and standard biochemical procedures. MRSA was detected by susceptibility to 1µg oxacillin disc, 30 µg cefoxitin disc and growth of denim blue color colonies of *S. aureus* on the Brilliance MRSA Chrome Agar (Oxoid, UK) at 24 and 48 hours of incubation. PCR was performed for amplification of mecA

gene as a gold standard method. **Results:** Out of 116 isolates, 33 (28.44%) and 31(26.73%) were oxacillin and cefoxitin resistant respectivelty where mecA gene was detected in 28 strains. On MRSA Chrome Agar, 29 (25.00%) *S. aureus* produced denim blue colonies at 24 hours, of which 28 isolates possess mecA gene. At 48 hours incubation, an additional 4 isolates yielded denim blue colonies from which mecA gene could not be identified. Al the strains of *S. aureus* that produced denim blue colonies at 24 and 48 hours were resistant to oxacillin and cefoxitin. The sensitivity, specificity and accuracy were 100%, 94.31% and 95.68% in oxacillin disc diffusion test and 96.42%, 95.45% and 95.68 % in cefoxitin disc diffusion test. The sensitivity, specificity and accuracy of Brilliance MRSA Chrome Agar at 24 hours were 100%, 98.86% and 99.13% respectively. MRSA Chrome Agar showed the highest sensitivity, specificity and accuracy than that of oxacillin and cefoxitin disc diffusion test. **Conclusions**: MRSA Chrome Agar could be good choice in clinical microbiology laboratory for rapid and accurate identification of MRSA

Keywords: MRSA Chrome Agar, MRSA, mecA gene

OP - 30

ATTENUATION OF UREMIA THROUGH PHYTOTHERAPY & FUNCTIONAL FOODS ON EXPERIMENTALLY INDUCED MALE ALBINO RATS

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Background: Renal insufficiency leads to uremia and each year, the number of patients with chronic kidney failure increases by 11%. Globally, kidney transplantation is opted by a very few kidney failure patients for effective treatment, due to shortage of donor because of high cost and high probability of organ rejection. Also dialysis is very time consuming, expensive and not free from side effects and not curable. Therefore, there is a great necessity for an unconventional, affordable therapy for patients who cannot afford expensive dialysis or kidney transplant to keep them alive as well as reducing the frequency of dialysis. **Objectives:** To observe attenuation of uremia through phytotherapy & functional foods on experimentally induced male albino rats. **Methods:** Plant extracts, alpha lipoic acid and probiotic organisms were orally fed to the acetaminophen induced kidney failure rats by different dose and duration. The effective plant extracts of *Asparagus racemosus* and *Terminalia arjuna* were further evaluated for their characterization also microorganisms were characterized for their probiotic nature. In our laboratory we are trying to find out the some active principles from plant extracts, and their mode of action for reducing uremia and oxidative stress. **Results:** The uremic profile, oxidative stress, toxicity markers and lipid peroxidation marker enzymes shows significant improvement after supplementation of the plant extracts, alpha lipoic acid and probiotic organisms. Also the histology of kidney and liver tissues shows regeneration of cellular damage after the treatment by phytotherapy and functional foods. **Conclusion:** Some active components present in plant extract may be responsible for this reducing uremia and oxidative stress. Further research is in progress in our laboratory, to explore the mode of action of the compounds present in the plant extracts and identification of purified component.

Key Words: Uremia; *Asparagus racemosus; Terminalia arjuna;* Probiotic; Oxidative stress

OP - 31

HEPATOPROTECTIVE ROLE OF ASHWAGANDHA (WITHANIA SOMNIFERA) ROOT EXTRACT ON GENTAMICIN TREATED RATS

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Background: Liver damage occurs due to higher doses of drugs, exposure to chemicals or infectious agents. Ashwagandha have free radical scavenging activity, can be used for the prevention and treatment of liver damage. **Objective:** To observe hepatoprotective role of ashwagandha root in gentamicin treated rats. **Methods:** This experimental study was conducted in 2011 in the Department of Physiology, Sir Salimullah Medical College (SSMC), Mitford, Dhaka, Bangladesh. A total number of 35 apparently healthy Wistar albino male rats, weighing between 150 to 200 grams, age from 90 to 120 days were used. Ethical permission was taken from the Institutional Ethics Committee (IEC) of SSMC. After 14 days of acclimatization, the rats were divided into control group and experimental group. Control group was again subdivided into baseline control, (9 rats) and gentamicin treated group (9 rats). Again, experimental group (gentamicin treated group after ashwagandha treatment) consisted of 13 rats. All groups of animals received basal diet for 22 days. In addition to this, gentamicin treated control group also received gentamicin subcutaneously (100mg /kg body weight/day) for the last eight days. Again, experimental group received ashwagandha root extract (500mg/kg body weight/day, orally) for 22 consecutive days and gentamicin subcutaneously (100mg/kg body weight /day) for last eight days. After giving gentamicin and ashwagandha all the animals including baseline control rats, were anaesthetized with the help of chloroform and sacrificed on 23rd day. Liver function was assessed by estimating serum levels of AST, ALT and bilirubin. Statistical analysis were done by one way ANOVA and Bonferroni test as applicable **Results:** The mean serum levels of AST and ALT were significantly higher in gentamicin treated control ($p<0.001$) and gentamicin treated group after ashwagandha treatment ($p<0.05$) in comparison to those of baseline control group Again, these levels of gentamicin treated group after ashwagandha treatment were significantly ($p<0.001$) lower than those of gentamicin treated control group. The serum level of bilirubin was significantly higher in gentamicin treated control group ($p<0.001$) and gentamicin treated group after ashwagandha treatment ($p<0.01$) in comparison to those of baseline control Again, this level of gentamicin treated group after ashwagandha treatment significantly ($p<0.01$) lower than that of gentamicin treated control group. Histological examination of liver revealed abnormal findings in 100% of rats in gentamicin treated rats (group A_2). Again, 84.62% of rats in gentamicin treated group after ashwagandha treatment (group B) showed almost normal structure and 15.38% showed mild histological changes in liver (table II). **Conclusion:** From this study, it can be concluded that ashwagandha (Withania somnifera) root extract has hepatoprotective role in gentamicin treated rats may be due to its free radical scavenging activity.

Keywords: Heopatoprotective, Ashwagandha, Aspartate aminotransferase, Alanine aminotransferase.

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PREVALENCE OF EATING DISORDERS IN SINDH UNIVERSITY STUDENTS USING SCOFF TEST

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Background: Eating disorders are the group of conditions characterized by clinical disturbances in body image and eating habits. EDs are four types, Anorexia Nervosa, Blumia Nervosa, Binge Eating Disorders and Eating Disorders Not Otherwise Specified EDNOS. Prevalence of eating disorders in

western countries continues to be a problem of concern, in these countries maintaining the shape and size is influenced by socio-cultural factors. Recently prevalence of eating disorders has also been reported in Asian countries including Pakistan. Eating disorders are common in males and females of all ages; however, most cases predominantly occur in young women. **Objectives:** The purpose of this study is to screen the students of Sindh University, which represents both the urban and rural population of Sindh, using scoff test. **Methods:**A descriptive cross sectional study was carried out on 1384 students of Sindh University Jamshoro, located at the south of Pakistan. Anthropometric measurements were also taken as weight, height and BMI. Data was stored and analyzed using SPSS version 16. Scoff questionnaire has been designed to suggest the likely case rather than to diagnose. **Results:** Out of 1384 individuals, scoff questionnaire detected 341 (24.6%) individuals at high risk of eating disorders. Out of reported 341 individuals who scored 2 or above, 226 (66.3%) were females and 115 (33.7%) were males. Female students were significantly ($P<0.001$) at higher risk than male students. Those students who belong to the younger age group (18-22) were at more risk ($P<0.001$) of eating disorders. The students who live in urban areas have slightly higher risk of eating disorders however, it was not statistically significant ($P=0.078$). Likely hood of eating disorders was detected in all categories of BMI. **Conclusion:** We have found the highest number of scoff positive cases in our study. This is the problem of concern in Pakistan and early detection of EDs can help in treatment of EDs at the earlier stage.

Key words: Eating disorders, Scoff test, Jamshoro

OP - 33

OSMOTIC FRAGILITY STATUS OF RED BLOOD CELL IN PATIENTS WIRH CHRONIC KIDNEY DISEASE

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Background: Anemia is the universal complication of chronic kidney disease and reflects problem either in abnormally low production of RBC or excessive hemolysis or blood loss. Excessive hemolysis is seen in advanced renal failure, the life span of RBC is shortened to average 64 days. **Objectives:** To find out the cause of shortened RBC survival time to evaluate the red cell osmotic fragility range in CKD patients. **Methods:** This hospital based cross sectional observational study was carried out in the department of Physiology of Chittagong Medical College, Chittagong, between1st January to 31st December 2011.100 diagnosed CKD patients of both sexes aged 20 to 80 years were selected as case by purposive convenience sampling from Nephrology department of CMCH and 100 healthy volunteers aged 19 to 66 years were served here as control. Osmotic fragility test of RBC and PBF study was done by traditional method. The statistical analysis was done by Chi-square test (X^2), Student's t-test and one-way ANOVA. **Results:** The mean osmotic fragility of RBC was significantly ($P<0.005$) decreased in 69% CKD patients and was remain normal in 31% of patients. The mean strength of NaCl solution for partial haemolysis was 0.3(± 0.05) % and 0.11(± 10) % for complete hemolysis in CKD patients. On the other hand red blood cells were partially hemolysed at 0.44(±0.04)% and completely hemolysed at 0.21(± 0.09) % of NaCl solution in control group.

Conclusion: The results of this study concluded that osmotic fragility of RBC significantly decreased in CKD patients.

Key words: Red cell osmotic fragility, Anemia, Chronic kidney disease.

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STUDY OF VITAMIN E SUPPLEMENTATION ON THE ANTIOXIDANT ENZYME SYSTEMS OF FEMALE INDIAN ATHLETES

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Background: Evan (2000) has demonstrated exercise increases the generation of free radicals and lipid peroxidation. It is still unclear whether exercise induces lipid peroxidation in human vitamin E supplementation or not. **Objectives:** The present study examined the effects of exercise and vitamin E supplementation on free radical induced lipid peroxidation in Indian female athletes. **Methods:** Thirty sedentary females (age : 20 years to 25 years,) were randomly assigned to placebo – sedentary (Placebo (S)) and vitamin E 400mg ($V_{S(400)}$) groups (n=15 in each group).Thirty female athletes (age 18 years to 25 years,) were randomly selected for the study. After half an hour rest, all the subjects were allowed to do exercise on bicycle ergometer with the workload of 600 $kgm.min^{-1}$ and 750 $kgm.min^{-1}$ for sedentary females and athletes respectively till exhaustion. Standard procedures were followed for SOD, CAT and GP_X estimations and the extent of lipid peroxidation was determined by assaying malondialdehyde (MDA) formation according to the method of Yagi (1984). **Results:** In analyzing the data, it is observed in present study that SOD and CAT activities are reduced greatly ($p<0.001$, $p<0.01$) following endurance exercise in females. On the other hand, GP_X activity in erythrocytes increased significantly ($p<0.05$), but this elevation could not prevent the exercise induced rise ($p<0.001$) in lipid peroxidation levels in females. It was also been found that athletes have improved antioxidant defense systems than sedentary females, as there is significant ($p<0.001$) difference in the mean values of SOD, CAT and GP_X activities during resting conditions. **Conclusions:** Present investigation indicated that vitamin E supplementation contributes immensely to the prevention of exercise-induced lipid peroxidation in erythrocytes of both sedentary and athletic females and it also prevents exercise induced reduction of Catalase and Superoxide Dismutase activity.

Key words: Vitamin E, Female Athletes, Endurance Exercise, Enzyme activities

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EFFECT OF PEANUT (ARACHIS HYPOGAEA L.) ON DYSLIPIDEMIA IN YOUNG ADULTS

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Background: Dyslipidemia is a major risk factor for cardiovascular disease. Lipid lowering drugs are available in modern medicine but prolong use of these drugs may produce some side effects. Peanut due to some of its active component can improve lipid profile status. **Objective:** To observe the effect of peanut (Arachis hypogaea L.) on dyslipidemia in young adults. **Method:** This prospective interventional study was carried out in the Department of Physiology, Sir Salimullah Medical College (SSMC), Dhaka between 1st July 2013 and 31st June 2014. Total thirty (30) dyslipidemic young adults of both sexes with age range 30 to 40 years were included in this study. They were selected on the basis of inclusion and exclusion criteria from Out Patient Department of medicine of Sir Salimullah Medical College and Mitford Hospital, Dhaka. They were studied three times i,e. on day-1(before supplementation with peanut, Phase A), on day 28th (after 4 weeks supplementation with peanut,

Phase B) and on day 56th (after 8 weeks supplementation with peanut, Phase C). All the study subjects were received peanut at a dose of 20% of their daily calorie intake. Serum lipid profile (TAG, LDL-C, TC and HDL-C) of all subjects were estimated by enzymatic method. Moreover, serum magnesium ion level was measured by calmagite photometric method. In addition, to assess the atherosclerotic changes of vascular wall serum homocysteine and serum folate levels were also estimated by ARCHITECT *i* system. The statistical analysis was done by using paired sample't' test as applicable. **Results:** In this study, the mean serum TAG, LDL-C and TC levels were significantly decreased after 8 weeks supplementation with peanut in comparison to those of after 4 weeks and before supplementation with peanut. However, these levels were also decreased after 4 weeks supplementation than those of before supplementation with peanut though it was statistically significant only in case of TC ($p<0.05$) and LDL-C ($p<0.001$) . Whereas, the mean serum HDL-C and Mg^{+2} levels were significantly ($p<0.001$) increased after 8 weeks supplementation when compared to those of after 4 weeks and before supplementation of peanut. Again, mean serum homocysteine and folate levels in all phases of dyslipidemic young adults were almost similar and the differences were not statistically significant. The body weight, systolic and diastolic blood pressure were gradually decreased from day-1 to day-56 of the study period. Though, it was statistically significant only in case of body weight ($p<0.05$) and diastolic blood pressure ($p<0.001$). **Conclusion:** The present study revealed that, peanut (Arachis hypogaea L.) has effect on improvement of lipid profile status by lowering serum TAG, LDL-C, TC levels and by increasing serum HDL-C level. This lipid lowering effects of peanut may be due to its high content of Mg^{+2}.

Key words: Dyslipidemia, peanut, lipid profile, homocysteine, folate.

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URINARY ELECTROLYTES AND SERUM LIPID PROFILE IN NON-OBESE PATIENTS OF ESSENTIAL HYPERTENSION

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Background: Essential hypertension is a disorder of salt and water metabolism. The abnormal sodium transport is quite frequently determined genetically. The intake of salt is reflected in urinary electrolyte excretion. There is a direct correlation between an increased sodium intake and systolic and diastolic blood pressure. Hyperlipidemia is a frequent finding in hypertensive patients. High sodium intake predisposes the blood vessels to injury and induces atherosclerosis that leads to development of complications of essential hypertension like myocardial infarction, cerebrovascular accidents, renal failure and blindness. **Objectives:** To assess the role of salt intake and lipid profile in pathogenesis of essential hypertension. **Methods:** 24 hours urinary sodium and potassium estimation was done by electrolyte analyzer and lipid profile was estimated by enzymatic end point method using Human kit in 500 cases of hypertension. **Results:** There was a direct correlation of increased sodium intake and lipid profile with increased blood pressure. **Conclusion:** Increased salt intake and lipid consumption culminated in increased diastolic and systolic blood pressure in non-obese essential hypertensives.

Key words: Urinary electrolytes, lipid profile, essential hypertension.

