P-BN-01

PREVALENCE OF ANEMIA IN ADOLESCENT GIRLS

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Background: Anaemia is defined as the condition in which there is either less than the normal number of (<4.2 millions/µl) red blood cells or less than the normal quantity of (<12 g/ml) haemoglobin in the blood. Anaemia is a common malady in developing world with wide spread prevalence especially among adolescent girls. Adolescence years are the formative years when major physiological changes occur in their bodies and consequently in their behaviour as well. Malnourishment plays a major role not only in economically deprived classes but also in affluent classes where adoption dietary fads to remain slim play a havoc with health. Increasing number of evidence indicate the prevalence of anaemia in connection with requirement of nutrition in various age groups in both male and females. However, the prevalence of anaemia in female adolescent age group in association with diet is still an understudied subject. **Objective:** The objective of this study was to find out the prevalence of anaemia in adolescent girls and to see their dietary pattern. **Methods:** A total 150 adolescent girls were included in this cross-sectional study. Seventy-five (75) girls were aged 17–19 years and 75 girls ranged 14–16 years. Haemoglobin was measured using Sahli's method. RBC count was done using haemocytometer. The shape and colour of red blood cells was checked using electron microscope. **Results:** Out of 75 girls (17–19 years), 60% were anaemic, out of these 55.55% had mild anaemia (<12 mg/dl), 22.22% had moderate anaemia (8–10 gm/dl), and an equal percentage (22.22%) of had severe anaemic (<8 gm/dl). In second category 75 females were included aged between 14–16 years. Prevalence of anaemia was the highest (93.33%) in this age group. Out of these, 57.14% were found to have mild anaemia, 14.28% had moderate anaemia and 28.57% had severe anaemia. We also found an association of severe anaemia with decreased BMI; all of those suffering from severe anaemia had BMI (<17). However, we found the association of anaemia with dietary patterns; all these females were unaware about taking iron containing diet. **Conclusion:** We have found the highest percentage of anaemia in girls, who were not poor but they did not have knowledge about taking the nutritive and iron containing diet. This data will put a new insight into the awareness of iron containing diet in adolescent females.

Keywords: Anaemia, adolescent, iron deficiency

P-BN-02

EFFECTS OF MALNUTRITION ON PREGNANT WOMEN AND THEIR CHILDREN

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Background: Million children die every year due to malnutrition. The big percentage of these children die due to their mothers are not nourished properly .Miscarriages, still births, IUDS are the most common phenomenon of malnutrition. Half population of Pakistan live below poverty line .Recent flood in Pakistan and especially in Sindh has worst the situation. However, the effect of this disaster in relation with malnourished of pregnant females is understudied subject. **Objective:** To determine the effect of malnutrition on mother and her child in Pakistan especially in the flood affected areas of Sindh. **Methods:** The data were collected from the flood affected areas of Sindh. This was a cross-sectional study of total 48 pregnant females were included in this study, their age limit was 18–35 and social economical condition was very poor. Malnutrition is measured by Mid Upper Arm Circumference; Haemoglobin was measured with Sahli's method. **Results:** In order to determine if malnutrition could cause anaemia, we carried out haemoglobin test of selected females. All the selected pregnant females were anaemic, and had less than required haemoglobin level. Malnutrition not only caused these severe effects on pregnant female but this malnutrition also affected their children. Out of 218 children 32 (14.6%) could not survive, and 8 (3.6%) children died of miscarriage, and 10 (4.5%) were still births, and small percentages (0.9%) of IUDs were also found. All the females were malnourished, since their arm circumference was less then 21cm which is an indicator of malnourishment. **Conclusion:** This study gives an insight into the level of malnutrition in pregnant women. The number of children dying due to malnutrition is higher. This will help in making public health policy.

Keywords: malnutrition, anaemia, arm circumference

O-BN-03

PREVALENCE OF THINNESS IN SCHOOL AGED CHILDREN OF JAMSHORO DISTRICT

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Background: Thinness is the problem around the world 45% Cases have been reported from around the world. This figure is much higher in developing countries. Recent study in India show 65% prevalence of thinness .The causes of thinness are attributed to socio economic factors, and dietary pattern. Pakistan is one of the countries, which contains millions of malnourished children. However, what is the prevalence and what factors are associated especially in children aged between 5–10 years is not clear. **Methods:** A total of 350 students (boys and Girls) aged 5–10 years were included in this cross-sectional study. Height and weight were measured and the body mass index (BMI) was computed. The new international BMI-based classification cut-off points proposed by Cole et al were utilized to identify thinness. **Results:** The overall (age-combined) mean BMI among boys and girls were 13.9±1.4 kg/m^2 and 13.8±1.2 kg/m^2, respectively. In general, mean BMI increased with age in both sexes. There was no significant sex difference in mean BMI. The overall (age-combined) prevalence of thinness was 62.9% and 61.6% in boys and girls, respectively. **Conclusions:** The present study clearly indicated that the nutritional situation of these children was unsatisfactory.
Keywords: Body mass index, under nutrition, thinness, IOTF cut off points, Jamshoro

O-BN-04

DETERMINATION OF LEAD IN THE POULTRY FEED, PHYSIOLOGICAL FLUIDS AND TISSUES OF CHICKENS OF A POULTRY FARM NEAR BATTERY RECYCLING SMELTER

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Lead is a toxic metal having its presence in soil water and air. Despite the claims of its elimination from petrol and imposition of regulatory measures it keeps being released in to the environment. Uncontrolled battery recycling is a common activity in the outskirts of the major cities of Pakistan. The present study was undertaken to determine the levels of lead in the birds of poultry form and their feed situated near battery recycling smelter. The determinations were done using Atomic absorption spectrometry and biochemical tests for lead in feed, blood, kidney, bones, liver and pectoral muscle. The results showed that feed contained lead above 8 μg/g, blood (5.2 μg/dl), bones 3–7 μg/g kidney, liver and pectoral muscles in the range 2.4–10 μg/g. All the results were statistically correlated using appropriate controls. The elevated blood lead levels caused significant decrease in the activity of delta aminolevulinate dehydratase enzyme manifesting clinical symptoms of lead poisoning *viz* anaemia, weight loss and muscle atrophy. It is concluded from the study that presence of lead in chicken in high quantities is hazardous to human health. Moreover agro farming in respect of poultry is very sensitive task deserving multiple considerations including lead and other heavy metal pollution.
Keywords: lead poisoning, chicken feed, battery recycling, blood lead, tissue lead