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EXERCISE INDUCED CHANGES IN AUTONOMIC NERVE FUNCTION IN PATIENTS WITH IRRITABLE BOWEL SYNDROME BY POWER SPECTRAL ANALYSIS

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Background: Altered autonomic nerve function has been reported by various investigators in IBS and moderate to vigorous physical exercise causes autonomic nerve function improvement both in healthy and various clinical conditions. **Objective:** To observe the effect of brisk walking on the autonomic nerve function by analysis of heart rate in patients with Irritable bowel syndrome. **Methods:** This prospective study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka from January to December 2013. The protocol of this study was approved by Institutional Review Board, BSMMU. 77 male with Irritable bowel syndrome were enrolled for the study by random sampling from Gastroenterology OPD, BSMMU. 28 healthy controls were recruited through personal contact. According to the predominant symptom present, IBS patients were divided into 3 subgroups, these included 24 diarrhea predominant IBS (IBS-D), 26 constipation predominant IBS (IBS-C) and 27 altered bowel habit type IBS (IBS-A) patients. 28 apparently healthy sedentary male were enrolled as control. Informed written consent was taken from all the participants. Subsequently, a detail family and medical histories were taken and also physical activity status was recorded. For HRV recording, the subjects were prepared from one day prior to the test. They were advised to have sound sleep and not undergo any sort of physical or mental stress, and were also advised to avoid taking any sedatives. All the examinations were done in the Autonomic Nerve Function Test Laboratory. After completion of baseline HRV recording, the patients performed regular brisk walking for 3 months. For this purpose the patient were trained for brisk walking at a rate of 130 steps per minute for 30 to 45 minutes, for 3 to 5 days in a week for a period of 3 months duration. This exercise intervention was not applied to the control group. The frequency domain measures such as total power, HF power, LF power, LF norm and HF norm were analyzed before exercise and similarly after 3 months of physical exercise. ANOVA, independent t-test and paired t-test were used as applicable. **Results:** Pre-exercise mean values of total power, HF power and HF norm were higher ($p<0.05$), on the other hand, mean values of LF power and LF norm were lower ($p<0.05$) all IBS groups than those of the control. No significant differences of these parameters were observed within subgroups of IBS patients. Post exercise mean values of LF power and LF norm were lower ($p>0.05$) in all IBS patients. In contrast, total power, HF power and HF norm were significantly increased in all IBS patients compared to their values in corresponding pre-exercise IBS groups. **Conclusion:** This study conclude that male patients with all the three subgroups of IBS have noticeably decreased parasympathetic with increased sympathetic activities and moderate physical exercise increased cardiac parasympathetic activity with decreased cardiac sympathetic activity.

Key words: Autonomic Nerve function, Irritable Bowel Syndrome, power spectral analysis.

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EFFECTS OF PHYSICAL EXERCISE AND OMEGA-3 FATTY ACID SUPPLEMENTATION ON BONE MINERAL DENSITY IN POSTMENOPAUSAL WOMEN

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Background: Osteoporosis is more common in postmenopausal women. Physical exercise along with omega-3 fatty acid supplementation can maintain healthy bone tissue. **Objective:** To observe

the effects of physical exercise and omega-3 fatty acid supplementation on bone mineral density in postmenopausal women. **Methods:** This prospective interventional study was carried out in the Department of Physiology, Sir Salimullah Medical College (SSMC), Dhaka between 1st July 2012 and 31st June 2013. In this study total thirty healthy natural postmenopausal women, age ranged from 50 to 65 years with performing physical exercise and taking omega-3 supplementation for 90 days, considered as Group-B. Another thirty age and BMI matched women performing exercise without omega-3 supplementation were considered as Group-A. All the subjects were studied 2 times, i.e. on day-1 and on day-90. To measure bone mineral density, Dual energy x-ray absorptiometry was performed. For assessment of postmenopausal hormonal status, serum estrogen and parathormone levels were estimated. Again, serum calcium ion level was measured by end point colorimetric method. The statistical analysis was done by paired t-test as applicable. **Results:** In this study, the mean spinal and femoral neck bone mineral density ($p<0.05$) and T-score ($p< 0.05$, $p<0.01$) were significantly higher after performing physical exercise along with omega-3 supplementation than those of their pre supplemented state ($p<0.001$) and also to those of only performing physical exercise group. Moreover, the mean serum estrogen ($p<0.001$, $p<0.01$ respectively) and calcium ion ($p<0.001$) levels were significantly higher, whereas parathormone ($p<0.001$) level was significantly lower after performing physical exercise along with omega-3 supplementation than those of their pre supplemented state and also to those of only performing physical exercise group. **Conclusion:** The present study revealed that physical exercise alone can increase bone mineral density, but physical exercise along with omega-3 fatty acid supplementation synergistically increase bone mineral density.

Key words: Physical exercise, omega-3 fatty acid, bone mineral density, postmenopausal women.

OP - 39

PERCEPTIONS OF PAKISTANI MEDICAL STUDENTS ABOUT MEDICAL EDUCATION AND THEIR FUTURE MEDICAL CAREER

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Background: The world is currently facing a shortage of doctors. Pakistan is providing a reasonable number of doctors to global community. This study was conducted to find out the level of contentment among Pakistani medical students about their choice of medical profession, place and setting where they would prefer practicing after graduation. The study also focused on the gender differences with respect to these factors. **Methods:** Study participants were MBBS students from different medical colleges located in Punjab, Pakistan. A total number of 1020 students (540 male, 480 female) consented to participate in the study and filled up a questionnaire consisting of six items. For each item, percentages were calculated for each class as well as for male and female students. Chi-Square test was applied to find out the significance of difference among different groups. **Results:** Among medical students, 78.44 % were satisfied about their choice of medical profession. About two third (65.16 %) consider medical profession a suitable choice for their younger brother or sister also. Two third (64.46 %) consider their studies as over-burdening while 35.54 % were comfortable with their studies. A large proportion of medical students (94.74 %) were determined to practice medicine after completion of their studies; 73.20 % want to practice within the country, 26.80 % preferred to work abroad. More than two third (69.90 %) would opt to work in government sector and 30.10 % would like to work in private sector. **Conclusions:** Majority of Pakistani medical students was satisfied with their choice of medical career and they will advise their younger generation to adopt this profession. A significant number of female students (95.77 %) showed their commitment to work as

physicians and society should provide them a favourable environment and more job opportunities to female doctors.

Key words: Medical students, Medical education, Medical career

OP - 40

CARDIOPROTECTIVE EFFECT OF PEANUT (ARACHIS HYPOGAEA L.) EXTRACT AND ITS COMBINED ACTION WITH PROPRANOLOL AGAINST ISOPROTERENOL INDUCED CARDIOTOXICITY IN RATS

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Background: Cardiotoxicity can be developed due to prolonged use of higher doses of some drugs, exposure to some chemicals, toxins or infectious agents and also by some disease conditions. Natural plant food such as peanut (Arachis hypogaea L.) may have free radical scavenging and lipid lowering activity, thereby can be used for the prevention and management of heart disease. **Objective:** To observe the cardioprotective effect of peanut extract and its combined action with propranolol against isoproterenol induced cardiotoxicity in Wistar albino rats. **Method:** This study was done in the Department of Physiology, Sir Salimullah Medical College, Dhaka, 2012. 50 Wistar albino rats, age 85 to 100 days, weighing 120 to 150g were included. After acclimatization for 14 days animals were divided into control (without peanut) and experimental group (with peanut). Control group consisted of 30 rats and subdivided into Baseline control group, Isoproterenol treated control group and Isoproterenol treated control group after propranolol treatment. Experimental group consisted of 20 rats and subdivided into Isoproterenol treated group after peanut treatment and Isoproterenol treated group after combined treatment of peanut and propranolol. Each subgroup consisted of 10 rats and was given basal diet for 21 consecutive days. In addition to basal diet animals of propranolol treated group were given propranolol (10mg/kg body weight; orally) for last seven days, animals of peanut treated group were given peanut extract (500mg/kg body weight; orally) for 21 days, animals of combined treated group were given both peanut extract (500mg/kg body weight; orally) for 21 days and propranolol (10mg/kg body weight; orally) for last seven days. All groups of animals except baseline control were given isoproterenol subcutaneously (150mg/kg body weight/day) for last two days. All rats sacrificed on 22nd day. Serum cardiac biomarker enzyme and serum lipid profile were estimated and histology of heart was done by using standard laboratory procedure. The statistical analysis was done by one way ANOVA and Bonferroni test as applicable. **Result:** Serum troponin I, CK-MB, LDH, TC, LDL-C were significantly higher and HDL-C was significantly lower in isoproterenol treated group in comparison to that of baseline control group. Again, troponin I, CK-MB, and LDH were significantly lower in isoproterenol treated group after propranolol treatment and isoproterenol treated group after combined treatment of peanut and propranolol when compared to that of isoproterenol treated group. Furthermore, TC and LDL-C were significantly lower in isoproterenol treated group after peanut treatment and isoproterenol treated group after combined treatment of peanut and propranolol in comparison to that of isoproterenol treated group. Moreover, HDL-C was significantly higher in isoproterenol treated group after combined treatment of peanut and propranolol in comparison to that of isoproterenol group. Again, CK-MB and LDH were significantly lower and HDL-C was significantly higher in isoprotrenolol treated group after combined treatment of peanut and propranolol when compared to that of isoproterenol treated group after peanut treatment. Histological score of heart tissue was significantly higher in isoproterenol group in comparison to that of baseline control group. Moreover, these scores were significantly lower in isoproterenol group after propranolol treatment, isoproterenol group after peanut treatment and isoproterenol group after combined treatment of peanut and propranolol when compared to that of isoproterenol group. Similarly, this score was significantly lower in isoproterenol treated group after combined treatment of peanut and propranolol in comparison to that of

isoproterenol treated group after peanut treatment. **Conclusion:** The present study revealed the cardioprotective effect of peanut (Arachis hypogoea L.) against isoproterenol induced cardiotoxicity in Wistar albino rats and the combined therapy of peanut and propranolol showed synergistic cardioprotective effect. In addition to this, peanut also have significant effect on preventing dyslipidemia.

Key words: Cardioprotective, Peanut, Propranolol, Isoproterenol.

OP - 41

EFFECT OF COMBINED ORAL CONTRACEPTIVE PILL (COCP) ON PULMONARY FUNCTION

Farhana Islam[1], Nasim Jahan[2], Nayma Sultana[3]

Department of Physiology, Sir Salimullah Medical College, Dhaka

Background: Combined oral contraceptive pill (COCP) is the most commonly used contraceptive method in Bangladesh. This COCP may have some effects on different organs including lungs. **Objective:** To observe the effects of combined oral contraceptive pill (COCP) on pulmonary function in apparently healthy women receiving COCP. **Methods:** This cross sectional study was carried out in the Department of Physiology, Sir Salimullah Medical College (SSMC), Dhaka between July 2013 and June 2014. A total 30 apparently healthy young women, age ranged 20 to 30 years, receiving COCP for at least 6 months were included in this study (Group-B). Another 30 age and BMI matched unmarried women were also taken as control for comparison (Group-A). The COCP user women were selected from the Family Planning Unit, Sir Salimullah Medical College and Mitford hospital, Dhaka, and the control group was selected from personal contact, from different area of Dhaka city. Lung function parameters like FVC, FEV_1, FEV_1/FVC% and PEFR of all the subjects were measured by digital spirometer. Statistical analysis was done by Independent 't'test. **Results**: Spirometric parameters like FVC ($p<0.001$), FEV_1 ($p<0.001$), PEFR ($p<0.001$) were significantly higher whereas, FEV_1/FVC% ($p<0.05$) was significantly lower in COCP user women than those of nonuser women. Moreover, the mean serum estrogen ($p<0.001$) and progesterone ($p<0.05$) levels were also significantly higher in COCP users in comparison to those of nonusers. Again, in this study serum estrogen and progesterone levels showed an association with pulmonary function parameters though it was not statistically significant. **Conclusion:** From the result of this study it can be concluded that COCP have effects on improvement of pulmonary function parameters. This may be due to their high estrogen and progesterone content.

Key words: Pulmonary function parameters, Estrogen, Progesterone.

OP - 42

INSIGHT INTO DESIGNING NOVEL SERIES OF LEAD MOLECULES AGAINST DENGUE SEROTYPES TO RESTRICT THE INTERACTION WITH HUMAN NRBP (NUCLEAR RECEPTOR BINDING PROTEIN)

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Background: NS3 protein of the dengue virus is viral protease which interacts with NRBP which causes cellular trafficking in human cell and is a potential target for anti dengue therapy. **Objectives**: The present study deals with the identification and optimization of novel series of panduratin

molecules against dengue due to the unavailability of effective drugs and vaccines. **Methods**: We modeled the 3D Structure of both the viral and host protein using Modeller 9v11 followed by protein-protein interaction study. Sixty five novel compounds were designed by substituting 1-5 positions of the benzyl ring A (4hydroxy-panduratinA) with various substituents. The residues involved in protein-protein interaction were targeted by the series of ligands. **Results**: The ligands showed excellent interaction with the viral proteins. The interaction energy and the residues are reported.

Conclusion: These molecules can be treated as anti dengue drugs.

Keywords: Dengue, Homology Modeling, Panduratin, Protein-protein docking, drug design

OP - 43

CYPERMETHRIN MEDIATED SPERM NUCLEAR FRAGMENTATION, HORMONAL DISRUPTION AND ANTI-STEROIDOGENESIS : POSSIBLE AMELIORATING ROLE OF ZINC AND ALPHA LIPOIC ACID

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Background: Cypermethrin (á- Cyano-3-Phenoxybenzyl (+ cis, trans) 3-(2, 2-Dichlorovinyl)-2, 2-dimethyl cyclopropane carboxylate), a synthetic type II pyrethroid and is widely used for insect control, food storage, in public health and animal husbandry. The indiscriminate use of cypermethrin is reported to cause both acute and chronic toxicity in non target species including humans. **Objectives:** The present study was designed to evaluate the toxic effects of cypermethrin on rat sperm, male steroidogenic and hormonal biomarkers and also to assess the ameliorating role of zinc and á-lipoic acid under these toxic conditions. **Methods:** Male Albino Wister rats were received oral cypermethrin treatment at the dose levels of 40 and 80 mg/kg body weight, with the pretreatment of zinc (1-2mg/kg body wt) and á- lipoic acid (35 mg/kg body wt) for consecutive 14 days. **Results:** Cypermethrin reduced epididymal sperm motility, sperm count, hypo-osmotic swelling of rat sperm, altered epididymal sperm morphology and induced sperm nuclear fragmentation which was restored significantly in the zinc and á- lipoic acid supplemented group. Cypermethrin altered testicular index and other testicular biomarkers. Activities of testicular $^{\Delta 5}$ 3â HSD, 17â HSD, Glucose-6-P-dehydrogenase and serum testosterone were decreased significantly in the cypermethrin-treated groups whereas serum LH, FSH increased significantly ($p<0.01$,) in high dose cypermethrin-treated group compared to the control group decreased significantly The present study showed that co-administration of zinc and á-lipoic acid significantly improved the evaluated parameters. **Conclusions:** The results revealed the combined ameliorative and beneficial role of zinc and á- lipoic acid on sperm parameters, steroidogenesis and hormone disruption in cypermethrin treated male rat.

Keywords: Cypermethrin; Zinc and á-lipoic acid; Sperm parameters; Steroidogenesis; Testicular biomarkers; Hormone disruption.

Poster Presentations

LIST OF POSTER PRESENTATION

POSTER SESSION - 1 (Shahid Dr. Milon Hall) 06.12.2014, 9:00 AM-9.00 PM

BLOOD

PP-1. Study on Anemia and Serum Ferritin Level Among the Medical Students of Dhaka City
Hafiza Akhter, Nasim Jahan, Nayma Sultana

PP-2. G6PD Status in Patients with Presenile and Senile Cataract
Farzana Yasmin, Noorzahan Begum, Sultana Ferdousi

PP-3. Estimation of Platelet Indices: A Study on Type 2 Diabetic Bangladeshi Male Subjects
Fayeza Karim, Qazi Shamima Akter, Shamima Jahan, Afruza Khanom

PP-4. Changes in Mean Platelet Volume (MPV) in Adult Obese Female
Nadia Noor, Qazi Shamima Akter

PP-5. Frequencies of ABO and Rhesus Blood Alleles in a Strict Endogamous Sub-tribe of Sindh (Pakistan): (Tribe: Noohani sub-tribe Setharani)
Rashida Bhatti, DM Shaikh

CARDIOVASCULAR SYSTEM

PP-6. Heart Rate Variability in Patients with Essential Hypertension
Rehnuma Tabassum, Noorzahan Begum, Sultana Ferdousi

PP-7. Changes in Heart Rate Variability after Practicing Deep Relaxation in Sedentary Females
Monzur-E- Fatema, Noorzahan Begum, Sultana Ferdousi

PP-8. Time Domain Measures of Heart Rate Variability to Assess Autonomic Dysfunction in Irritable Bowel Syndrome
Mohammad Nayem, Noorzahan Begum, Sultana Ferdousi

PP-9. Relationship of Plasma Homocysteine and Lipid Profile with Ischemic stroke
AKM Quamruzzaman, AKM Khairuzzaman, Ishrat Sharmin, Rokeya Begum, Qazi Shamima Akhter

PP-10 Power Spectral Analysis of Heart Rate Variability to Assess Cardiac Autonomic Nerve Function Status in Bangladeshi Female with Iron Deficiency Anemia
Farhana Rahman, Qazi Shamima Akter, Qazi Farzana Akter

RESPIRATORY SYSTEM

PP-11. Effects of Pulmonary Rehabilitation on Lung Functions in Patients with Chronic Obstructive Pulmonary Disease
Mohammad Nesar Uddin Ahmed, Shelina Begum, Taskina Ali

PP-12. FVC, FEV1, TEV1/FVC% In Patients With Irritable Bowel Syndrome
Syeda Muslema Akhtary, Shelina Begum, Taskina Ali

PP-13. Estimation of Serum Homocysteine Level in Bangladeshi Male Smokers
Shamima Jahan, Qazi Shamima Akhter, Fayeza Karim

PP-14. Effects of Dietary Modification on Some Aspects of Anthropometry and Pulmonary Functions in Patients with Stable COPD
Taskina Ali, Noorzahan Begum, Kazi Saifuddin Bennoor

PP-15. Evaluation of the Antinociceptive and Anti-inflammatory Effects of Essential Oil of Nepeta Pogonosperma Jamzad et Assadi in Rats
Taskina Ali , Mohammad Javan, Ali Sonboli, Saeed Semnanian

ENDOCRINE SYSTEM

PP-16. Thyroid Hormonal Status In Preterm Neonates In Postnatal Periods
Zinia Parveen, Prof Noorzahan Begum

PP-17. Study on Glycosylated Hemoglobin in Different Levels of BMI
Rajesh Kumar Das, Akhtarun Nessa

PP-18. Relationships of Nerve Conduction Parameters with the Thyroid Hormones in Hypothyroid Patients
Sabina Yeasmin, Noorzahan Begum, Shelina Begum, Shah M Hafizur Rahman

PP-19. Study on Serum FT4 and TSH Levels and Their Correlations with Thyroid Peroxidase Antibody (TPO-AB) During First Trimester in Normal Pregnancy
Ohida Sultana, Nasim Jahan, Nayma Sultana

PP-20. Assessment of Insulin Resistance in Adult Obese Female
Masuma Tasnim, Qazi Shamima Akhter

PP-21. Assessment of TSH level in Children with Autism Spectrum Disorders
Sybilla Ferdousy, Qazi Shamima Akhter, Qazi Farzana Akhter, Farhana Rahman

PP-22. Impacts of Serum Glucose levels with Waist Circumference and Body Mass Index
Nazma Parvin, Chandra Sharker

POSTER SESSION - 2 (Shahid Dr. Milon Hall) 07.12.2014, 9:00 AM-9.00 PM
NERVOUS SYSTEM

PP-23. Effects of α-Tocopherol on Nociception and Inflammation in Long Evans Rats
Farah Imrana, Noorzahan Begum, Taskina Ali

PP-24. Pattern-Reversal Visual Evoked Potential of Seven to Eleven Years Children
Limbu Nirmala, Maharjan Sanjay, Thakur Dilip and Paudel Bishnu Hari

PP-25. Autonomic Dysfunction in Current Regular Cigarette Smokers
Mehboba Ferdous, Sultana Ferdousi

PP-26. Effects of α-tocopherol and Its Combination with Diclofenac on Pain and Inflammation in Rats
Tahmima Juaira, Noorzahan Begum, Taskina Ali

PP-27. Effects Vitamin B12 Supplementation on Pain & Inflammation in Long Evans Rats
Masud Imtiaz, Noorzahan Begum, Taskina Ali

PP-28. Effects of Folic Acid on Pain in Long Evans Rats
Masud Imtiaz, Noorzahan Begum, Taskina Ali

PP-29. Effects of α-tocopherol and its Combination with Morphine on Pain and Inflammation in Rats
Tamanna Habib, Shelina Begum, Taskina Ali

PP-30. Antinociceptive and anti-inflammatory effects of essential oil of Nepeta crispa Willd. in experimental rat models
Taskina Ali, Mohammad Javan, Ali Sonboli, Saeed Semnanian

Reproductive System

PP-31. Relationship between FEF25-75, PEFR and SVC With Serum Estrogen And Progesterone Level in Postmenopausal Women
Zinat Ara Polly, Shelina Begum, Sultana Ferdousi, Noorzahan Begum, Taskina Ali

PP-32. Study on Some Aspects of Lung Function Status and their Relationships with Serum Estrogen and Progesterone Levels in Postmenopausal Women
Zinat Ara Polly, Shelina Begum, Sultana Ferdousi, Noorzahan Begum, Taskina Ali

PP-33. Effects of Physical Exercise and Hormone Replacement Therapy (HRT) on Serum Lipid Profile in Postmenopausal Women
Tabassum Ferdous, Nasim Jahan, Nayma Sultana

PP-34. Prediction of Preeclampsia During Early Pregnancy in Primiparas with Soluble fms-like Tyrosine Kinase-1 and Placental Growth Factor
Dileep Kumar Rohra, Amna Zeb, Rahat Najam Qureishi, Syed Iqbal Azam, Neelofur Babar Khan, Hina Saeed Zuberi, Rozina Sikandar

PP-35. Study on Serum Lipid Profile Status and Bone Mineral Density in Surgical Postmenopausal Women
Farhana Kabir, Nasim Jahan, Nayma Sultana, Rezina Akter

Renal System/ Gastrointestinal System/ Related areas

PP-36. Biological and Chemical Standardization of Coccinia indica Fruit
Tapas Kumar Sur, Jagadish Pant, Robert Maraby, Biswajit. Mukherjee

PP-37. Study on Serum Lipid Profile, Magnesium, Calcium and Iron in Autistic Spectrum Disorder (ASD)
Shahana Parvin, Shelina Begum, Shorifa Shahjadi

PP-38. The Effect of Ramadan Fasting on Some Aspects of Metabolism in Healthy Male
Tanzin Ara Begum, Nasim Jahan, Nayma Sultana

ABSTRACTS OF POSTER PRESENTATION

PP-1

STUDY ON ANEMIA AND SERUM FERRITIN LEVEL AMONG THE MEDICAL STUDENTS OF DHAKA CITY

Hafiza Akhter, Nasim Jahan, Nayma Sultana

Department of Physiology, Sir Salimullah Medical College, Dhaka

Background: To know the morphological types of anaemia and the relationship of serum ferritin level with blood haemoglobin and serum protein status in young adults are very important to prevent anaemia among this population. **Objective:** To observe the different types of anaemia in young adults and also to find out the relationship of serum ferritin level with haemoglobin and serum protein status in microcytic hypochromic anaemic subjects. **Methods:** This cross sectional study was carried out in the Department of Physiology, Sir Salimullah Medical College, Dhaka from July 2009 to June 2010. A total number of 516 apparently healthy young adults of both sexes, age ranged from 18 to 22 years were selected for the study. Their haematological parameters were done for detection of anaemia. Of them, 240 were anaemic (study group) and 276 were nonanaemic (control group). Again, Serum ferritin and serum protein status were also estimated in subjects who were suffering from microcytic hypochromic anaemia to observe their relationship. The statistical analysis was done by using unpaired 't' test and Pearson's correlation coefficient test as applicable. **Result:** In this study, total anaemic subjects were 46.5% . Of them, 26.2 % were female and 20.3% were male. Among the anaemic female subjects, 65.9% had normocytic normochromic anaemia, 32.6% had microcytic hypochromic anaemia and 1.5% had macrocytic anaemia. Whereas in anaemic male subjects, 77.1% had normocytic normochromic anaemia, 22.9% had microcytic hypochromic anaemia and none of the male had macrocytic anaemia. Again, a significant positive correlation of serum ferritin level with haemoglobin was observed in both female and male in microcytic hypochromic anaemic group. **Conclusion:** Anaemia may occur in some apparently healthy young medical students of Dhaka city.

Key words: Anaemia, serum ferritin, serum protein.

PP-2

G6PD STATUS IN PATIENTS WITH PRESENILE AND SENILE CATARACT

Farzana Yasmin[1], Noorzahan Begum[2], Sultana Ferdousi[2]

[1]*Department of Physiology,Bangladesh Medical College, Dhaka,* [2]*Department of Physiology, Bangabandhu Sheikh Mujib Medical University, Dhaka*

Background: Glucose-6-phosphate dehydrogenase (G6PD) deficiency is one of the common enzymopathy and may be one of the risk factor for both presenile and senile cataract. Objective: To observe erythrocyte G6PD level in male patients with presenile and senile cataract in order to find out their enzyme status. **Methods:** This cross sectional study was carried out in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Shahbag, Dhaka between 1st July 2009 and 30th June 2010. 60 male patients with presenile and senile cataract were included in the study group (Group-B). They were selected from Out patient Department (OPD) of Ophthalmology of BSMMU in Dhaka City. For comparison age matched 60 apparently healthy male

without cataract (Group A) were also studied. According to age both study & control group were again subdivided in to Group B_1 & A_1 (presenile, aged 40-60 years) and Group B_2 & A_2 (senile, aged >60 years). Erythrocyte G6PD level was measured by Spectrophotometric method. Data were analyzed by independent sample t test, ANOVA, Chi-square test as applicable. **Results:** Mean erythrocyte G6PD level was significantly lower ($p<0.01$) in the presenile and senile cataractous groups compared to their corresponding noncataractous subjects. However 26.7% cataractous patients in presenile and 6.7% in senile group were G6PD deficient. Conclusion: Erythrocyte G6PD deficiency may be present in both presenile and senile cataract but more marked in presenile cataract patients.

Keywords: G6PD, Presenile, Senile, Cataract

PP-3

ESTIMATION OF PLATELET INDICES: A STUDY ON TYPE 2 DIABETIC BANGLADESHI MALE SUBJECTS

Fayeza Karim[1], Qazi Shamima Akter[2], Shamima Jahan[3], Afruza Khanom[4]

Department of Physiology, Dhaka Medical College, Dhaka

Background: The patient with diabetes mellitus (DM) and its complication is increasing in our country and all over the world. Altered platelet morphology and function have been reported in patient with DM. Platelet indices act as a newly emerging and independent risk marker for atherothrombosis and cardiovascular diseases. **Objective:** To assess the platelet indices in male subjects with type 2 diabetes mellitus. **Methods:** It was a cross sectional study and conducted in the Department of Physiology, Dhaka Medical College, Dhaka from July 2013 to June 2014. A total number of 200 adult male subjects were selected with age ranging from 40 to 60 years. Among them, 100 type 2 diabetic subjects were included in the study group (Group B) and 100 healthy subjects were considered as controls (Group A) for comparison. The subjects were selected from BIRDEM, Dhaka and also by personal contact from different areas of Dhaka city on the basis of exclusion and inclusion criteria. Platelet indices (mean platelet volume and platelet distribution width) were estimated in the Department of Hematology, BIRDEM, Dhaka. For statistical analysis, unpaired Student's 't' test was performed. **Results:** In this study, mean platelet volume was significantly ($P<0.001$) higher in the study group than that of control group. Again, platelet distribution weight was significantly ($P<0.001$) increased in the study group than that of control group. **Conclusion**: From this study, it may be concluded that estimation of platelet indices might be beneficial for prediction of future cardiovascular risk in adult diabetic male.

Key words: Platelet indices, cardiovascular disease, diabetes mellitus.

PP-4

CHANGES IN MEAN PLATELET VOLUME (MPV) IN ADULT OBESE FEMALE

Nadia Noor[1], Qazi Shamima Akter[2]

Dhaka Medical College, Dhaka

Background: Obesity acts as a predisposing factor for the development of many pathological conditions, including diabetes, atherothrombosis, cardiovascular disease (CVD), hypertension, dyslipidemia, nonalcoholic fatty liver disease and certain cancers. Altered platelet morphology and function have been reported in individuals with obesity. MPV have been suggested as a newly

emerging and independent risk marker for atherothrombosis and CVD. **Objectives:** To measure MPV in adult obese female. **Methods:** The present study was a cross sectional analytic study and conducted in the Department of Physiology, Dhaka Medical College, Dhaka from July 2012 to June 2013. A total number of 100 female subjects were selected with age ranging from 20 to 40 years. Among them, 50 obese female subjects were included in the study group (Group B), selected by personal contact from different areas of Dhaka city. And 50 age matched, healthy non-obese female subjects were selected as controls (Group A) who were also selected by personal contact from different areas of Dhaka city. These data were collected and recorded in pre-designed structured questionnaire by the researcher herself. MPV were measured by light scattering method in automated analyzer in Department of Hematology, Dhaka Medical College, Dhaka. For statistical analyses unpaired Student's't' test and Pearson's correlation coefficient (r) test were performed as applicable using SPSS for Windows version 20. **Results**: In this study, MPV were significantly ($p<0.05$) higher in the study group than that of control group. Conclusion: This study concludes that there is a positive correlation between obesity and MPV. Therefore, measurement of MPV might be beneficial for prediction of future cardiovascular risk in adult obese subjects.

Key words: Obesity, mean platelet volume (MPV) and cardiovascular disease (CVD).

PP-5

FREQUENCIES OF ABO AND RHESUS BLOOD ALLELES IN A STRICT ENDOGAMOUS SUB-TRIBE OF SINDH (PAKISTAN): (TRIBE: NOOHANI SUB-TRIBE SETHARANI)

Rashida Bhatti, DM Shaikh

Department of Physiology, University of Sindh, Jamshoro

Background: The blood alleles are genetic markers and exhibit different distribution in different human populations. Their distributions have been used in working out the genetic differences between different populations and are important from anthropological point of view. The allelic frequencies of ABO and Rh blood groups have been reported for many populations of the world. **Objective:** The distribution of ABO and Rh blood groups alleles in an isolated population an endogamous tribe settled in Sindh Pakistan, *i.e.*, sub –cast Setharani (main tribe Noohni), settled near Jamshoro. **Methods:** Noohani tribe is an endogamous tribe settled in the hilly areas of Khirthar mountains in southern Sindh (Pakistan). A sub-cast of this tribe, called Setharani, is settled in two closely located villages, i.e., Jhangara-Bajara and Jamshoro , both males and females (total 100) of the sub-population under study were approached and their blood was collected, by finger pricking method, and tested with high titer of anti-A, anti-B and anti-D antibodies (Gamma Biological Inc. 1995). Allelic and genotypic frequencies and their standard deviations were calculated. **Results:** Out of 100 individuals tested for blood groups 80 (80%) belonging to A, 4 (4%) to B, 16 (16%) to O and none to AB blood group. The allelic frequencies for A, B and O alleles have been calculated as: 0.579±0.032, 0.04±0.0001 and 0.4±0.09. No Rh-negative individual has been observed in the present populations. The calculated frequency of D allele is 1.00 and d=0.00. **Conclusion:** The population exhibits very characteristic frequencies of the two blood group alleles in the present study. There is a total absence of d-allele of Rh-blood locus and a very low frequency of B-allele of ABO-locus.