O-BN-05

IRON DEFICIENCY ANAEMIA IN RURAL POPULATION OF SINDH

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Background: Anaemia is a global public health problem affecting both developing and developed countries with major consequences for human health as well as socio-economic development. Globally, the most significant contributor to the onset of anaemia is iron deficiency so that iron deficiency anaemia (IDA) and anaemia are often used synonymously, and the prevalence of anaemia has often been used as a proxy for iron deficiency anaemia. **Methods**: A sample of 357 patients was studied at the Department of Medicine, Isra University. A detailed clinical

history including diet, socioeconomic status and bleeding were enquired, followed by general physical and systemic examination. The complete blood counts were performed on Sysmex KX 21 haematology analyzer. Serum ferritin and TIBC were performed by Kit method. Serum ferritin level of <18 μg/dl was taken as diagnostic of iron deficiency anaemia. The data was analysed on SPSS version 16.0 for Windows (Chicago, IL, USA), using appropriate statistical tests. **Results**: Out of 357 subjects, 139 were male and 218 were female of age 38±14.12 years. Anaemia was noted in 69.74% (n=248). The haemoglobin and haematocrit levels as low as 2 g/dl and <20% were seen. Serum ferritin levels of <18 μg/dl were found in 51.2% (n=183) of patients with elevated TIBC. Poikilocytes, anisocytes, and target cells were observed on blood films. A history of bleeding per rectum and menorrhagia were noted in 3.08% (n=11) and 5.88% (n=21) of male and female respectively. Malnourishment and insufficient dietary intakes were prevalent because of low income. **Conclusion**: Iron deficiency anaemia is prevalent in our rural population. Measures should be taken to overcome this problem.
Keywords: Anaemia, iron deficiency anaemia, ferritin, malnutrition

P-BN-06

EATING DISORDERS IN THE AFFLUENT ADOLESCENT GIRLS

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Objectives: Eating disorders (EDs) seem to be an increasing problem in the urban area of Pakistan. Increasing evidence suggest EDs may result into number of complications related with BMI, and GIT problems. The main purpose of this study is to evaluate the prevalence of EDs in the affluent adolescent females. **Methods:** Cross sectional study was carried out in the higher secondary schools of Hyderabad district. The study sample consisted of 209 adolescent female students, 14 to 16 years of age. Students were included from private schools, and all these students belonged to affluent families. The BMI was measured using standard measurement techniques. Students were interviewed by a structured questionnaire to elicit the details of EDs they practiced in the last one year. **Results:** Of these total 209 students, prevalence of Anorexia Nervosa was 20.09% and Bulimia Nervosa (BN) was found to be 2.87%. Eating Disorders Not Otherwise Specified (EDNOS) was found to be the most prevalent 25.83% eating disorders in adolescent female students. No case of Binge Eating Disorders (BED) was found in adolescent females studied. **Conclusion:** This study puts a new insight into the prevalence of EDs in adolescent girls. The data supports the previous data published, however, EDNOS was found to be higher than previously available data.
Keywords: Eating Disorders, AN, BN, EDNOS

P-BN-07

ASSOCIATION OF UPPER ARM CIRCUMFERENCE WITH CARDIOVASCULAR DISEASE

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Background: Millions peoples die every year due to Cardiovascular diseases (CVDs). Pakistan is one of countries with highest mortality rate due to CVDs. There are number of risk factors for CVDs. Obesity is regarded as the one of major risk factor in development of CVDs. BMI has been the major tool in measuring obesity however, recent studies indicate that thigh, leg and waist circumference as the major risk factors of CVDs. Whether this is only thigh or leg circumference which causes CVD or is there any association between upper arm circumference and its role in developing CVDs is still not clear. **Objectives:** To find out any association between upper arm circumference, BMI and CVDs. **Methods:** This is a comparative study. Total (n=84) individuals were selected for this study. Out of 84 individuals, 42 were case (patients) suffering from cardiovascular disease. 42 normal healthy individuals were selected as control. The range of the age was 40 to 60 years. The mean age of the patients was 54 years. The mean age of control group is 49.35 years. Anthropometric measurement was carried out for measuring BMI. **Results:** The data we collected indicate that low circumference of the upper arm is the major risk factor for CVDs. In the case control study; we found the significant difference in the upper arm circumference of patients and normal healthy individuals. The upper arm circumference of the patients were significantly (p=0.03) lower than normal individuals.

The *p*-value was taken from z test (z= -1.86). **Conclusion:** This is novel study, which gives us new insight into the association of upper arm circumference and CVDs.

Keywords: Arm circumference, Cardiovascular Disease, BMI

P-BN-08

FREQUENCY OF ABO AND Rh BLOOD GROUPS AMONG STUDENTS OF PESHAWAR MEDICAL COLLEGE, PESHAWAR

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Background: ABO and Rhesus (Rh) blood group systems are the most widely and commonly considered blood group systems due to the fact that the antigens of these systems are very much strong as compared to the antigens of various other blood group systems such as Aurberger's System, Diego's System, Lewis System, MNSs and Xg Blood Group System. **Objectives:** 1. To analyse the frequency of ABO and Rh Blood Groups among students of Peshawar Medical College, and to compare the frequency of blood groups of two different systems among the male and female subjects. **Methods:** A descriptive study was performed in Peshawar Medical College. Blood groups of total 241 medical students (including 120 male and 121 female students) were obtained from the record file Blood Wing, SWS. Analysis of the data was made separately for male and female students of each professional. The finalized data obtained was then entered in MS Excel sheets for further analysis. **Results:** After analysing the data it was revealed that majority of the subjects i.e. about 36% were having B+ blood group (n=87) followed by O+ (n=56), next A+ (n=45) and then AB+ (n=35). None of the negative blood group was found in ten or more subjects. Among the negative blood groups, O- was having the maximum proportion (n=9) while AB- was having the least frequency among all the blood groups (n=1). Total 255 (93%) subjects were Rh+ while just 16 (7%) were Rh-. There were 65 (27%) universal donors while 36 (15 %) universal recipients. The frequency of various blood groups in male and female subjects was almost the same except in case of A+ (n=45, 27M and 18F) and AB+ (n=35, 14M and 21F). The Rh factor in both the sexes was revealed to be surprisingly the same. There were total 112 Rh+ males while 113 Rh+ females and similarly there were 8 Rh- males while 8 Rh- females. **Conclusion:** The frequency of Rh+ factor is about 13 times more than that of Rh -. Universal donors are present in almost double amount as compared to universal recipients. In comparison between frequencies of various blood groups, majority of people are O+ while least amount of population is having AB- blood group. Moreover, both ABO and Rh blood group systems are independent of sexes and do not show any particular specification in males or females.

Keywords: ABO Blood Group System, Rhesus Blood Group System, Peshawar, Frequency

O-BN-09

AWARENESS OF OBESITY IN WORKING WOMEN

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Background: The epidemic of obesity is increasing worldwide. Obesity is affecting males and females equally. Obesity in Pakistan is increasing, which is causing many diseases. The common diseases reported in obese people are heart diseases, diabetes, menstrual disturbances, endocrine disturbances, infertility, hernia, gastrointestinal disorders, and liver diseases, certain types of cancers, genitourinary diseases, psychological disturbances, respiratory disorders and musculoskeletal disorders. However, if people are really aware about this is not clear. Obesity is prevalent in urban areas of Pakistan, and this is more prevalent in females. Obesity in working women has not been studied. **Objective:** The objective of this study was to find out how aware urban working women are about disorders caused by obesity and risks associated with increased waist size. **Methods:** A cross-sectional study was conducted on 240 overweight and obese working women living in urban areas. Most of them were women doing desk jobs and teaching and those who worked as maids. The data was collected through a structured questionnaire. The participants were aged between 22-68 and their BMI ranged from 26–34.5. **Results:** To determine whether obesity can cause diseases, 240 working women were asked questions about awareness of obesity and associated diseases. Of these 240 working women, 61% were aware that their BMI was above normal while 39% believed to be within

normal BMI range. Most of the women 54% believed that their job was making them obese while 46% gave other reasons for their obesity. To find out if they are aware about the diseases caused by obesity. Most of them (>50%) were aware that obesity can cause heart diseases, diabetes, menstrual abnormalities, infertility, respiratory disorders, genitourinary disorders, gastrointestinal diseases. Whereas only 17% were aware that obesity may lead to liver diseases, and very small percentage of women (5%) knew about the occurrence of cancer and only 3% knew about hernia. **Conclusion:** Working women living in urban areas were well aware that increase in waist size may lead to a number of disorders. But individual awareness about different diseases was not satisfactory. Steps should be taken to spread awareness regarding risks associated with obesity and increased waist circumference.
Keywords: Obesity, working women, Diseases, Awareness