Keywords: ABO blood groups, allelic frequencies.

PP-6

HEART RATE VARIABILITY IN PATIENTS WITH ESSENTIAL HYPERTENSION

Rehnuma Tabassum, Noorzahan Begum, Sultana Ferdousi

Department of Physiology, Bangabandhu Sheikh Mujib Medical University

Background: Essential hypertension may be associated with altered cardiovascular autonomic nerve function. Heart Rate Variability (HRV) analysis is an important tool for quantitative measurement of autonomic nerve activity. **Objective:** To assess the cardiac autonomic nerve function status in essential hypertension by analyzing time domain measures of heart rate variability. **Methods:** This cross sectional study was done in the Department of Physiology,Bangabandhu Sheikh Mujib MedicalUniversity from 1st July 2008 to 30th June 2009. For this purpose, 60 hypertensive male patients with age ranged between 40-60 years (group B) were enrolled from the Out Patient Department of Cardiology, BSMMU, Dhaka. Based on treatment received, hypertensive patients were subdivided into group B1i.e.untreated patients on their 1st day of diagnosis and group B2 i.e.patients with antihypertensive therapy. For comparison, 30 age & sex matched apparently healthy normotensive subjects (group A) were also studied as control group. Time domain measures of Heart Rate Variability (HRV) such as Mean RR intervals, Mean HR, SDNN & RMSSD were assessed by a Polygraph machine to observe both sympathetic and parasympathetic nerve function status. For statistical analysis of data,Independent sample t-test, One-way ANOVA test, were used as applicable. **Results:** Mean R-R interval SDNN and RMSSD were significantly ($P<0.01$) lower but mean heart rate was significantly ($P<0.01$) higher in untreated hypertensive patients than those of normotensive subjects. But differences in all these 4 parameters when compared between control and treated hypertensive patients were found statistically non significant. **Conclusion:** Impaired cardiac autonomic nerve function characterized by sympathetic overactivity may occur in hypertensive patients.

Key words: Mean RR; SDNN; RMSSD; hypertension

PP- 7

CHANGES IN HEART RATE VARIABILITY AFTER PRACTICING DEEP RELAXATION IN SEDENTARY FEMALES

Monzur-E- Fatema [1], Noorzahan Begum [2], Sultana Ferdousi[3]

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Background: Lower heart rate variability (HRV) in sedentary people is associated with higher risk of coronary heart diseases. Deep Relaxation Technique (DRT) is associated with higher HRV which reduces the risk of coronary heart diseases. **Objectives:** To assess HRV after practicing DRT to find out it's effect on cardiac autonomic nerve function in sedentary subjects. **Methods:** This cross sectional study was carried out in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University from July 2012 to June 2013 on 30 apparently healthy sedentary females aged 25-35 years (study) who were practicing DRT with 3 months duration. For comparison, age and BMI matched 30 apparently healthy sedentary females who had no experience of relaxation technique (control) were also studied. Both groups were selected from the sedentary housewives in Dhaka by personal contact. The study subjects were participants in a private yoga center in Dhaka. HRV was assessed by a Polygraph. Statistical analysis was done by Independent Sample t-test. **Results:** Resting total power ($p<0.001$), HF power ($p<0.01$), HF norm ($p<0.05$) were significantly higher and LF

power (p<0.001), LF norm (p<0.05), LF/HF (p<0.01) were significantly lower in the relaxation group than the non relaxation group. **Conclusion:** Cardiac autonomic nerve function is improved by DRT with parasympathetic dominance in sedentary females.

Key words: HRV, Sedentary females, Deep relaxation technique.

PP-8

TIME DOMAIN MEASURES OF HEART RATE VARIABILITY TO ASSESS AUTONOMIC DYSFUNCTION IN IRRITABLE BOWEL SYNDROME

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Background: Autonomic nerve function impairment is related to development of Irritable Bowel Syndrome (IBS). Time domain measures of Heart rate variability (HRV) is a useful tool to measure autonomic nerve function activity. Objective: To assess autonomic nerve function activity by time domain measures of heart rate variability in patients with Irritable Bowel Syndrome. Methods: This cross sectional study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka from 1st July 2010 to 30th June 2011. Ninety patients aged 20-50 years of both sexes with Irritable bowel syndrome were included in the study group. They were collected from the OPD of Gastroenterology in BSMMU. Age and sex matched 30 apparently healthy subjects served as control. For assessing HRV by time domain method, Mean heart rate Mean R-R interval, Max/Min R-R interval, SDNN, RMSSD, PNN50%, NN5O% were recorded by a digital Polyrite. ANOVA, independent sample t-test and Pearson's correlation coefficient tests were performed as applicable. Results: Mean heart rate were significantly higher and Mean R-R interval, Max/Min R-R interval, SDNN, RMSSD, PNN50%, NN50% % were significantly lower in IBS groups compared to those of control. Correlation analysis showed negative correlations of SDNN, RMSSD, PNN50%, NN50% with duration of disease. **Conclusion:** This study concludes that decrease parasympathetic activity in patients of IBS. In addition, decreased vagal modulation may be inversely related to the duration IBS.

Key Words: Heart Rate Variability, Autonomic Dysfunction, Irritable Bowel Syndrome

PP-9

RELATIONSHIP OF PLASMA HOMOCYSTEINE AND LIPID PROFILE WITH ISCHEMIC STROKE

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Background: Stroke is a major cause of death and disability worldwide. Each year, about 4.4 million people die of stroke globally, of whom almost three million are from developing countries. **Objective:** To find out the association of plasma homocysteine and lipid profile with ischemic stroke. **Method:** This cross sectional study was conducted in the department of Physiology, Dhaka Medical College, and Dhaka from January 2009 to December 2009. The study was included 50 diagnosed acute ischemic stroke patients as cases (group B_1 & B_2) both men and women age ranging from (30-70)

years, (B_1 = 30-50 years and B_2 = 51-70 years), (Diagnosed by history, clinical findings and confirmed by CT scan of brain) 50 healthy persons were selected as control (group A_1 & A_2). The study parameters were plasma homocysteine, serum total cholesterol, LDL cholesterol, HDL cholesterol and TG. The data were collected in a prescribed data sheet after taking consent. For comparison between two groups statistical analysis were done by unpaired student's "t"-test by SPSS program. **Result:** The result were expressed by (mean + SD), Plasma total homocysteine level was statistically higher than that of control ($p<0.05$), ($p<0.001$). Serum cholesterol, TG in group B_1 and B_2 was higher than that of control group and LDL cholesterol in group B_1 and B_2 was lower than that of control group but statistically not significant. HDL cholesterol was significantly lower in group B_1 and B_2 than that of control group ($p<0.05$), ($p<0.001$). **Conclusion:** Hyperhomocysteinemia and dyslipidaemia is an independent risk factor for development of ischemic stroke.

Key Words: Stroke, Plasma homocysteine, Lipid profile.

PP-10

POWER SPECTRAL ANALYSIS OF HEART RATE VARIABILITY TO ASSESS CARDIAC AUTONOMIC NERVE FUNCTION STATUS IN BANGLADESHI FEMALE WITH IRON DEFICIENCY ANEMIA

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Background: Iron deficiency anemia is considered as one of the major public health problem in Bangladesh and statistical survey revealed that women are mostly affected. Cardiac autonomic nerve dysfunction may present in iron deficiency anemia which increases the risk and further complications of this disease. Assessment of heart rate variability (HRV) is a non-invasive technique to evaluate cardiac autonomic nervous activity. **Objective:** To analyze HRV by power spectral method in order to find out the influence of iron deficiency anemia on cardiac autonomic nervous activity in Bangladeshi female of reproductive age. **Methods:** This cross sectional study was conducted in the Department of Physiology, Dhaka Medical College, Dhaka from July 2012 to June 2013. For this, 100 female subjects with iron deficiency anemia aged 20-45 years were included in the study group (Group B). The anemic subjects were selected from Outpatient Department of Haematology in Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. For comparison, age and sex matched 100 apparently healthy female were selected as control (Group A) by personal contact from the different areas of Dhaka city. Analysis of HRV parameters were done in Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. Power spectral measures of HRV including Total Power (TP), Low Frequency (LF), High Frequency (HF) and LF/HF were measured by polygraph. For statistical analysis, unpaired Student's t-test was performed by using SPSS (version-19) as applicable. **Result:** Mean resting pulse rate, LF power, LF norm and LF/HF were significantly ($p <0.0001$) higher and total power, HF power, HF norm were significantly ($p <0.0001$) lower in subjects with iron deficiency anemia in comparison to those of control group. **Conclusion:** Cardiac autonomic regulation with increased sympathetic and decreased parasympathetic modulation occurs in Bangladeshi female with iron deficiency anemia.

KeyWord: Heart Rate Variability, Cardiac Autonomic Nerve Function, Iron Deficiency Anemia

PP-11

EFFECTS OF PULMONARY REHABILITATION ON LUNG FUNCTIONS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Background: The importance of pulmonary rehabilitation (PR) as a therapeutic measure for COPD patients is well known. **Objectives:** Concerning the improving effect of individual pulmonary rehabilitation (PR) program on the physical efficiency of COPD patients this observational study was designed to evaluate the effects of combination of pursed lip breathing, diaphragmatic breathing and lower extremity endurance training (as pulmonary rehabilitation program) on lung function status (FVC, FEV_1, FEV_1/FVC ratio, PEFR) in male patients with moderate stable COPD. **Methods:** This prospective study was carried out in the Department of Physiology, BSMMU, Dhaka from 1st July 2010 to 30th June 2011 on 116 male stable moderate COPD patients (50 to 65 years) were selected from the OPD of the Department of Medicine of BSMMU, Dhaka and OPD of the Department of Medicine of NIDCH, Dhaka. All the patients were grouped as control (56 patients without rehabilitation) and experimental (60 patients with rehabilitation). The above mentioned PR program was advised to the experimental patients to perform them 30 minutes duration per session at home twice daily, for consecutive 60 days, along with the standard drug treatment of COPD. On the contrary, the control patients were advised to continue their standard drug treatment alone for consecutive 60 days. All the above mentioned study variables were assessed on day 0 and day 60 for both the groups and the statistical analysis was done by independent sample 't' test and paired Student's 't' test. **Results:** A trend of improvement was observed in all the lung function variables in comparison to the control patients after 60 days of follow up. **Conclusions:** The study reveals improvement of lung functions with this sort of combination of PR program in COPD patients.

Key words: Pulmonary Rehabilitation, COPD, Spirometry, FVC, FEV_1, FEV_1/FVC ratio, PEFR.

PP-12

FVC, FEV_1, TEV_1/FVC% IN PATIENTS WITH IRRITABLE BOWEL SYNDROME

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Background: The prevalence of bronchial hyper responsiveness has been increased recently among the patients with IBS. **Objectives:** To observe the ventilatory variables in IBS patients of different duration and to correlate them with the duration of the disease. **Method:** This cross-sectional study was carries out in the Department of Physiology of Bangabandhu Sheikh Mujib Medical University (BSMMU), Shahbagh, Dhaka, from July 2010 to June 2011. A total number of 140 female subjects were selected, among which 105 were of IBS patients (study group) and 35 were age and BMI matched apparently healthy female for comparison (control). Based on duration of the disease, patients were again subdivided into B_1 (newly diagnosed patients), B_2 (patients of 2 to 5 years) and B_3 (patients of 5 to 10 years). Ages of' all the participants were ranged from 20 to 45

years and they were matched in terms of sex, BMI, occupation and socioeconomic status. Controls were selected from the community and the patients from the Out Patient Department (OPD) of Gastroenterology, BSMMU, Dhaka. All the lung functions were assessed by measuring FVC, FEV_1 and FEV_1/FVC%, with a portable Digital Micro DL spirometer. For statistical analysis Independent Sample 't' test, One way ANOVA test, Chi-square test and Pearson's correlation coefficient test were performed, as applicable. **Results:** The mean percentage of predicted values of lung function variables in healthy female subjects were within normal ranges. Almost all the ventilatory variables were significantly lower in all the IBS patients of different durations in comparisons to the healthy controls. In additions, almost all the study variables were lower in the IBS patients with longer duration when compare to the patient with shorter duration. Moreover, all the variables were lower in group B_3 when compared to group B_2). In addition, all variables were positively correlated with duration of disease in B_1 and FVC, FEV_1 were positively correlated and FEV_1/FVC%, negatively correlated with duration of' IBS in group B_2. Again, all variables were negatively correlated with duration of IBS in group B_3. All these values were statistically non significant. **Conclusion:** The spirometric variables may decrease in IBS patients and the reduction is associated with duration of the disease.

Keywords: IBS, FVC, FEV_1, FEV_1/FVC%.

PP-13

ESTIMATION OF SERUM HOMOCYSTEINE LEVEL IN BANGLADESHI MALE SMOKERS

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Background: Smoking may cause hyperhomocystenemia that play a vital role in development of atherosclerosis and acute cardiovascular events. **Objective:** To assess the serum homocysteine (Hcy) level in male smokers. **Methods:** The present cross-sectional study was carried out in the Department of Physiology, Dhaka Medical College, Dhaka between July 2014 to June 2014. A total number of 200 male subjects were selected with age ranging from 20 to 40 years. Among them, 100 male smokers were included in the study group (Group B) and 100 male non-smokers of same age range were considered as controls (Group A). All of the subjects were selected by personal contact from different areas of Dhaka city. Serum Hcy level was estimated in the Department of Biochemistry, BSMMU, Dhaka. For statistical analysis, unpaired Student's 't' test was performed as applicable using SPSS for Windows version 17. **Results:** The mean serum homocysteine level was significantly higher in adult male smoker than that of adult male non smoker ($p < 0.001$). **Conclusion**: This study concludes that serum homocysteine level increases in male smokers which may act as risk factor for future cardiovascular diseases and atherosclerosis.

Key words: Serum Homocysteine and male smoker.

PP-14

EFFECTS OF DIETARY MODIFICATION ON SOME ASPECTS OF ANTHROPOMETRY AND PULMONARY FUNCTIONS IN PATIENTS WITH STABLE COPD

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Background: Chronic Obstructive Pulmonary Disease (COPD) is one of the most common respiratory ailments encountered by the physicians and it is a major cause of death and disability in adults worldwide. The association between severe nutritional depletion and COPD has long been recognized. In the management of COPD patients clinicians give emphases on drug treatment alone giving least or no importance on nutritional supplementation. One of the goals in treating stable COPD patients with malnutrition is to correct the malnutrition without increasing the respiratory quotient and production of CO_2. **Objective:** This study was to evaluate the efficacy of high vegetable fat and low carbohydrate diet in malnourished patients with stable COPD on some aspects of anthropometry and pulmonary functions. **Method:** For this purpose, 54 male COPD patients with low body weight (<90% ideal body weight), attending Out Patient Department of BSMMU, were randomized to the "control" group (26), who received normal (ad lib) diet with concominent drug regimen and the "study" group (28), who received modified diet (carbohydrate 25%, protein 30%, vegetable fat 45%) with concominent drug regimen. Measurement on anthropometry by body weight and mid arm circumference and pulmonary functions by FVC, FEV_1, FEV_1/FVC ratio and PEFR with respiratory rate, were taken, both before and after 90 days supplementation of modified diet. All these variables were also studied in control group. **Result:** All the study variables were improved in the patients of the study group in comparison of the control patients, though statistical significance was observed only in body weight ($p<0.05$) and respiratory rate ($P<0.001$). **Conclusion:** This study reveals that the high vegetable fat and low carbohydrate diet, adjusted to metabolic requirements, may cause clinical improvement in malnourished stable COPD patients. However the intervention is time consuming and costly. More detailed work of alternative outpatient strategies of controlled supervision combined with larger sample size is indicated to delineate the full therapeutic potential of nutritional support for this group of patients.