O-BN-10

NEUTROPHIL/LYMPHOCYTE RATIO IN PERIPHERAL BLOOD SMEAR TO PREDICT MORBIDITY/MORTALITY IN PATIENTS OF ACUTE MYOCARDIAL INFARCTION

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Background: Present pensive environment in our societies has increased AMI problems at all levels and ages. Most of the patients die before reaching the hospitals having advanced diagnostic facilities. Hence need arises to evaluate the problem with simple and cheapest diagnostic means and ways to provide first hand treatment till reaches to hospital. **Methodology:** Three ml of blood sample was collected from each of the 140 patients presenting to the Emergency/Coronary Care Units of different hospitals of Hyderabad. The slides were prepared and white blood cells were counted at Postgraduate laboratory of Isra University. Data was analysed using SPSS-16. A p-value of ≤ 0.05 was deemed to be significant. **Results:** In present study N/L ratio was observed and compared in subjects (cardiac and non-cardiac). The N/L ratio was found to be normal in non-cardiac patients but was significantly raised in patients with myocardial infarction, especially in AMI with ST segment elevation in comparison to AMI with non-ST segment elevation ($p<0.001$). **Conclusion:** The N/L ratio was significantly raised in patients with AMI suggesting an additional diagnostic parameter for AMI at primary health care units.
Keywords: N/L ratio, AMI with ST elevation, AMI with non-ST elevation

O-BN-11

IRON STATUS IN PREGNANT ANAEMIC WOMEN FOLLOWING VARYING ORAL IRON SUPPLEMENTATION REGIMEN

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Background: Iron deficiency is the most prevalent specific micronutrient deficiency affecting 50% of the world population. Among the most affected malady are pregnant women. It is a major nutritional and public health problem in developing countries including Pakistan. **Objective:** To asses the effectiveness of different oral iron supplementation regimens in maintenance of iron homeostasis during pregnancy. **Methods:** It was a randomized clinical trial conducted over a period of three months. It was carried out in the department of Physiology, Basic medical sciences institute (BMSI, JPMC) and Obstetric and Gynaecology Department, JPMC Karachi on 126 apparently healthy females with singleton pregnancy in their 20 to 24 weeks of gestation. All selected women were randomly assigned to one of three treatment groups at the time of registration and three follow up visits at four weeks interval for 12 weeks. All subjects of pre supplementation group were included in the study as baseline control. In this study all physical parameters were evaluated at baseline, while all haematological parameters including haemoglobin, RBCs count, haematocrit and serum ferritin were evaluated first at baseline then at four weeks interval for 12 weeks following iron therapy. **Results:** The haemoglobin, red cell count and haematocrit showed significant improvement after therapy in all three groups. Mean values of serum ferritin within the groups showed significant increase when initial and final values were compared at the end of therapy. **Conclusion:**

Intermittent oral iron supplementation will be an equally effective mode of treatment of anaemia during pregnancy as it has similar effects on haematological status to those of standard daily supplementation by permitting proper regulation of iron absorption and avoiding oxidative stress.

Keyword: Iron deficiency anaemia, Pregnancy, Intermittent doses, Haematological changes

O-BN-12

NEW IRON CHELATING FACTORS FROM PLANT SOURCES THAT MAY ACT AS A GOOD ALTERNATIVE AND A MORE EFFECTIVE DRUG

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This study was performed in order to propose a better and effective treatment for the patients suffering from iron overload or toxicity, especially in the cases of thalassemia. The results of this study are based upon an experiment that is scientific testing of a drug (Camellia sinensis) that proves to be effective in treating increased non-transferrin bounded iron (NTBI) levels in body. Thalassemia is an inherited autosomal recessive blood disorder that results in reduced rate of synthesis or no synthesis of one of the globulin chains that make up haemoglobin. This can cause the formation of abnormal haemoglobin molecules, thus causing anaemia, the characteristic presenting symptom of thalassemias. An estimated 7% of the world population is a carrier of an abnormal haemoglobin gene. Out of which 30% are of thalassemia. 50,000 to 100,000 children with beta-thalassemia major die each year in middle and low income countries (with Pakistan at the top). The most common treatment adopted worldwide (including Pakistan) is continuous blood transfusion and drug therapy to treat iron overloads that is either from the disease itself or from frequent blood transfusions. Too much iron can result in damage to the heart, liver and endocrine system. The damage is characterised by excessive iron deposition. Without adequate iron chelation therapy, almost all patients with beta-thalassemia will accumulate potentially fatal iron levels. For iron chelation the most common drugs used are desferrioxamine, Ferriprox etc. These drugs have many adverse effects especially in children and young adults. But still there is no other alternative used. The objective of this study is to discover new iron chelating factors that should be more effective, should have least side effects and could easily be administered. It should also be affordable and cheaper as compare to the above two iron chelation drugs because most of the sufferers are from middle and low income countries like Pakistan. For this reason, a detailed study was done for collection of such drugs of natural origin (plants) that have earlier being used for treating iron overloads in different traditional drug treatment systems of the World or those plants that are expected to have such therapeutic effects of reducing the levels of non-transferrin bounded iron (NTBI). The capability of Camellia sinensis (green tea) to impair the iron absorption in diet or to make complexes with iron in vitro has been reported for several times in different re-known international scientific journals. Thus, it draws our attention towards green tea and its extracts. So, an experiment was performed in order to investigate the ability of green tea extract to reduce plasma NTBI concentration in vivo (animals' including rats). After experimentation we concluded that crude extracts of green tea, time and dose dependently, decreased plasma NTBI concentration. Thus, Camellia sinensis is a by-functional natural product that could be relevant for management of iron overload.

(The details of the experiment would be provided on demand because this process is still in progress to be registered/patented)

Keywords: Thalassemia, iron chelation, Camellia sinensis

O-BN-13

ASSESSMENT OF MODIFIABLE RISK FACTORS CONTRIBUTING TO OBESITY IN ADOLESCENTS OF DIFFERENT SOCIOECONOMIC GROUPS

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Background: Childhood and adolescent obesity is increasing at alarming rate worldwide and is related to adverse health outcomes. Studies across different countries have evaluated the modifiable risk factors associated with obesity in different socioeconomic groups but extent of the problem has been given less importance in our country. **Objective:** To evaluate the modifiable risk factors associated with obesity in adolescents belonging to different socioeconomic groups. **Methods:** This comparative study was carried out in urban district of Lahore. A total of 270

adolescents 13–15 years of age were recruited, 90 each from upper, middle and lower socioeconomic groups (based on the school fee). Calorie intake, physical activity and hours of television viewing and computer usage were determined by a self administered questionnaire. **Results:** There was statistically significant difference regarding daily calorie intake of the upper, middle and lower socioeconomic groups (F=4.588, df=2, $p<0.05$). There was no significant difference in hours of physical activity per day in the upper, middle and lower socioeconomic groups (F=1.997, df=2, $p>0.05$). There was a statistically significant difference in the hours of television watching and computer use per day in the upper, middle and lower socioeconomic groups (F=9.491, df=2, $p<0.05$) **Conclusion:** Calorie intake was influenced by socioeconomic status being highest in high socioeconomic group followed by the lower socioeconomic group and was lowest in the middle socioeconomic group. There was no significant difference in the hours of physical activity per day in the upper, middle and lower socioeconomic groups. Hours of television watching and computer use per day was influenced by socioeconomic status being highest in the upper socioeconomic group followed by middle and then lowest in the lower socioeconomic group.

Keywords: Body mass index (BMI), socioeconomic status (SES), food frequency questionnaire (FFQ)

O-BN-14

EFFECT OF SOY ISOFLAVONE SUPPLEMENTATION ON BONE MINERAL DENSITY OF WOMEN WITH VARIOUS MENSTRUAL STATUSES

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Background: The use of complementary and alternative medicine among menopausal women has increased in the last years. Replacement therapy in peri- and postmenopausal women is effective but its long term administration is not as safe as was previously thought, so alternative treatments are urgently needed. **Objectives:** Study tried to find out the effect of isoflavone on bone mineral density of women **Methods:** One hundred women were included in this observational experimental study of 6 months duration. Subjects were divided into 2 groups on the basis of their menstrual status, i.e., Group-A1 (50 women with perimenopausal status) and group-B1 (50 women with postmenopausal status). Their treatment strategy was based on a capsule of Soy isoflavon taken twice daily for 3 months and their response rate was checked by estimating their T-score before and after Isoflavone/phytoestrogen therapy by DEXA densitometry. **Results:** Values of bone density in peri- and postmenopausal women before and after Isoflavone/phytoestrogen were significantly increased ($p<0.001$) after the use of phytoestrogen. Isoflavone/phytoestrogen therapy was more effective to improve t-score in both peri- and postmenopausal women. **Conclusion:** Phytoestrogen is an effective therapy of osteopenia/osteoporosis in peri- and postmenopausal women. Further research is needed on a larger number of women.

Keywords: isoflavone, osteopenia, osteoporosis, Phytoestrogen, menopause, bone density

O-BN-15

AWARENESS ABOUT IMPORTANCE OF IRON AMONG MEDICAL AND NON-MEDICAL STUDENTS OF RAWALPINDI AND ISLAMABAD

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Background: Iron is one of the most important minerals in body which is required for the formation of haemoglobin. Haemoglobin is a plasma protein, which transports oxygen in the body. Deficiency of iron will cause a disease called iron deficiency anaemia (IDA) which is a global health problem effecting both developing and developed countries. According to World health organization (WHO) research 1993–2005, in South East Asia, prevalence of IDA in preschool aged area is 65.5%, in pregnant women 48.2% and in non pregnant women 45.7%. **Objective**: To assess the awareness about iron rich diet, practices and iron deficiency anaemia among medical & non-medical students in Rawalpindi and Islamabad. **Method**: A cross-sectional comparative study was carried out in

Yusra medical and dental college and two other non-medical colleges in Rawalpindi and Islamabad during 2012. Total sample size of 195 was calculated with the help of WHO software by keeping confidence interval 95%, absolute precision (d) 0.07 and prevalence of iron deficiency anaemia and awareness about iron rich diet 45%. A pre-tested structured questionnaire was used to interview the 200 students, 100 medical and 100 non-medical students selected through consecutive sampling technique. Data collection tool explored the demographic characteristics and different questions on knowledge about iron rich diet and at the same time about dietary habits and practices among the students. **Result:** The data was analysed in SPSS version 17. Majority of the participants were female (67%), compared to males (33%). The mean age of the participants in this study was 21 years±2 SD however majority of the students (57%) fall in the age group of 21–23 years. 55% were medical students and 45% were non-medical students. Majority of the students (94%) know about the importance of iron but very few (9%) know its significant role in mental development,. **Conclusion:** Results reflect the gap in the knowledge and practices of students including both medical and non medical students.

Keywords: awareness, iron deficiency anaemia, iron

O-BN-16

ASSOCIATION OF SURFACTANT PROTEIN-D WITH OBESITY AND TYPE 2 DIABETES MELLITUS

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Background: Type 2 diabetes and obesity are highly prevalent conditions worldwide. Diabetic and obese individuals are susceptible to respiratory tract infections. They have lower levels of surfactant protein–D (SP-D) which can enhance immunity. **Objectives:** To evaluate association of SP-D with diabetes and obesity and its role in pulmonary infections. **Method:** Cross sectional study was conducted at institute of basic medical sciences, DUHS in collaboration with National institute of Diabetes and Endocrinology Karachi during 2011–12. Ninety subjects of age 30–60 years were recruited and divided into four groups, i.e., diabetic obese, non-diabetic obese, diabetic normal weight and non-diabetic normal weight subjects. Blood samples were drawn. Serum SP-D and RBS was determined by SP-D ELIZA kit and hexose kinase method respectively. Data was analyzed using SPSS-16. Means of study variables between the groups were compared by ANOVA. Associations of the SP-D with BMI and RBS were analyzed by regression analysis. Independent risk of pulmonary infections in diabetic patients was evaluated by logistic regression. $p<0.05$ was significant **Results:** Serum SP-D was significantly lower in Diabetic obese (85.4±50.26) and non Diabetic obese (73.3±45.43) than diabetic normal weight (150.28±40.93) and non diabetic normal weight (147.47±156.80) individuals. Mean SP-D was significantly different between all groups ($p=0.012$) and negatively associated with BMI ($p=0.001$). There was no association between RBS and SP-D ($p=0.415$) **Conclusion:** Diabetic and non diabetic obese subjects have lower SP-D levels because of higher BMI.

Keywords: Surfactant Protein- D, Diabetes Mellitus, Obesity

O-BN-17

LEVO-CARNITINE SUPPLEMENTATION OPTIMISES OXIDATIVE STRESS AND SKELETAL MUSCLE FUNCTIONS IN TYPE 2 DIABETIC RATS

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Background: The metabolic derangements, including oxidative stress, in type 2 diabetes mellitus (T2DM) are likely to affect skeletal muscle contractile functions adversely. Levo-carnitine is known to improve skeletal muscle contractile functions in healthy humans and rats. It has also been claimed to correct metabolic derangement and oxidative stress in T2DM. Therefore, it is likely to improve muscle contractile functions in T2DM. **Objectives:** To determine the effect of levo-carnitine supplementation on isometric contraction, maximum fused tetanic tension and fatigue of skeletal muscles along with oxidative stress in type 2 diabetes mellitus. **Methods:** It was a randomised control trial carried out in Physiology department of Army Medical College. Sprague-Dawley rats (n=90) were

randomly divided in three equal groups. Healthy rats served as the control while T2DM was induced in diabetic and carnitine groups. The carnitine group was administered levo-carnitine 200mg/kg/day intraperitonealy for 6 days. At 28th day, extensor digitorum longus (EDL) muscles were removed and were assessed for maximum isometric twitch tension, time-to-peak twitch tension and time-to-relax to 50% of the peak twitch tension, maximum fused tetanic tension and fatigue in using iWorx data acquisition unit (AHK/214). Blood obtained by intracardiac sampling at 28th day was used for estimation of serum malondialdehyde (MDA) levels. **Results:** No significant difference was found in maximum isometric twitch tension, time-to-peak twitch tension and time-to-relax to 50% of the peak twitch tension amongst the three groups. However, carnitine group showed significant improvement in maximum fused tetanic tension, maximum fused tetanic tension after fatigue protocol and recovery from fatigue after 5 minutes of rest period when compared with diabetic group. Serum MDA levels were significantly reduced in carnitine group as compared to the diabetic group. **Conclusion:** Levo-carnitine supplementation reduces oxidative stress, improves work capacity and delays fatigue in T2DM.