Keywords: High vegetable fat; low carbohydrate; COPD; Diet; Pulmonary functions

OP - 15

EVALUATION OF THE ANTINOCICEPTIVE AND ANTI-INFLAMMATORY EFFECTS OF ESSENTIAL OIL OF NEPETA POGONOSPERMA JAMZAD ET ASSADI IN RATS

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Background: The management of pain is probably one of the most common and yet most difficult aspects in medical practice. Many improved analgesics and anti-inflammatory agents have been developed, but there is considerable opportunity for conceptual innovation.

Objective: This study was designed to evaluate the antinociceptive and anti-inflammatory effects of essential oil of Nepeta pogonosperma Jamzad et Assadi (NP) in male Wister rats.

Methods: Air-dried aerial parts of NP were hydrodistillated and GC-MS analysis of obtained essential oil was conducted. Total 24 male Wister rats weighing 225 ± 25 gm were studied. Essential oil of NP was administered intraperitoneally at the doses of 50 mg/kg, 100 mg/kg and 200 mg/kg for the experimental groups. Control rats received equal volume (2 ml/kg) of normal saline. Antinociception was assessed by tail flick test (after 30 minutes) and formalin test (for further 60 minutes). Then the animal was sacrificed and the paw edema was measured using a water plethysmometer.

Results: 4a ,7 ,7a -nepetalactone and 1,8-cineole were found as the main concentrated components of NP essential oil. All the doses of NP showed antinociception. NP 200 mg/kg reduced the pain sensation in tail flick ($p < 0.01$) and formalin test ($p < 0.001$ in both phases). In paw edema test, NP 100 and 200 mg/kg significantly reduced the inflammation ($p < 0.01$ and $p < 0.05$).

Conclusion: This study reveals that the essential oil of NP may minimize both the acute and chronic forms of nociception and may have potent role against inflammation, but the dose should be maintained precisely to obtain the intended effect.

Keywords: Nociception, Nepeta pogonosperma, Formalin test, Tail flick test, Essential oil, Inflammation

PP-16

THYROID HORMONAL STATUS IN PRETERM NEONATES IN POSTNATAL PERIODS

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Background: Management of preterm neonates has remained a major problem in developing countries like Bangladesh. The preterm neonates are born with different biochemical and metabolic disturbances, including thyroid function. **Objectives:** To observe the postnatal changes of thyroid hormones in preterm neonates in terms of serum TT_4 (total thyroxin), TT_3 (total tri-iodothyronine), FT_4 (free thyroxin) and TSH (thyroid stimulating hormone) levels. To utilize the results as background information for diagnostic and therapeutic measures to minimise the complications as well as mortality and morbidity in preterm neonates. **Methods:** This prospective study was carried out from July 2002 to June 2003 in Combined Military Hospital, Dhaka to observe the postnatal changes of thyroid hormones in preterm neonates. Group A (control group) consisted of 27 apparently healthy full term neonates who were studied on day 5 only to observe the base line data. Group B (experimental group) consisted of 30 preterm neonates who were studied twice on day 5 (B_1) and on day 45 (B_2). The serum levels of TT_4, TT_3, FT_4 and TSH were estimated by Electro chemiluminescent assay. **Results:** The mean±SD gestational age was 38.41± 0.93 and 33.37± 1.88 weeks in group A and B respectively and the difference was statistically significant ($p<0.001$). On day 5 in full term neonates the serum levels of TT_4, TT_3, FT_4 and TSH were within normal range but in preterm neonates though the FT_4 and TSH levels remained within normal range, 53% had significantly decreased levels of serum TT_4, TT_3 ($p<0.001$). However, on day 45 all these preterm neonates attained normal values of these hormones. **Conclusions:** This study revealed that 53% preterm neonates developed hypothyroxinaemia which was transient in nature and corrected spontaneously with the advancement of postnatal age.

Key word: Thyroid hormonal status, Preterm neonates, Postnatal period

PP-17

STUDY ON GLYCOSYLATED HEMOGLOBIN IN DIFFERENT LEVELS OF BMI

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Background: Body mass index is an inexpensive and easy method of screening for weight categories that may lead to health problems. Increased BMI in overweight and obese persons is directly associated with an increase in metabolic disease, such as type 2 diabetes mellitus. **Objectives:** This Analytical cross sectional study was undertaken to assess the relation between increasing BMI and glycemic control of body through measuring glycosylated hemoglobin. **Methods:** This study was carried out in the Department of Physiology, Mymensingh Medical college, Mymensingh, Bangladesh from 1st July 2011 to 30th June 2012 on 180 equally divided male and female persons between the age of 25 to 55 years. Age more than 55 years and less than 25 years and diagnosed case of Hypothyroidism, Cushing's syndrome, Polycystic ovary, Antipsychotic drug user and regular steroid users were excluded. Non probability purposive type of sampling technique was used for selecting the study subjects. Measurement of body mass index was done as per procedure. Glycosylated hemoglobin was estimated by Boronate Affinity method. Statistical analysis was done by SPSS (version 17.0). Data were expressed as Mean (SE) and statistical significance of difference among the groups were calculated by unpaired student's 't' test and Pearson's correlation coefficient tests were done as applicable. **Results:** There was no significant difference of glycosylated hemoglobin level between control and study groups. But there was positive correlation within each group (r=0.255, 0.37 and 0.39 in control, overweight and obese respectively). **Conclusions:** The observed positive correlation between BMI and glycosylated hemoglobin emphasizes the maintenance of normal BMI to prevent early onset of type 2 diabetes mellitus. Health education activities highlighting the danger of becoming overweight and obese should be undertaken.

Key words: Body mass index, Obesity, Glycosylated hemoglobin.

PP- 18

RELATIONSHIPS OF NERVE CONDUCTION PARAMETERS WITH THE THYROID HORMONES IN HYPOTHYROID PATIENTS

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Background: Impairment of nerve conduction may occur in hypothyroidism which usually develops insidiously over a long period of time due to irregular taking of drugs or lack of thyroid hormone replacement. **Objectives**: To evaluate the thyroid hormone status and the clinical and electrophysiological changes in hypothyroid patients in order to observe their relationships with nerve conduction changes. **Methods**: Thirty healthy euthyroid subjects with the age range from 20 to 50years of both sexes were as control and 15 hypothyroids with TSH with <60 MIU /L and the duration of 6 months to 5 years were as experimental. Serum TT3, TT4were measured by RIA and IRMA method. The distal latency (D L) and Nerve Conduction Velocities (NCV) for sensory and motor function were measured by a standard electrophysiological technique in median and ulnar nerve for upper limb and for lower limb, in sural nerve for sensory function and common peroneal nerve formotor function. Data were analyzed statistically by unpaired 't' test, Z test, Pearson's correlation coefficient test. **Results**: Both TT3, TT4 levels were significantly (P<0.001) lower in hypothyroids. Again, 60% hypothyroids and 10% euthyroids (P<.001) had abnormal NCV. The relationships of TSH with both the median and ulnar sensory and motor distal latencies, common peroneal motor and sural sensory distal latencies and ulnar sensory conduction velocity were positive. But these relationships were negative with the median and common peroneal motor nerve conduction velocities,

sural sensory conduction velocities. Only the relationships between median sensory distal latency and TSH was statistically significant (P <0.05). Again, a positive correlation of TT3 and TT4 with the median, and sural sensory and common peroneal motor conduction velocities, but negative correlation with median motor and sural sensory latencies were found. In addition, positive correlation between TT3 and ulnar sensory and between TT4 and Ulnar motor conduction velocities were observed. Again the relationships median and ulnar sensory latencies were negative with TT4 only. The value of coefficient between TT4 and sural distal latency and conduction velocities were statistically significant (P<0.05). **Conclusion:** Results of this study showed that the impairment of nerve conduction occurs in hypothyroidism.

Keywords: Nerve Conduction, Thyroid Hormones, Hypothyroid Patients

PP-19

STUDY ON SERUM FT_4 AND TSH LEVELS AND THEIR CORRELATIONS WITH THYROID PEROXIDASE ANTIBODY (TPO-AB) DURING FIRST TRIMESTER IN NORMAL PREGNANCY

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Background: Hyper functional state of thyroid gland may be present in normal pregnancy during 1st trimester. Presence of thyroid peroxidase antibody (TPO-Ab) can cause alteration of this hyperfunctional state and are responsible for abortion, preterm delivery, post partum thyroiditis, post partum depression and impaired child development etc. **Objective**: **Objective**: To observe the correlation of TPO-Ab with serum FT4 and TSH levels during first trimester in normal pregnancy. **Method:** This cross sectional study was carried out in the Department of Physiology, Sir Salimullah Medical College from 1st January to 31st December 2011. A total number of 120 subjects were taken in the study and divided into control and study groups. Control group (Group A) consisted of 60 healthy non pregnant women age ranged between 20 to 35 years. Study group (Group B) consisted of 60 normal pregnant women of same age range. Group B was further subdivided into group B_1 and group B_2according to the level of TPO-Ab. Group B_1 consisted of TPO-Ab positive pregnant women and group B_2 consisted of TPO-Ab negative pregnant women. Control group was selected from personal contacts and study group from Out Patient Department (OPD) of Obstetrics and Gynecology of SirSalimullahMedicalCollege and MitfordHospital. For assessment of thyroid function, serum free thyroxine (FT_4), thyroid stimulating hormone (TSH) and urinary iodine were estimated.Serum FT4, TSH were measured by Enzyme link immunosorbant (ELISA) method and urinary iodine concentration was done by Spectrophotometric method. Again, serum TPO-Ab of total study population and hCG of all the pregnant women were measured. Serum TPO-Ab by Microparticle Enzyme Immunoassay (MEIA) method and hCG was estimated by ELISA. Statistical analysis was done by SPSS version 17. **Results:** In this study, serum FT_4 and urinary iodine were significantly (P<0.001) higher and TSH level was significantly (P<0.001) lower in normal pregnant women during 1st trimester in comparison to those of non pregnant women. Again, 18% of pregnant women showed TPO-Ab positivity. However, serum FT_4 level was significantly (P<0.001) lower whereas, TSH level and urinary iodine concentration were significantly (p<0.001) higher in TPO-Ab positive pregnant women in comparison to those of TPO-Ab negative pregnant women. Serum FT_4 level was negatively (r=-0.633) but TSH (r=0.683) and urinary iodine concentration (r=0.520) were positively correlated with serum TPO-Ab in the pregnant women during 1st trimester and all these relationships were statistically significant (p<0.001).Moreover, a positive correlation (r=0.111) between serum FT_4 and hCG levels whereas, negative correlation (r=-0.214) between serum TSH and hCG levels were observed in normal pregnant women. Though, these relationships were not statistically significant. **Conclusion:** Dicreased hyper functional state of thyroid gland during 1st trimester can occur which may be due to presence of TPO-Ab. So, thyroid screening should be done routinely during pregnancy.

Key words: Free thyroxine (FT4), Thyroid stimulating hormone (TSH), Human chorionic gonadotropin (hCG), Thyroid peroxidase antibody (TPO-Ab), Urinary iodine, Pregnancy, Trimester.

PP-20

ASSESSMENT OF INSULIN RESISTANCE IN ADULT OBESE FEMALE

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Background: In obesity insulin resistance is a key feature which is the fundamental defect in the development of NIDDM, hypertension and cardiovascular diseases**. Objective:** To assess the insulin resistance in adult obese female. **Methods**: The present study was a cross sectional analytical study, conducted in the Department of Physiology, Dhaka Medical College, Dhaka from July 2012 to June 2013.Fifty obese female with age ranging from 20-40 years were selected from obesity clinic of BIRDEM , Dhaka and by personal contact from different areas of Dhaka city. Fifty age matched, healthy non obese female subject selected as control. Fasting serum insulin level was measured by ELISA. Serum glucose level was measured by glucose oxidase method. The insulin resistance was calculated by HOMA-IR using HOMA-CIGMA software. For statistical analyses, unpaired Student's test and Pearson's correlation coefficient (r) test were performed as applicable using SPSS for Windows Verson-20. **Result**: Mean fasting serum insulin and HOMA-IR ($P<0.001$) were higher in the obese than that of non obese. Fasting serum insulin level and HOMA-IR showed significantly positive correlation with WHR. **Conclusion:** This study concludes that obese individual develops a state of insulin resistance.

Key word: Obesity, fasting serum insulin, insulin resistance, HOMA-IR.

PP-21

ASSESSMENT OF TSH LEVEL IN CHILDREN WITH AUTISM SPECTRUM DISORDERS

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Background: Thyroid hormone plays a key role in the development and physiological functioning of the central nervous system. They regulate the process of neurogenesis, myelination, dendritic proliferation and synapse formation. Different studies suggested an association between thyroid function and autism spectrum disorders. **Objective:** Our study was aimed to assess the TSH level in children with autism spectrum disorders. **Methods:** This cross sectional study was conducted in the Department of Physiology, Dhaka Medical College, Dhaka, during the period of July 2012 to June 2013. A total number of 120 subjects were selected with age ranging from 3 to 15yrs. Among them, 60 ASD children were included in the study group. They were selected from Protibondhi School for Autistic Shishu, Outer Circular Road, Moghbazar, Dhaka. Serum TSH level was estimated by Immuno Radio Metric Assay method at the Center for Nuclear Medicine and Ultrasound, Dhaka Medical College, Dhaka. **Result:** In this study we found that, the mean serum TSH level was significantly higher in the autistic children in comparison to that of the healthy group. **Conclusion:** Our study concludes that, increased serum TSH level may be one of the non-genetic risk factors associated with autism spectrum disorders.

PP-22

IMPACTS OF SERUM GLUCOSE LEVELS WITH WAIST CIRCUMFERENCE AND BODY MASS INDEX

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Background: Overweight and obesity are leading nutrition related disorder in world wide. In overweight and obesity accumulation of fat specially in abdomen causes insulin resistance promotes to develop type 2 diabetes mellitus. **Objectives:** To observe the relationship of serum glucose levels with waist circumference and body mass index. **Methods:** This cross sectional study was conducted from July 2013 to June 2014 in the Department of Physiology, Rangpur Medical College, Rangpur. A total number of 90 subjects were selected, among them 30 were apparently healthy subjects of normal weight (group A), 30 were apparently healthy overweight subjects (group B) and 30 were apparently healthy obese subjects (group C).The subjects were selected from Rangpur district. For statistical analysis one – way ANOVA (post Hoc test) and Pearson's Correlation Coefficient 'r' test were performed by computer based software SPSS- 17.0 version for windows. **Results:** Mean serum fasting glucosel, serum glucose 2 hours after ingestion of 75 gm glucose and blood Hb A_{1c} levels are significantly higher ($P<0.05$) in overweight and ($P<0.001$) in obese subjects than those of control subjects. In Pearson's Correlation Coefficient 'r" test serum fasting serum glucose, serum glucose level 2 hours after ingestion of 75 gm glucose are positively correlated with waist circumference and body mass index in overweight and obese subjects. Blood Hb A_{1c} is positively correlated with serum glucose levels in overweight and obese subjects. **Conclusion:** This study concluded that increased serum glucose levels in overweight and obese subjects which may be due to disturbance in carbohydrate metabolism and development of insulin resistance.

Acknowledge: Glucose, Waist Circumference, Body Mass Index

PP-23

EFFECTS OF α - TOCOPHEROL ON NOCICEPTION AND INFLAMMATION IN LONG EVANS RATS

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Background: One of the well known naturally occurring lipid soluble vitamins is vitamin E. -tocopherol (T) is the most active biological form of it which acts as an anti-oxidant, protects human body against oxidative stress. It also performs various functions such as prevention of infertility, enzyme regulation, CD36 gene expression, prevention of ataxia, neural development, enhance cell mediated immunity. **Objective:** To observe antinociceptive and antiinflammtory effects of -tocopherol on nociception and inflammation in Long Evans rats **Methods**: For this study, 12 male Long Evans rats, weighing 180 to 200 gm were collected and were supplemented with T 200 mg/kg/day (n=6) and equal volume of normal saline (n=6) intramuscularly for 45 consecutive days. To evaluate the vitamin's effect on nociceptive pain, tail immersion test (thermal nociception) and early phase (0-5 mins) of formalin test (chemical nocieption) were done. As well as the interphase (6-15 mins) of formalin test to assess vitamins effect on central analgesic activity and for inflammatory pain the late phase (16-60 mins) of this test were completed. Moreover to evaluate the anti-inflammatory role of T,

formalin induced hind paw edema was measured. **Results:** After 45 days of supplementation, all the study variables were lowered in the experimental rats than those of their corresponding controls. Statistical analysis was done by Independent sample t test and p 0.05 was considered as significant and the decrement was statistically significant (p 0.001). **Conclusion**:From this study it may be concluded that, chronic T supplementation has significant antinociceptive as well as anti-inflammatory effects.