Keywords: Levo-carnitine, type 2 diabetes mellitus, skeletal muscle functions, oxidative stress

O-BN-18

TREND OF BLOOD GROUPS AND Rh-FACTOR IN ARMY MEDICAL COLLEGE

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Background: A blood group could be defined as 'An inherited character of the red cell surface, detected by a specific antibody'. The blood group studies are required for blood transfusion, organ transplant, anthropology, genetic research, and for evolutionary point of view. **Objectives:** The objective of this study was to find out the trend of blood groups among the students of Army Medical College, Rawalpindi and find out the number of individuals with rare blood groups. **Methods:** The study was carried out in the settings of Army Medical College and Armed Forces Institute of Transfusion, Rawalpindi. A total of 391 individuals were screened for their blood groups from January 2011 to December 2011. Out of them 277 were males (70.84%) and 114 were females (29.16%). Blood group tests were performed on these samples and results were collected and counted. **Results:** According to ABO system individuals having Blood Group A were 28.13%, with Blood Group B were 32.73%, Blood Group AB were 5.37% and with Blood Group O were 3.75%. According to Rh-system the individuals with Rh-positive blood group were 90.79% and those with Rh-negative blood group were 9.23%. According to both ABO and Rh-systems the percentage of individuals with blood group O+ was 31.96%, those having A+ were 34.04%, those with B+ were 30.18%, the percentage of AB+ individuals was 4.60%, and those of AB-, B-, A-, and O- was 0.77%, 2.55%, 4.09%, and 1.79% respectively. **Conclusion:** Our study is in coherence with other studies in the region showing dominance of group O and B. The blood group frequencies are in this order O>B>A>AB in ABO system. In case of Rh system, Rh-positive blood group has 90% occurrence. According to both ABO and Rh- blood group system combined, A+ (34.04%) is most prevalent and the order of occurrence is A+ve > O+ve > B+ve > AB+ve > A-ve > B-ve > O-ve > AB-ve

Keywords: Blood groups, ABO system, Rh system

O-BN-19

LIPID PROFILE IN PATIENTS OF TYPE 2 DIABETES MELLITUS

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Background: Type 2diabetes mellitus is the more prevalent form of diabetes mellitus and is one of the major health and socioeconomic problem worldwide. In the syndrome of type 2 diabetes, there is simultaneous presence of two defects, insulin resistance and impaired beta cell function. Type 2 diabetes is associated with a clustering of interrelated plasma lipid and lipoprotein abnormalities, which include reduced HDL cholesterol, a predominance of small dense LDL particles and elevated triglyceride levels. Each of these dyslipidemic features is associated with an increases risk of cardiovascular disease. **Objectives:** To compare the levels of lipid profile in controlled and uncontrolled type-2 diabetic patients and healthy non-diabetic controls. **Methods:** This cross sectional study involved a total of 120 subjects including 80 type 2 diabetics and 40 non-diabetic controls between the ages of 40 to

60 years. A detailed medical history was taken from each subject and the individuals with history of type 2 diabetes underwent clinical examination. Individuals with hypertension, smoking, chronic infections and renal diseases were excluded. Fasting blood samples were drawn and serum concentrations of glucose, HbA1c, and lipid profile were measured by kits based on enzymatic methods. Body mass index was measured with the help of body weight and height. These parameters in type 2 diabetics were compared with the non-diabetic controls to see the significance of difference. **Results:** Mean plasma glucose, HbA1c and lipid profile (serum total cholesterol, triglycerides, low density lipoprotein) were significantly higher (p<0.01) in type 2 diabetic patients. Serum HDL was significantly lower (p<0.01) in type 2 diabetic as compared to healthy controls. BMI was significantly higher in type 2 diabetics than in non-diabetic controls. **Conclusion:** There are raised levels of lipid profile in uncontrolled type 2 diabetics.
Keywords: Type 2 diabetes mellitus, HbA1c, dyslipidemia, Lipids

O-BN-20

SERUM ZINC AND NEUTROPHIL FUNCTION IN LOWER, AND UPPER/ UPPER MIDDLE SOCIOECONOMIC GROUPS

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Background: Zinc (Zn^(+2)) is a silvery metal. It is a bivalent cation. It is an essential trace element for all forms of life and is necessary for optimal growth and development of human body. It exists in nearly every cell of the body. It plays a significant role in multiple aspects of the immune system. It is crucial not only for the normal development and functions of cells mediating non specific immunity but also for the development of acquired immunity, like the immunoglobulin production. The deficiency of zinc is associated with diets of plant origin, which are rich in zinc absorption inhibitors. The socioeconomic poor, both rural and urban, population in Pakistan habitually consumes such diets. **Objective:** To assess the serum zinc and neutrophil function levels in different socioeconomic groups **Methods:** A total of 100 healthy subjects, both male and female were investigated. Out of these, 50 (25 males and 25 females) belonged to the lower socioeconomic (LSEC) group and 50 (25 males and 25 females) belonged to the upper / upper middle socioeconomic (USEC) group. Serum zinc was determined by colorimetric method and neutrophil function was estimated by the Nitroblue Tetrazolium reduction test (NBT). Both the parameters were compared in the two socioeconomic (SEC) groups. **Results:** It was found that serum zinc was significantly lower in the LSEC group. Similarly NBT percentage phagocytosis was also significantly lower in the LSEC group as compared to the USEC group. NBT percentage phagocytosis did not show significant gender difference in the LSEC group however it was significantly higher in females than in males in the USEC. Generally a significant positive correlation was found between serum zinc and neutrophil phagocytic function. **Conclusion:** The LSEC class has low serum zinc levels and low NBT percentage phagocytosis and hence is at greater risk of developing infections.
Keywords: Serum zinc, immune system, socioeconomic group and Nitroblue tetrazolium reduction test.

O-BN-21

IRON STATUS AND INSULIN RESISTANCE IN NON-DIABETIC OFFSPRINGS OF TYPE 2 DIABETICS AND NON-DIABETICS

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Background: Iron stores have been taken as one of the components of insulin resistance syndrome and body iron status is positively correlated with insulin resistance. It is still unclear whether elevated ferritin level in insulin resistant subject is the cause or consequence of insulin resistance. Insulin resistance is a consistent finding in type 2 diabetes mellitus and it is present several years before the onset of type 2 diabetes mellitus. **Objective:** The study was designed to compare and correlate insulin resistance with iron parameters (including serum ferritin, transferrin saturation and blood haemoglobin) in non diabetic offspring of type 2 diabetics and non diabetic offspring of non diabetics. **Methods:** It was a cross-sectional observational study. This study was conducted on one hundred and twenty male subjects between the ages of 20–40 years. They were divided into two groups, each group included 60 subjects (Group-A included non diabetic offspring of type 2 diabetics and Group-B included non diabetic offspring

of non diabetics). Fasting blood sample was taken from each subject and analyzed for glucose, haemoglobin, insulin, iron, TIBC and ferritin. Insulin resistance was determined by HOMA-IR index. Transferrin saturation was calculated from serum iron and TIBC. Data was analyzed by SPSS-17. **Results:** Insulin resistance and iron parameters were significantly higher in non diabetic offspring of type 2 diabetics as compared to those of the non diabetics. There was significant positive correlation between insulin resistance and serum iron and blood haemoglobin in non diabetic offspring of type 2 diabetics and there was also significant positive correlation between insulin resistance and serum iron, blood haemoglobin and serum transferrin saturation in non diabetic offspring of non diabetics. **Conclusion:** Non-diabetic offspring of type 2 diabetic parents have increased parameters of iron status and insulin resistance. Significant positive correlation exists between iron parameters and insulin resistance.
Keywords: T2DM, Iron status, Offspring, Transferrin

P-BN-22

MALNUTRITION IN FLOOD AFFECTED AREAS OF SINDH, PAKISTAN

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Background: The vast majority of children around the world suffer from deficiency of nutrition. The high percentage of these children dies due to the severe malnutrition, which is caused by extreme deficiency of protein and energy. After the age of six month, the children have to take weaning diet which can fulfil the nutritious requirement of the children. However, in the poor community, the diet of children has not met the criteria of WHO recommendation for diet. 36% of children in the world are underweight. The main causes of malnutrition in the children are; poverty, Ignorance, Inadequate weaning practices, child abuse, cultural and social practices (i.e., Vegan, Low fat diets). Evidence suggests that natural calamities like flood and earth quacks worsen the situation of malnutrition around the world. Recent flood in Sindh has left hundreds of thousand children malnourished. The exact data as to how much percentage of children suffers is still unavailable and requires the detailed study.
Objective: The objective of this study is to determine the effect of malnutrition on children in the flood affected rural areas of Sindh, Pakistan. **Methodology:** The study was conducted in the flood affected areas of Sindh. This was a cross-sectional study carried out on 172 children. The children were aged between 6 months to 59 months. The data of their socio-economical condition and the status of malnutrition were collected by interview through structured questionnaire. Malnutrition was described by measuring the middle of the Upper Arm Circumference and BMI. **Results:** Out of 172 children, 109 (63.37%) were affected by malnutrition, further analysis into the mild, moderate and severe malnutrition was carried out. This analysis shows that 71 (63.15) of the children had mild, 24 (22%) suffered from moderate malnutrition and small percentage 14 (12.85%) of these children also suffered from sever malnutrition. In addition, the children who were suffering from severe malnutrition also showed similar signs of kwashiorkor, marasmus, except that they did not have oedema. **Conclusion:** This study gives an insight into the level of malnutrition in children specially to find out the cases of kwashiorkor.
Keywords: Malnutrition, children, starvation, flood, Sindh

O-Neu-01

COMPARISON OF THE EFFECTS OF SIMVASTATIN AND ALPHA-TOCOPHEROL ON DISTURBED NERVE CONDUCTION IN OBESE SPRAGUE DAWLEY RATS

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Background: The incidence of obesity is increasing worldwide. The neuropathy associated with obesity, that is evident from disturbed nerve conduction, is one of the complications for which a number of treatment options are being considered. In this study, simvastatin, a hydroxyl methyle glutaryle coenzyme A reductase inhibitor and alpha-tocopherol, a dietary antioxidant are compared for their effects on sciatic nerve conduction velocity. **Objectives:** To compare the effects of simvastatin and alpha-tocopherol on sciatic nerve conduction velocity in obese rats. **Methods:** The study was a Randomised control trial conducted from December 2008 to November 2009. One hundred and twenty adult male Sprague Dawley rats were divided into four groups with thirty rats in each

group. One group of rats was taken as control with normal diet while other three groups were given high fat diet (HFD) for the whole study period, i.e., ten weeks. Along with the high fat diet, group-III and group-IV were given simvastatin and alpha-tocopherol supplemented diet respectively. At the end of study, conduction velocity of sciatic nerve was determined with the help of Power lab data acquisition system. **Results:** The three groups with HFD showed more than 25% increase in weight at the end of study as compared to control group. The control group with high fat diet (Group-II) showed decreased sciatic nerve conduction velocity when compared with control (Group-I). Both the groups that were given simvastatin and alpha-tocopherol each showed improvement in sciatic nerve conduction velocity ($p<0.001$) after four weeks when compared with the group that was given HFD without any supplementation. However with alpha-tocopherol, the nerve conduction velocity was improved more significantly. **Conclusions:** Simvastatin and alpha-tocopherol both are effective for improving sciatic nerve conduction velocity in HFD induced obesity.

Keywords: Obesity, simvastatin, alpha-tocopherol, nerve conduction velocity

O-Neu-02

AN ELECTRODIAGNOSTIC STUDY ON CARPAL TUNNEL SYNDROME

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Objective: To study the changes occurring in electrophysiological parameters such as nerve conduction velocity (NCV), conduction time (CT) and amplitude of median (sensory and motor) nerve action potential in patients with carpal tunnel syndrome (CTS). **Methods:** This Experimental observational study was carried out in Department of Physical Medicine and Rehabilitation, Jinnah Postgraduate Medical Centre, Karachi. Subjects were patients of carpal tunnel syndrome (n=30) and normal healthy persons (n=20) were examined during the course of present study. The electro-diagnostic recording of effected 33 wrists (17 unilateral and 8 bilateral) were obtained by electromyography, using "surface electrodes" for determination of median motor nerve conduction velocity (M-MNCV) and "ring-electrodes" for determination of median sensory nerve conduction velocity (M-SNCV). The recordings of 5 patients were out of range of electromyography, therefore excluded from the study. Besides the NCV, other parameters such as, median motor conduction time (M-MCT), amplitude of motor action potential (MAP), amplitude of sensory action potential (SAP) and median sensory latency (M-SL) were also recorded in patients and healthy subjects for comparison of our results. Data was analysed statistically on SPSS version 17.0. **Results:** Among 30 patients with suspected CTS, 5 patients has unobtainable electro-diagnostic results. In 33 wrists of 25 patients M-MCT significantly increased (5.26±0.36 m sec) as compared with normal subjects (4.12±0.12 m sec $p<0.01$). Highly significant slower M-MNCV found in patients of CTS (46.50±1.26 m/sec) than normal subjects (58.30±0.73 m/sec $p<0.01$). The amplitude of M-MAP was low (less than 4.29 mv in CTS), 2.25±0.40 vs. 6.55±0.45, $p<0.01$. Finger III median sensory digital nerve of CTS showed significantly increased value of M.-SL (2.48±0.16) when compared with normal (1.89±0.03 msec $p<0.01$). The significant decreased values of M-MSNCV recorded in CTS patients (42.14±2.22) as compared to the normal subjects (54.20±1.11, $p<0.01$). The significant decrease amplitude of SAP also recorded in patients (7.25±2.42 mv) as compared to normal subjects (27.90±2.40, $p<0.01$). **Conclusion:** This study confirmed that nerve conduction study is a sensitive and helpful test for early detection of abnormal functions of nerve which direct the physician towards the appropriate line of treatment.