Key Words: -Tocopherol, Nociception, Inflammation

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PATTERN-REVERSAL VISUAL EVOKED POTENTIAL OF SEVEN TO ELEVEN YEARS CHILDREN

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Background: Standardization of recording procedure ensures similar visual evoked potential (VEP) waveforms across laboratories. However, it is emphasized that each laboratory must establish its own normative values. Adult normative data cannot be generalized to pediatric populations. We have been depending on the western reference value for the interpretation of the VEP results. **Objectives**: We aimed to document the preliminary normative data of Visual Evoked Potential (VEP) of seven to 11 years children and to study the effect of age on it. **Methods**: Pattern reversal VEP was recorded from consenting healthy children aged 7 to 11 years (n=57). Active electrode was placed on midline-occipital (MO), right-occipital (RO) and left-occipital (LO) as per international 10-20 system. The descriptive data of VEP variables are expressed in mean ± SD, median (interquartile range) and mode. The Pearson correlation, ANOVA and post-hoc Bonferrani was used. Ethical clearance was taken from the Institute Ethical Review Board prior to the study. **Results:** The mean age was 8.96±1.31 years. The mean, median (quartile range) and mode of VEP variables were: latency of VEP P100 of both eyes=111.58±10.24 ms; 110(103.5-120) ms and 120 ms; interocular VEP P100 difference= 0.73±6.29 ms; 0(-3-5.25) and zero ms; interocular amplitude ratio= 1.01±0.2; 1(0.89-1.12) and 1. The age and VEP variables showed a tendency of positive correlation. The latency of VEP P100 of 11 years was significantly more than 9 years (119.44±9.21 vs. 106.64±9.84, P=0.05). The amplitude of right eye of 9 years was significantly more than 8 years (19.14±6.61 vs. 12.91±4.78, P= 0.033). **Conclusion:** The preliminary normative data of children (6-11years) was documented. We found that as age increases, the latency and amplitude of VEP P100 increases. This may be due to the effect of gender on VEP.

Key words: Children, Visual evoked potential.

PP-25

AUTONOMIC DYSFUNCTION IN CURRENT REGULAR CIGARETTE SMOKERS

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Background: Cigarette smoking induced increased sympathetic activity has been recognized as a major independent risk factor for cardiac morbidity and mortality. **Objective:** To assess cardiac

autonomic nervous activity in current regular healthy male cigarette smoker. Methods: This cross sectional study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU) Dhaka from July 2011 to June 2012 on 120 apparently healthy male current regular cigarette smoker aged 20-55 years For comparison 70 apparently healthy male non smoker subjects were studied as control. Based on pack years, the smokers were divided into light, moderate and heavy. Cardiac autonomic function was assessed by power spectral analysis of HRV. HRV parameters were recorded by a 4 active channels of RMS Polyrite-D. Statistical analysis was done by ANOVA, independent sample t test.

Results: LF power, LF norm and LF/HF ratio were found significantly higher ($p<0.001$) in all groups of smokers compared to healthy control and in heavy smoker group compared to light and moderate group. Total power, HF power and HF norm were significantly lower in all smokers compared to control and also in heavy group when compared with light and moderate group. Correlation analysis showed negative correlations of total power and HF power with duration of smoking but it was statistically significant for LF power and LF/HF ratio in heavy group and only for LF power in moderate group.

Conclusion: The result of the study suggest impaired overall autonomic activity characterized by increased sympathetic activity with attenuated cardiac vagal modulation and shifting of sympathovagal balance towards strong sympathetic dominance occurred in regular cigarette smokers which is specially evident in heavy smokers. The cardiac autonomic changes also showed a significant dose response relationship with cumulative cigarette smoking exposure.

Key words: Light, moderate and heavy cigarette smoker, Cardiac autonomic nerve function, Heart rate variability.

PP-26

EFFECTS OF α–TOCOPHEROL AND ITS COMBINATION WITH DICLOFENAC ON PAIN AND INFLAMMATION IN RATS

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Background: -tocopherol is a naturally occurring lipid soluble anti-oxidant that protects our body from oxidative process. Effects of this vitamin on pain and inflammation were observed in several animal and human studies. But comparison of this effect with similar effects of drugs like Diclofenac (DS) as well as their combination has not yet been studied. **Objective:** To assess the effects of -tocopherol and its combination with diclofenac on pain and inflammation in rats. **Methods:** This prospective experimental study was conducted in the Department of Physiology, BSMMU, from 1st January to 31st December 2013. For this purpose 20 male Long Evans rats, weighing 180 to 250 grams were studied. On the basis of vitamin and drug administrations, they were divided into 4 groups (5 rats in each). Group A received normal saline, group B received diclofenac sodium (10mg/kg), group C received -tocopherol (500mg/kg) and group D received combination of diclofenac sodium (10mg/Kg) with -tocopherol (500mg/kg). All the groups received single dose and equal volume through intraperitoneal route. Just one hour after administrations, each rat was subjected to formalin test followed by formalin induced paw edema test. After the completion of experiments, the rats were sacrificed immediately to decrease their sufferings. **Results:** Supplementation of single loading dose of αT significantly lowered (P 0.05) the variables for nociceptive pain, inflammatory pain (P 0.05) and also lowered the variables for inflammation compared to control. In addition, combined administration of DS and αT significantly lowered almost all the variables for nociceptive pain (P 0.001), inflammatory pain (P 0.001) and inflammation than their individual one. **Conclusion:** From

this study it may be concluded that, single dose supplementation of T showed the analgesic as well as anti-inflammatory effects and the combined administration of -tocopherol and Diclofenac Sodium showed more effectiveness than their individual one.

Key words: Nocoception, analgesic, diclofenac, -tocopherol, formalin test, inflammation, paw edema.

PP-27

EFFECTS VITAMIN B_{12} SUPPLEMENTATION ON PAIN & INFLAMMATION IN LONG EVANS RATS

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Background: B vitamins combination is well known for relieving painful and inflammatory condition. But individual effects of vitamin B_{12} on nociceptive pain, inflammatory pain and inflammation are yet to be clearly demonstrated. **Objective:** To assess the effectiveness of vitamin B_{12} on reducing pain and inflammation, both after acute (single) and chronic (consecutive 7 days) supplementation. **Methods:** This prospective experimental study was conducted in the Department of Physiology, BSMMU, Shahbag, Dhaka from January 2011 to June 2012. For this purpose, 24 male Long Evans rats, weighing 200 to 250 grams were collected from the animal house of BIRDEM, Shahabag, Dhaka. According to duration of vitamin supplementation all the rats were grouped as acute (Group I, received single dose of supplementation) and chronic (Group II, received consecutive 7 days supplementation). In addition, two groups of rats received equal volume of normal saline as control (Group Ia and IIa). The dose of supplementation was 15 mg/kg of B_{12} which was injected through intraperitoneal route. To evaluate the effects on pain, tail immersion test for thermal nociceptive pain and formalin test for chemical nociceptive pain and inflammatory pain were done. In addition, to evaluate their effects on inflammation formalin induced hind paw oedema was also done. **Results:** B_{12} Supplementation lowered the variables for pain and inflammation, and the effects were significant in lowering the variables for inflammatory pain and inflammation. Chronic B_{12} supplementation was more effective than the acute one in lowering these variables. **Conclusion:** This study revealed that, B_{12} supplementation has both analgesic and anti-inflammatory effects and its chronic supplementation was more effective than the acute one.

Key words: Pain, Nociceptive pain, inflammatory pain, Inflammation, B_{12}.

PP-28

EFFECTS OF FOLIC ACID ON PAIN IN LONG EVANS RATS

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Background: Different B vitamins have long been used to relieve painful and inflammatory condition. Though Folic acid performs several important functions in the body that may influence pain, its effects on pain is yet to be clearly demonstrated. **Objective:** To assess the effectiveness of Folic acid on reducing pain, both after acute (single) and chronic (consecutive 7 days) supplementation. **Methods:** This prospective experimental study was conducted in the Department of Physiology, BSMMU, Shahbag, Dhaka from January 2011 to June 2012. For this purpose, 24 male Long Evans rats, weighing 200 to 250 grams were collected from the animal house of BIRDEM, Shahabag, Dhaka. According to duration of vitamin supplementation all the rats were grouped as acute (Group I,

received single dose of supplementation) and chronic (Group II, received consecutive 7 days supplementation). In addition, two groups of rats received equal volume of normal saline as control (Group Ia and IIa). The dose of supplementation was 5 mg/kg of Folic acid which was injected through intraperitoneal route. To evaluate the effects of Folic acid supplementation on thermal nociceptive pain, tail immersion test was done. In addition, formalin test was done to assess its effects on chemical nociceptive pain, central analgesic activity and inflammatory pain. **Results:** Folic acid supplementation lowered all the variables for nociceptive pain and central analgesic activity after both durations of supplementation. In addition, inflammatory pain variables were lowered by acute Folic acid supplementation but were higher after chronic supplementation.

Conclusion: This study revealed that, Folic acid supplementation has antinociceptive but pro-inflammatory effects.

Key words: Pain, Nociceptive pain, inflammatory pain, Inflammation, FA, Tail immersion test, Formalin test.

PP-29

EFFECTS OF α-TOCOPHEROL AND ITS COMBINATION WITH MORPHINE ON PAIN AND INFLAMMATION IN RATS

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Background: -tocopherol is a naturally occurring lipid soluble anti-oxidant that protects our body from oxidative process. Effects of this vitamin on pain and inflammation were observed in several animal and human studies. But comparison of this effect with similar effects of drugs like morphine as well as their combination has not yet been studied. **Objective:** To assess the effect of -tocopherol and its combination with morphine on pain and inflammation in rats. **Methods:** This prospective experimental study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University, Dhaka from 1st January 2013 to 31st December 2013. For this, 20 male Long Evans rats, weighing 180 to 250 grams were collected from Bangladesh Institute of Research and Rehabilitation for Diabetic Endocrine and Metabolic Disorders, Dhaka. On the basis of vitamin and drug administration, all rats were divided into 4 groups (n = 5/group; A = normal saline; B = morphine sulphate, 3 mg/kg; C = -tocopherol, 500 mg/kg; D = combination of -tocopherol and morphine sulphate). All the groups received single dose and equal volume through intraperitoneal route. Just one hour after administrations, each rat was subjected to formalin test followed by formalin induced paw edema test. After the completion of experiments, the rats were sacrificed immediately to decrease their sufferings. **Results:** Supplementation of single loading dose of -tocopherol significantly lowered (P 0.05) the variables for nociceptive pain, inflammatory pain (P 0.05) and also lowered the variables for inflammation compared to control. In addition, combined administration of DS and T significantly lowered almost all the variables for nociceptive pain (P 0.001), inflammatory pain (P 0.001) and inflammation than their individual one. **Conclusion:** From this study it may be concluded that, -tocopherol has both the analgesic as well as anti inflammatory effects and its combination with Morphine Sulphate is more effective than the individual administration of -tocopherol or Morphine Sulphate.

Key words: Nocoception, analgesic, morphine, -tocopherol, formalin test, inflammation, paw edema.

PP-30

ANTINOCICEPTIVE AND ANTI-INFLAMMATORY EFFECTS OF ESSENTIAL OIL OF NEPETA CRISPA WILLD. IN EXPERIMENTAL RAT MODELS

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Background: *Nepeta crispa Willd.* a plant of Lamiaceae family, is one of the most aromatic plants of south east Asia, specially in Iran. Beverages and infusion prepared from its aerial parts was traditionally used as sedative, relaxant, carminative and restorative tonic for nervous and respiratory disorders. **Objective:** This study was aimed to evaluate the antinociceptive and anti-inflammatory effects of essential oil of arial part of this plant. **Method:** For antinociception Tail-flick test (somatosensory pain) and Formalin test (chemical pain) pain-models and for anti- inflammation Formalin induced paw edema test was done on 27 male Wister rats weighing about 225±25 gm. Animals were treated intraperitoneally with normal saline for the control group (6-9 rats) and the essential oil at 30, 100 and 200 mg/kg for the three experimental groups (18 rats) respectively. **Results:** The oil produced significant dose dependently anti-nociception in both the pain models and potent anti-inflammation in paw edema model. Its effect on both the acute and chronic pain seems to be via central and peripheral mechanism of action. **Conclusion:** In conclusion, it may be suggested that the essential oil of *Nepeta crispa* may lessen both the early and late phases of nociception and may have effective role against inflammation, but the dose should be maintained precisely to obtain the intended effect. Also the exactly responsible component for these effects and their mechanism of action cannot be elucidated from this study. Further study is needed to explore the exact effect of this essential oil on antinociception and anti-inflammation.

Keywords: Nepeta crispa; antinociception; anti-inflammation; cineole; nepetalactone; rats

PP-31

RELATIONSHIP BETWEEN FEF_{25-75}, PEFR AND SVC WITH SERUM ESTROGEN AND PROGESTERONE LEVEL IN POSTMENOPAUSAL WOMEN

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Background: Deterioration of lung function is common in women after menopause, which may be related to estrogen and progesterone level. **Objective:** To observe FEF25-75, PEFR and SVC levels in apparently healthy postmenopausal women to find out their relationships with serum estrogen and progesterone. **Methods:** This study was carried out in the Department of Physiology in BSMMU, Dhaka from January to December 2007. 30 postmenopausal women aged 45 to 60 years and 30 premenopausal women aged 20 to 30 years during different phases of menstrual cycle were studied. FEF25-75, PEFR and SVC of all subjects were measured by a digital micro spirometer. Their estrogen and progesterone levels were estimated by Micro particle Enzyme Immunoassay (MEIA) method. Data were analyzed by Pearson's correlation coefficient test, one way ANOVA and unpaired 't' test. **Results:** The mean percentage of predicted values of FEF25-75 and PEFR were lower in

postmenopausal women compared to those of follicular and luteal phases of premenopausal women but it was not significant. Measured values of SVC was significantly ($p<.001$) lower in postmenopausal women compared to those of follicular and luteal phases of premenopausal women. Again Mean serum estrogen and progesterone levels were significantly ($p<.001$) lower in post menopausal women compared to those of follicular and luteal phases of premenopausal women. In post menopausal women, FEF25-75 was positively, PEFR and SVC were negatively correlated with progesterone level. PEFR and SVC showed positive correlation and FEF25-75 showed negative correlation with serum estrogen level. All these correlations were statistically non significant. **Conclusion:** The out come of this study shows FEF25-75, PER and SVC may be reduced in postmenopausal women which in turn may be associated with their low progesterone and estrogen levels.

Key words: Menopause, Lung function, Estrogen, Progesterone.

PP-32

STUDY ON SOME ASPECTS OF LUNG FUNCTION STATUS AND THEIR RELATIONSHIPS WITH SERUM ESTROGEN AND PROGESTERONE LEVELS IN POSTMENOPAUSAL WOMEN

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Background: Exaggeration of asthma and sharp increase in respiratory symptoms associated with worsening of lung function has been reported in women after menopause. The relationship between lung function and female sex hormones has been documented in postmenopausal women. **Objective:** This cross sectional study was carried out to find out the relationships of some aspects of lung function status with serum estrogen and progesterone levels in apparently healthy postmenopausal women. **Methods:** 60 (Sixty) apparently healthy female subjects were selected. Among them 30 were postmenopausal women with age range 45 to 60 years. 30 were premenopausal women with age range 20 to 30 years. Ages, BMI, waist hip ratio of all subjects were measured. To exclude the effect of age and BMI on lung function parameters the percentage of predicted values were compared between the groups. FVC, FEV_1, FEV_1/FVC%, and PEFR along with estrogen and progesterone levels were studied in postmenopausal women. Same parameters were also studied during 3 phases of menstrual cycle in premenopausal women. FVC, FEV_1, FEV_1/FVC% were measured by RMS med Spirometer. Estrogen and progesterone level were estimated by AxSym method. Correlation between lung function parameters and hormone levels were analyzed by Pearson's correlation coefficient test. **Results:** Though the mean percentage of predicted values of FVC, FEV_1 and PFER were lower in postmenopausal women compared to those luteal and follicular phases of premenopausal women but only FVC and FEV_1 were significantly lower in postmenopausal women. In post menopausal women, FVC, FEV_1 and showed positive and FEV_1/FVC% and PEFR showed negative correlation with Progesterone level. Again FVC, FEV1 and FEV_1/FVC% showed negative but PFER showed positive correlation with estrogen level. All these correlations are statistically non significant. **Conclusion:** The out come of this study shows lower FVC, FEV_1 in postmenopausal women compared to that of premenopausal women which are related to decreased estrogen and progesterone levels in postmenopausal women.

Key words: Menopause, Lung function, Estrogen, Progesterone.

PP-33

EFFECTS OF PHYSICAL EXERCISE AND HORMONE REPLACEMENT THERAPY (HRT) ON SERUM LIPID PROFILE IN POSTMENOPAUSAL WOMEN

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Background: Lipid profile abnormalities in postmenopausal women is a health hazard all over the world. Physical exercise and hormonal therapy may play a significant role in the management of dyslipidemia among postmenopausal women. **Objectives:** The study was carried out to observe the effects of physical exercise and hormone replacement therapy (HRT) on serum lipid profile in postmenopausal women. **Methods:** This cross-sectional study was carried out in the Department of Physiology, Sir Salimullah Medical College, Dhaka, from 1st January, 2009 to 31st December, 2009. A total number 90 postmenopausal women having age ranged from 50-60 years and 30 premenopausal apparently healthy subjects having age ranged from 20-30 years were included in the study. Among the 90 postmenopausal women, 30 were performing regular physical exercise, 30 were receiving hormone replacement therapy but not doing physical exercise and another 30 were sedentary postmenopausal women without receiving hormone therapy. Lipid profile such as TC, HDL-C, LDL-C, TG and fasting blood sugar of all the participants were estimated in Physiology laboratory, SSMC, Mitford, Dhaka. The statistical analysis was done by using appropriate test as applicable. **Result:** Mean serum TC, LDL-C and TG were significantly ($p<0.001$) higher and mean HDL-C was significantly ($p<0,001$) lower in sedentary postmenopausal women without HRT than those of premenopausal women, postmenopausal women with regular physical exercise and postmenopausal women with HRT. Again, mean TC, LDL-C and TG were lower and mean HDL-C was higher in postmenopausal women with regular physical exercise than those of postmenopausal women with HRT, but was statistically non-significant. In addition, all the menopausal symptoms were significantly ($p<0.001$) higher in sedentary postmenopausal women without HRT than those of postmenopausal women with exercise and postmenopausal women with HRT. Moreover, all the menopausal symptoms were comparatively lower in postmenopausal women with exercise than those of postmenopausal women with HRT, but was statistically non-significant. **Conclusion:** Physical exercise could be more effective than HRT in improving lipid profile status in postmenopausal women.

Keywords: Physical Exercise, Hormone Replacement Therapy (HRT), Lipid Profile, Postmenopausal Women

PP-34

PREDICTION OF PREECLAMPSIA DURING EARLY PREGNANCY IN PRIMIPARAS WITH SOLUBLE FMS-LIKE TYROSINE KINASE-1 AND PLACENTAL GROWTH FACTOR

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Background: Preeclampsia (PE) is a pregnancy-specific syndrome of elevated blood pressure and proteinuria after 20 weeks of gestation. When PE is diagnosed, it already has caused marked endothelial dysfunction leading to placental hypoxia and fetal growth compromise. Therefore, the

information that a primiparas with normal ongoing pregnancy is destined to develop PE during later part of pregnancy would be highly significant. We hypothesized that the pathophysiological process for the development of PE begins in the first trimester. **Objective:** To test the hypothesis that preeclampsia (PE) can be predicted in primiparas early by measuring serum levels of soluble fms-like tyrosine kinase-1 (sFlt-1) and placental growth factor (PlGF). **Methods:** All normotensive primiparas attending antenatal clinics two hospitals of Karachi without any known risk factor for PE were invited to participate in the study. They were divided into two groups based on the development of PE. Blood samples of the participants were collected at 8-15; 16-22; 23-28; 29-34 weeks of pregnancy and a postnatal sample and were analyzed for sFlt-1 and PlGF. **Results:** 611 (46.7%) out of 1307 recruited primiparas completed the study. Out of these, 39 (6.4%) women developed PE. Difference in the serum sFlt-1 was evident as early as up to 15 weeks of gestation. Higher levels of sFlt-1 were present in women who later developed PE. Relatively higher levels of PlGF were observed in non-PE women compared to PE women up to 22 weeks of gestation. However, after 23 weeks of pregnancy, PlGF levels increased in both Groups but less so in PE Group. ROC curve analysis showed that even in early pregnancy (< 15 weeks of gestation); sFlt-1 alone has the potential to predict PE with AUC, sensitivity and specificity of 0.81, 75.9 and 72.4, respectively. **Conclusions:** PE can be predicted in primiparas in early part of second trimester with serum sFlt-1 and in later part of second trimester with serum PlGF. **Key words**: Preeclampsia, fms-like tyrosine kinase-1, Placental growth factor

PP-35
STUDY ON SERUM LIPID PROFILE STATUS AND BONE MINERAL DENSITY IN SURGICAL POSTMENOPAUSAL WOMEN

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Background: Dyslipidaemia and osteoporosis in both surgical and natural menopausal women are common health hazards all over the world. And the surgical menopausal women may have the greater chance of these disorders than those of natural menopausal women. **Objective:** To observe lipid profile level and bone mineral density in surgical menopausal women in Bangladesh. **Methods:** This Cross sectional study was carried out in the Department of Physiology, Sir Salimullah Medical College, Dhaka from 1st January 2010 to 31st December 2010. A total number of 90 female subjects were included in this study. Among them 30 surgical menopausal women age ranged from 45-55 years were included in the study group (Group C). Again, 30 natural menopausal women age ranged from 50-60 years were studied as control group (Group B). And 30 premenopausal women age ranged from 30-35 years were also included in this study as baseline control (Group A) for comparison. All the menopausal women were selected from Out Patient Department (OPD) of Gynaecology and Obstetrics of Sir Salimullah Medical College and Mitford Hospital. Premenopausal women were selected by personal contact. Serum lipid profile of all participants were estimated by enzymatic method. Estimation of serum estrogen level by MEIA method and measurement of bone mineral density by Dual energy X-ray absorptiometry of both natural and surgical menopausal women were done. The statistical analysis was done by using appropriate method as applicable. **Results:** In this study, mean serum triglyceride (TG) was significantly ($p<0.05$) higher and serum high density lipoprotein cholesterol (HDL-C) was significantly ($p<0.001$) lower in surgical menopausal women than those of natural menopausal women. Whereas, both spinal and femoral neck bone mineral density and T-score were significantly ($p<0.001$) lower in surgical menopausal women than those of natural menopausal women. Again, bone mineral density is positively correlated with serum estrogen level in both surgical and natural menopausal women. **Conclusion:** The present study revealed that surgical menopausal women have greater chance of dyslipidaemia and osteoporosis than those of natural menopausal women.

Key words: Menopause, Bone Mineral Density, Dyslipidaemia, Osteoporosis.

PP-36

BIOLOGICAL AND CHEMICAL STANDARDIZATION OF *COCCINIA INDICA* FRUIT

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Background: Though different parts of *Coccinia indica* (Cucurbitaceae) have been widely used in the traditional treatment of diabetes mellitus, but till date there are inconclusive data to support the claim. In that regards, we tried to focus on the chemical identity of the fruit and also correlated with its biological actions, especially its anti-hyperglycemic properties for the validation and the acceptance of the plant in the greater community. **Objective:** To observe the biological and chemical standardization of *Coccinia indica* Fruit **Methods:** The fruit of *Coccinia indica* has been standardized by different solvents, chromatographic techniques, and spectrometric analysis for its chemical characterization. Further, the chemically standardized powdered extract has been studied for antioxidant properties using *in vitro* methods. Finally, the extract was examined in detailed for its anti-hyperglycemic properties and diabetic complications in Streptozotocin induced type 2 model in Wistar rats. In brief, the animals were divided into groups and STZ was induced 60 mg/kg, iv. After hyperglycemic selection (fasting blood glucose concentration 250-350 mg/dl) the test drug was given orally at the dose of 100 mg/kg, 200 mg/kg and 400 mg/kg orally for 14 days. Routine hematological, biochemical and histological parameters were studied. The results were statistically analyzed.

Results: The known biologically active compounds have been identified and estimated. The antioxidant properties have been confirmed and there IC_{50} value determined. The anti-hyperglycemic activity of the standardized extract has also been conclusively observed.

Conclusions: The results of the present study correlated between the compounds present in the fruit of *Coccinia indica* with its antioxidant and anti-hyperglycemic properties.

Key wards: *Coccinia indica,* diabetes mellitus, antioxidant, Streptozotocin, Wistar rats

PP-37

STUDY ON SERUM LIPID PROFILE, MAGNESIUM, CALCIUM AND IRON IN AUTISTIC SPECTRUM DISORDER (ASD)

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Background: Alteration of lipid profile, hypomagnesaemia, hypocalcaemia and iron deficiency has been found to be associated with ASD. **Objective:** To measure the serum lipid profile, magnesium, calcium and iron in ASD children in order to find out their association with ASD. **Method:** This analytical type of cross sectional study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka from January- December 2014. For this study,100 male children aged 3-8 years were randomly selected, among which 50 were apparently healthy (control group) and 50 were diagnosed with ASD (study group). The study group was selected from the Parents' Foram (DOHS, Dhaka) for ASD children and the control group was selected from some regular schools. Fasting serum lipid profile (total cholesterol, triglyceride, HDL and LDL), magnesium, calcium and iron were estimated in all children by standard laboratory methods. Independent sample 't' test and proportion (Z) test were used for statistical analysis. *p* value 0.05 was accepted as significant. **Result:** The mean triglyceride level was significantly higher

whereas the mean HDL level was significantly lower in cases as compared to controls. There were no significant differences in total cholesterol and LDL. The mean serum magnesium, calcium and iron were significantly lower in cases as compared to controls. Again, proportion (Z) test analysis indicated that ASD was significantly associated with increased plasma TG (Z=4.2; p 0.001), lowered HDL (Z=5.54; p 0.001), hypomagnesaemia (Z=6.32; p 0.001), hypocalcaemia (Z=9.64; p 0.001) and iron deficiency (Z=3.43; p 0.01). **Conclusion:** From the results, it can be concluded that there is presence of dyslipidemia, in boys with ASD. The result also suggest a possibility that dyslipidemia might be a marker of association between lipid metabolism and ASD. They also indicate association of hypomagnesaemia, hypocalcaemia and iron deficiency with ASD.

Key wards: Autistic spectrum disorder, ASD, dyslipidemia, metabolic disorder, hypomagnesaemia, hypocalcaemia and iron deficiency.

PP-38

THE EFFECT OF RAMADAN FASTING ON SOME ASPECTS OF METABOLISM IN HEALTHY MALE

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Background: During Ramadan fasting muslims abstain from food, drink, smoking each day from dawn to sunset. Frequency and quantity of having food and daily physical activities are changed during Ramadan fasting. Therefore, it has some anthropometric, metabolic and physiological effects on the healthy adult male subjects. **Objective:** To observe the effects of Ramadan fasting on some metabolic changes in healthy adult male. **Methods:** This observational study was carried out in the Department of Physiology, Sir Salimullah Medical College (SSMC), Dhaka between January to December 2013. A total number of sixty (60) healthy adult male subjects age ranged 24 to 28 years were selected in this study. They were selected on the basis of inclusion and exclusion criteria. All the subjects were the intern doctors of Sir Salimullah Medical College and Mitford Hospital, Dhaka. They were studied for two times; 1-3 days before Ramadan fasting (Phase-A) and 25th -27th days of Ramadan fasting (Phase-B) accordingly. To assess their glycemic control fasting blood glucose level was measured by glucose oxidase method. Again, serum TC, LDL-C and HDL-C levels of all the subjects were estimated by enzyme method. Moreover, serum cortisol, free thyroxin (FT4) levels were measured by enzyme linked immunosorbant assay (ELISA) method and serum insulin level was measured by using AxSYM system. The statistical analysis was done by using paired sample 't' test as applicable. **Results:** In this study, the mean body weight, BMI, serum fasting blood glucose, TC, LDL-C, cortisol and FT4 levels were significantly ($p<0.001$) but serum insulin level was non significantly decreased. Again, HDL-C level was significantly ($p<0.001$) increased after 25th- 27th days of Ramadan fasting than those of 1-3 days before Ramadan fasting. **Conclusion:** The results of the present study revealed that Ramadan fasting has got some beneficial effects on metabolic changes in healthy adult male.

Key words: Ramadan fasting, fasting blood glucose, lipid profile, serum cortisol, FT4, insulin.

We mourned

Professor M A Hai

With great respect and profound grief, we deeply mourn the sad demise of Professor M A Hai, an eminent Physiologist of the country. He was born on April 10, 1937 in an eminent family in Faridpur. Professor MA Hai had an illustrious professional carrier since 1961. Prof. Hai has to his credit in brilliant academic and an illustrious professional carrier and distinguished himself as the most eminent teacher of Bangladesh. He Gratuated from Dhaka Medical College , Dhaka University in 1961.

Prof. Hai joined the Department of Physiology, Chittagong Medical College as a lecturer in 1961. He obtained MSc & PhD in physiology for his research work on the Role of Urea in Creating Medullary Hyperosmolarity from the Victoria University of Manchester, UK. in 1967&1968. It was published in J. Physiol ,London 1968 and then in Samson Wright`s Applied Physiology book. In addition he was a very good administrator. He acted as Dean, Faculty of Undergraduate Medicine, Rajshahi University and Dean, Faculty of Postgraduate Medicine, Dhaka University, Dhaka. For a long time he was the Chairman, Department of Physiology, IPGM&R (Institute of PostGraduate Medicine & Research, now BSMMU). He retired from Govt. service from this post. He was not a man to sit idle. He continued to serve several medical colleges specially National Medical College, Dhaka, Bajitpur Medical college, Kishoreganj, Armed Forces Medical College, Dhaka and provide his expertise till he breathed his last. He was a founder member of South Asian Association of Physiologists (SAAP), founder Secretory General of Bangladesh Society of Physiologists(BSP) and founder member of Bangladesh Physiolgical and Pharmacological Society(BPPS). He is an inspiring icon of vision, wisdom and professionalism. Prof. Hai has been a virtuous mentor and a father figure to all members of BSP family. This greatman breathed his last on 5th February 2014.

We mourned

Professor Atia Banu

Professor Atia Banu was born on 30th Dec, 1944 in Dhaka. She graduated MBBS in 1967 from Dhaka Medical College. She qualified her M.Phil in Physiology from the Institute of post graduate Medicine and Research Dhaka in 1971. Professor Atia Banu served as demonstrator of Physiology at Dhaka Medical College from 1968 - 1973, as Assisant Professor from 1973 to 1979 in Dhaka and Sir salimullah medical college, as Associate Professor from 1979 to 1989 in Dhaka and Sir salimullah medical college, as Professor from 1989 to 2002 in Sher-e-Bangla medical college and Dhaka and Sir salimullah medical college . She retired from the post of Head of the Department of Physiology Dhaka medical college. She died on 11th February 2013.