Keywords: Carpal tunnel syndrome, electrophysiology, neuronal conduction, entrapment neuropathy.

O-Neu-03

NERVE CONDUCTION VELOCITY AND AMPLITUDE OF ACTION POTENTIAL IN SENSORY PERIPHERAL NERVES OF UPPER AND LOWER LIMBS IN NORMAL SUBJECTS

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Objective: The objective of this study was to provide the reference electrophysiological data for commonly tested sensory nerves of upper and lower limbs. **Methods:** This experimental observational study was carried out in the Department of Physical Medicine and Rehabilitation, Jinnah Postgraduate Medical Centre, Karachi. Nerve conduction data was recorded from normal healthy volunteer (n=80; males n=36 and females n=44), age range (20–60 yrs) with normal neurological examination and no known risk factor or symptoms to suggest the disease of peripheral nervous system. Subjects were further grouped; 20–30 yrs Male (n=10) female (n=16), 31–40 yrs Male (n=10) female (n=12), 41–50 yrs male (n=10) female (n=10) and 51–60 yrs male (n=6) female (n=6). Radial nerve, sensory median (finger III), sensory ulnar (finger V) nerves of upper limbs and Sural nerve of lower limb were studies using standard recording technique. The physiological variables recorded from these nerves include nerve conduction velocity (NCV) and amplitude of sensory action potential (SAP). Data was analysed statistically on SPSS-17. **Results:** No statistically significant difference was found in conduction velocity and amplitudes of upper and lower sensory peripheral nerves by gender. However, a significant decrease in the NCV and SAP of radial nerve and sensory median was observed in both genders in the age group 51–60 yrs. In the same age group a significant decrease in the NCV and SAP were observed in sensory ulnar and the sural nerve in males only. **Conclusion:** We designated the normative reference values of the sensory peripheral nerves in healthy subjects which have value to determine neuropathy in early stage of disease.
Keywords: nerve conduction, nerve conduction velocity, sensory nerve action potential, peripheral sensory nerves

O-Neu-04

GENDER AND CONTRACTILE FUNCTIONS OF SLOW AND FAST SKELETAL MUSCLES IN STREPTOZOTOCIN INDUCED TYPE 1 DIABETIC SPRAGUE DAWLEY RATS

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Type 1 diabetes mellitus is associated with specific morphological and metabolic abnormalities of skeletal muscle in a fibre specific fashion. The present study was designed to compare the contractile functions of slow and fast skeletal muscles between streptozotocin induced type 1 diabetic male and female Sprague Dawley rats. Material and Methods: Thirty healthy Sprague Dawley rats (15 male and 15 female) were divided into two groups and studied after four weeks. The rats in group I (male diabetic; n=15) and group II (female diabetic; n=15) were fed on normal pellet diet and water ad libitum and rendered diabetic by single intraperitoneal injection of streptozotocin, 65 mg/kg body weight at the start of study (day 1). Development of diabetes was confirmed within 72 hours by measuring blood glucose levels by glucometer. At the end of four weeks, that is, on day 29, dissection of slow soleus and fast extensor digitorum longus (EDL) muscles was carried out. The contractile parameters recorded for both muscles by iWorx advanced animal/human physiology data acquisition unit (AHK/214) included maximum isometric twitch tension, time to peak twitch tension, time taken to relax to 50% of the peak twitch tension, maximum fused tetanic tension, maximum fused tetanic tension after the fatigue protocol and tetanic tension after 5 minutes of rest period following the fatigue protocol. Results: At the end of four weeks, the weight of isolated soleus and EDL muscles in the male diabetic rats was significantly higher ($p<0.001$) as compared to the female diabetic rats. However, no significant difference was found in any of the contractile functions of isolated soleus and EDL muscles when compared between the male and female diabetic rats. Conclusion: It is concluded that no gender difference exists in the contractile functions of slow and fast skeletal muscles in streptozotocin induced type 1 diabetic Sprague Dawley rats.
Keywords: Streptozotocin, type 1 diabetes mellitus, blood glucose, soleus, extensor digitorum longus

O-Neu-05

VASCULAR TONE: A MYSTERIOUS HUMAN BEHAVIOR

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Arteriolar smooth muscle normally display a state of partial constriction known as vascular tone initially two factors are mainly responsible for vascular tone in human beings (1) Myogenic activity of arteriolar smooth muscle i.e. membrane potential fluctuates without any neuronal or hormonal influence. (2) Sympathetic discharge release

norepinephrine to enhance vascular tone. Normal vascular tone in human eventually determines the capillary network exchange (Starling Equilibrium). Factors changing resistance to flow in the vessels are (1) Local intrinsic controls which matches blood flow to the metabolic needs of the specific tissue (2) Extrinsic controls which is important in blood pressure regulation. Classical concept of feedback control for vascular tone needs status of cardiac factors like heart rate, stroke volume which maintain vessel diameter and blood pressure through baroreceptors. This whole mechanism needs vasomotor control command of brain stem. According to original Krogh concept vascular tone is determine at the capillary network through AV shunt of Venule and Arteriole and it is learn through studies expanding a century to conclude that it the mitochondrial utilization of oxygen i.e. tissue performance determines vascular tone. The latest conclusion regarding the control of vascular tone suggest that through oxygen-dependent release of the vasodilator ATP, the mobile erythrocyte plays a fundamental role in matching microvascular oxygen supply with local tissue oxygen demand. Thus erythrocytes are the final oxygen sensor and modulator of vascular tone. The techniques involved to measure the vascular tone, and erythrocytes oxygen saturation needs highly sensitive oxygen sensor and device for signal transduction pathway for ATP release from erythrocytes. The mystery behind the normal vascular tone in humans is manifold and depends on overall homeostatic behavior and circadian control. In this regard sleep, eating and balanced physical activity plays their important roles. In the modern life stress and fears are critical determines of acute changes in vascular tone.

Keywords: Vascular tone, Starling Equilibrium, erythrocytes, vasodilator ATP, circadian behavior.