Prof Atia Banu was a beloved teacher of students of Physiology and her colleagues as well. She had an admirable personality. She was well known for her modesty, sincerity and also devotion to the promotion of Physiology. She was a caring teacher and considerate examiner. Her sweet talks, tolerant behavior and very simple but highly effective mode of teaching will keep her ever remembering. She set an example of dedication, selflessness, and dutifulness. We deeply regret the absence of our beloved teacher Prof atia Banu. We pray for the solace of the grieved family and pray for the eternal peace of the soul of our departing teacher Prof Atia Banu.

We mourned

Professor M A Taher

Professor M A Taher expired on 23 October 2014 at 59, when he was officiating as Professor and Head of Physiology of Southern Medical College in Chittagong. He was a CMCian of 18 batch. After a rigorous process of acquiring knowledge, skill and attitude in the discipline of Physiology he was successful in obtaining MSc (Physiology) from University of Glasgow that was followed by conferring of PhD by University of Chittagong. From the plain of lecturership in public medical college he attained the pinnacle in his subject. Moreover in many places he was an organizer of the department of physiology, a subject so essential and advancing globally but so neglected in our country. Through his demise the subject lost another member from its very small diminishing pool and the nation a teacher and an organizer.

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Acknowledgement

Professor Quazi Deen Mohammad
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- **Postmenopausal women are at risk of osteoporotic fracture.**

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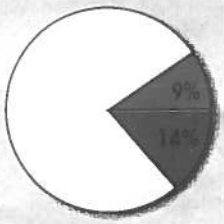

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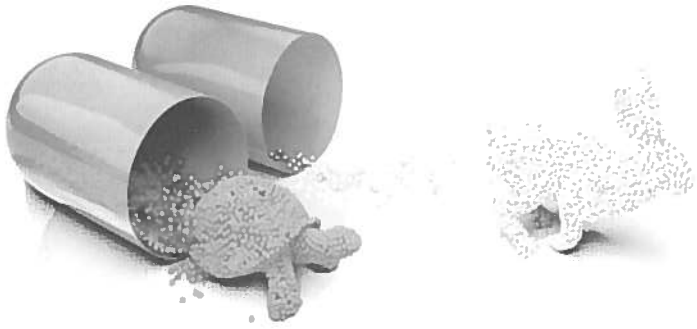

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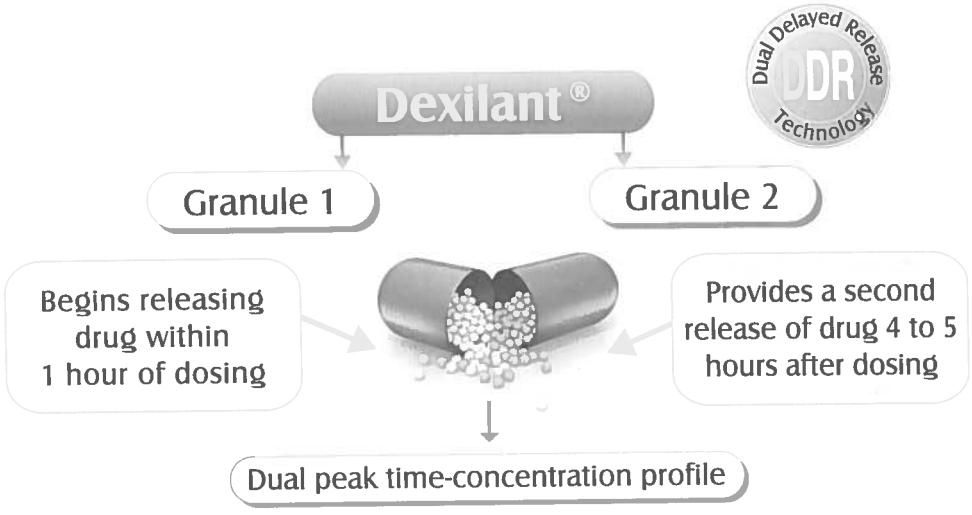

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গণ বিশ্ববিদ্যালয়ের যে কোন কোর্সে অধ্যায়ন করলে দেশে এবং বিদেশে আপনার সন্তানের উজ্জ্বল ভবিষ্যৎ নিশ্চিত হবে।

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গণ বিশ্ববিদ্যালয়ে আন্ডার গ্র্যাজুয়েট কোর্স সমূহ :

এমবিবিএস, বিডিএস, মেডিকেল ফিজিক্স এন্ড বায়োমেডিকেল ইঞ্জিনিয়ারিং, মাইক্রোবায়োলজী, ফিজিওথেরাপী, ফার্মেসী, ফলিত গণিত, ইংরেজি ভাষা ও সাহিত্য, কম্পিউটার সায়েন্স এন্ড ইঞ্জিনিয়ারিং, বাংলা ভাষা সাহিত্য ও সংস্কৃতি, আইন, সমাজ বিজ্ঞান ও সমাজকর্ম, রাজনীতি ও প্রশাসন, ব্যবসায় প্রশাসন, ফলিত পরিসংখ্যান, অর্থনীতি এবং পদার্থ ও রসায়ন বিজ্ঞান।

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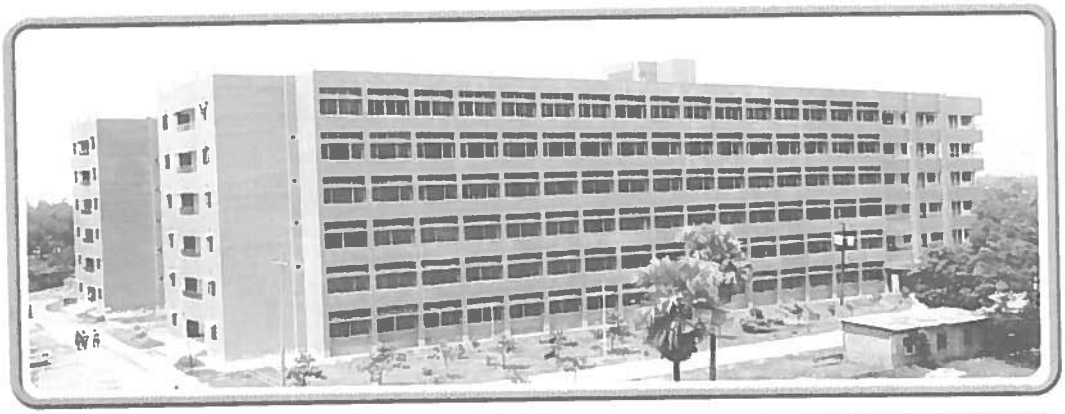

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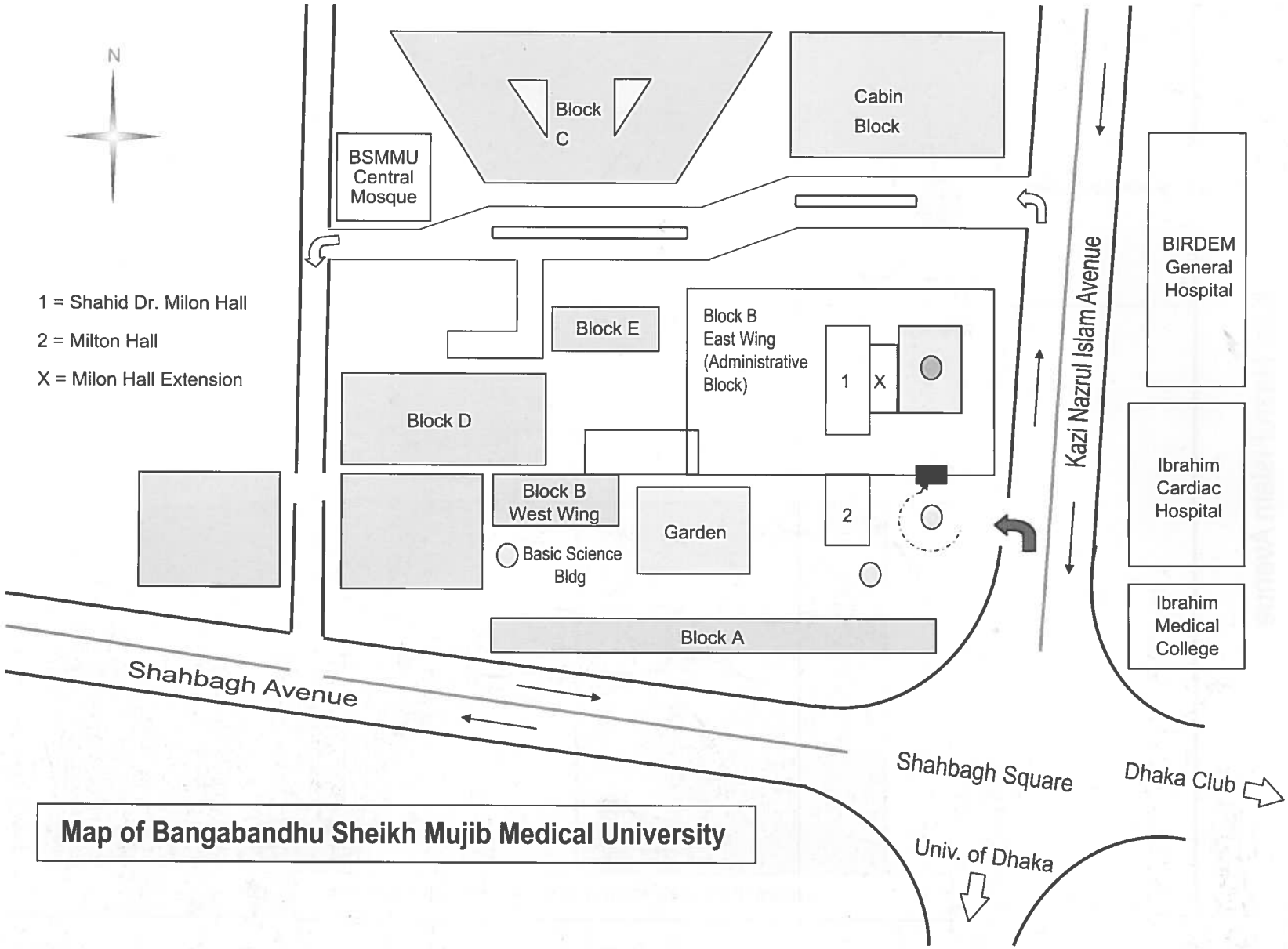
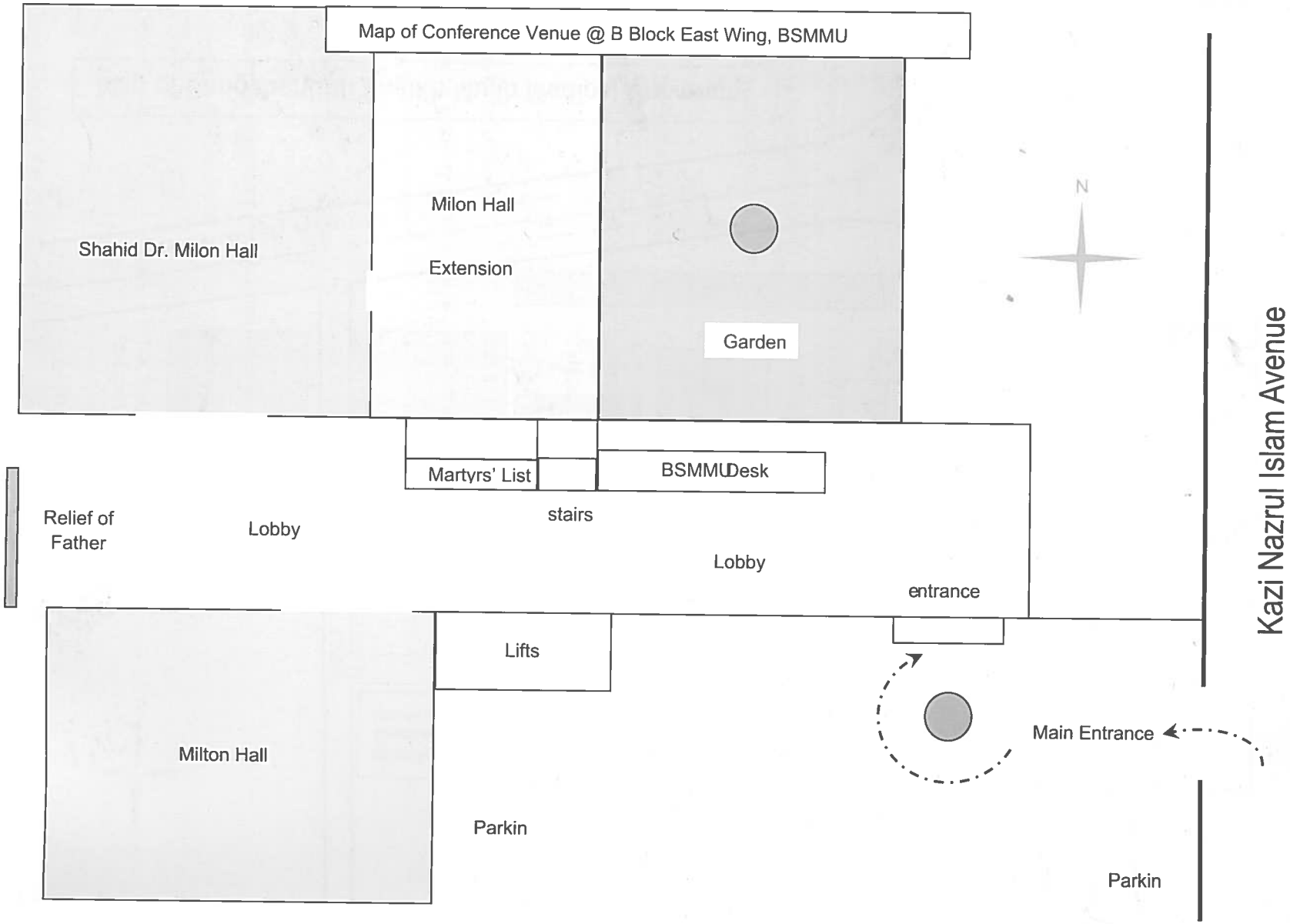


Map of Bangabandhu Sheikh Mujib Medical University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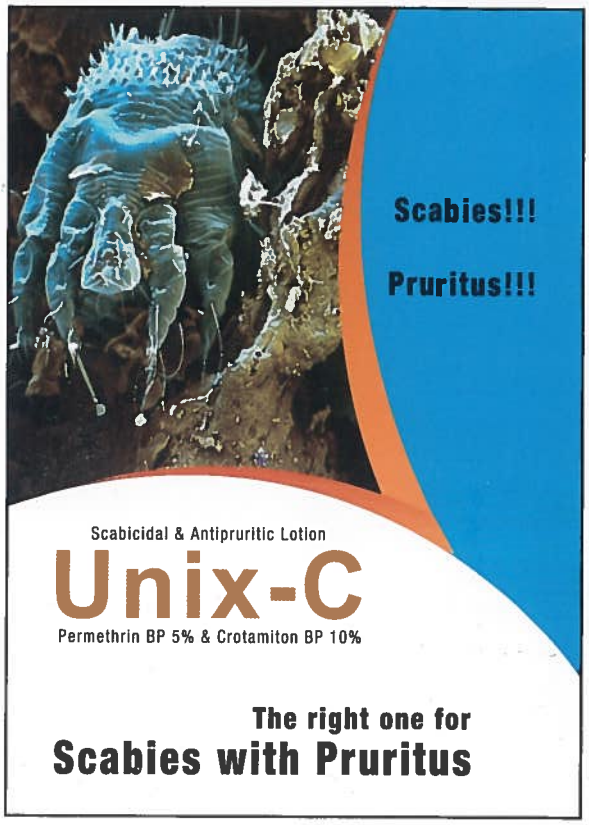

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