O-Neu-06

ROLE OF PKC IN AGONIST INDUCED CA^{2+} SIGNALING AND ENDOTHELIAL CELL SURVIVAL IN INTACT RAT TAIL ARTERY

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Background: The presence and translocation of PKC in response to phorbol esters, TGF-β and substance P in the endothelial cells of isolated rat brain microvessels were observed. In addition to Ca^{2+} signalling some of the PKC isoforms are also involved in control of apoptosis. The expression and role of PKC is controversial in endothelial cells, with results depending on the species and culture conditions and can even vary in the intact endothelial cells. **Objectives**: To identify the Ca^{2+} dependent isoform of PKC expressed in endothelial cells; it's possible role in Ca^{2+} signalling and endothelial cell survival by using PKC activator (PDBu) and inhibitor (Ro-32-0432). **Methods:** In the present study we have used immunohistochemistry, confocal imaging and culturing to investigate the role of PKC in intact endothelium of conduit artery. Rats were humanely killed under CO_2 anaesthesia; their tail removed from the ventral grove, cleaned of fat and loaded with Fluo-4 AM (Molecular Probes, 15 μm) with pluronic. Confocal imaging was done using Nipkow disc based confocal imaging system (Ultraview Perkin Elmer, UK). Minimum of 3 animals were used in each set of experiments. Descriptive statistics were used. The data are given as Mean±SEM, each taken from a different animal. **Results**: Immunohistochemical studies showed that PKC-α is expressed which translocates upon agonist stimulation in endothelial cells. Direct activation of PKC by PDBu (0.1 μM) produced a biphasic Ca^{2+} transient in minority of cells 10%–20% (n=50–70 cells, 7 vessels) consisting of initial slow rising and subsequent, spike followed by sustained non-oscillatory component which is sensitive to inhibition by Ro-32-0432 (5 μM) or in Ca^{2+} free solution. Stimulation of intact endothelial cells by carbachol [CCh] (0.1 μM, 1 μM, 10 μM) produced calcium transient which consisted of two components: initial fast - dependent on Ca^{2+} release and subsequent, sustained dependent on Ca^{2+} entry. Pretreatment of the ECs by PKC inhibitor Ro-32-0432 (5 μM) on CCh induced Ca^{2+} transient abolished Ca^{2+} oscillations and reduced the initial spike and subsequent sustained component of CCh induced Ca^{2+} transient in only 10–5% (n=300–400 cells, 20 vessels) of the cells. Sustained component of CCh induced Ca^{2+} transient in control cells was 54±2.9% of the peak taken for 100% (n= 135 cells, 6 vessels). Inhibition of PKC by Ro-32-0432 reduced the initial fast component of CCh induced Ca^{2+} transient to 46±3.3% and subsequent sustained component to 20±2.6% (n=129 cells, 7 vessels) of the peak, respectively. The CCh response was never abolished and could be reproduced even after 1hr incubation in Ro-32-0432. In addition, culturing of the intact endothelial cells in the presence of PKC inhibitor Ro-32-0432 (5 μM) produced death of endothelial cells (n=10 vessels). **Conclusions:** Thus the data obtained suggests that PKC-α expressed in intact endothelium of large conduit arteries does not play a significant role in Ca^{2+} entry activated by CCh however it plays an important role in endothelial cell survival.

Keywords: Protein kinase C, endothelial cells, Calcium signalling, confocal imaging, culture

O-Neu-07

EFFECT OF ASCORBIC ACID ON FORCE FREQUENCY RELATIONSHIP OF SKELETAL MUSCLE FIBRES IN LONG TERM COLD EXPOSED SPRAGUE DAWLEY RATS

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Background: On exposure to prolonged cold temperature, the body responds for effective heat production both by shivering and non-shivering thermogenesis. Cold exposure increases the production of reactive oxygen species which influence the sarcoplasmic reticulum Ca^{++} release from the skeletal muscles and affect their contractile properties. **Objective:** The role of ascorbic acid supplementation on force-frequency relationship of cold exposed skeletal muscles was evaluated in this study. **Method:** Ninety healthy, male Sprague Dawley rats were randomly divided into three groups of control (I), cold exposed (II) and cold exposed along with ascorbic acid supplementation (III). Group II was given cold exposure by keeping their cages in ice-filled tubes for 1 hour/day for one month. Group III was also exposed to cold along with ascorbic acid supplement as 500 mg/L mixed in drinking water for one month. After the study period, the extensor digitorum longus muscle was dissected out and force-frequency relationship in the skeletal muscle fibres was analysed on computerised data acquisition system. **Results:** The group II showed a significant decline in the contractile properties of skeletal muscle fibres at different frequencies as compared to the group I ($p<0.05$). In group III, however, the force was contraction was better than group II ($p<0.05$). **Conclusion:** Ascorbic acid prevents the decrease in force of contraction in muscles exposed to chronic cold.

Keywords: Ascorbic acid, cold stress, force of contraction, skeletal muscles

O-CR-1

EFFECTS OF SMOKING ON PULMONARY FUNCTION TESTS AND RESPIRATORY MUSCLE STRENGTH IN YOUNG MALE SUBJECTS LIVING IN MAKKA

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Background: Cigarette smoking is the leading cause of preventable death and its association with lung cancer and chronic obstructive lung disease is well established. The pulmonary function tests have been described by many researchers as earliest spirometric indicators of airway disease in young smokers. **Objectives:** To determine the effects and correlation of smoking on pulmonary function test and respiratory muscle strength in young male subjects. **Methods:** A total number of 376 males were included in this cross sectional study out of which 239 were non-smokers and 137 were smokers. The mean age of the smokers was 21.23±2.1 while the age of non smokers were 19.37±0.97. All subjects were asked to fill a questionnaire regarding smoking, eating habits and history of self and family respiratory illnesses. Pulmonary function tests were determined by a computerised dry electric spirometer. Forced Vital Capacity (FVC), Forced Expiratory Volume in one second (FEV_1), FEV_1 as a percentage of FVC (FEV_1/FVC), and the predicted % values were calculated automatically according to age, sex and height. MIP and MEP were measured by a closed mouth piece attached to a pressure gauge. MVV was measured by asking the patient to breath at maximal tidal volume and respiratory rate for 12 seconds and the volume of expired air was expressed in L/min. **Statistical Analysis:** Data was expressed in Mean±SD student's *t*-test was applied to find the difference between smokers and non smokers. Analysis performed using SPSS-12. **Results:** Values of FEV_1 decreased significantly in smokers as compared to non-smokers. In addition to the above early indicators of airway obstruction MVV, MIP and MEP also followed the same pattern of decrease when studied. **Conclusion:** Cigarette smoking is associated with reduced pulmonary function. Smoking cessation may have a beneficial effect on FEV_1 decline. It is suggested that smoking cessation programmes may be instituted as a part of major strategy to prevent chronic obstructive lung diseases in young individuals.

Keywords: smoking, pulmonary function tests, respiratory muscle strength

P-CR-2

ASSESSMENT OF CHANGE IN PEAK EXPIRATORY FLOW RATE IN PAKISTANI MEDICAL STUDENTS

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Background: Peak expiratory flow (PEF) is a useful measure of pulmonary health status and is frequently used in asthma management. Reduction in PEF is usually indicative of onset of asthma symptoms. Values of PEF can be used only if normal values are known. The definition of normal range is always difficult and may vary between regions and be affected by a variety of factors. **Objective:** The objective of this study was to observe the change in peak expiratory flow rate in 1st to final year medical students and examine the factors that possibly influence this measurement. **Methods:** 131 normal, non-smoking Pakistani adult (78 males and 53 females) medical students were taken as subjects. All subjects belonged to Ziauddin Medical College and participated as volunteers in this study. The age of subjects was 19–24 years. They had no history of any chronic diseases and were not under physical training program and/or any medications. Peak expiratory flow rate (PEFR) was measured using Peak Flow meter as per the standard method of Wright and Mc Kerrow (1959). Each subject blew into the Peak Flow meter with maximum force after full inspiration, three readings were taken and the best was recorded. **Results:** The PEFR values in male students was found to be higher than the female students when compared according to height and weight. The *p* value was highly significant in both groups except the group of students having height range between 171–175 Cm. **Conclusion:** The PEFR in this study was better than the other studies conducted in this region among medical students and students from other disciplines.
Keywords: PEFR, Tuberculosis, Hypertension, Diabetes, Peak Flow meter

O-CR-UG-3

EMERGING RISK FACTORS OF CORONARY HEART DISEASE IN 25–50 YEARS OF INDIVIDUALS IN PAKISTAN

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Introduction: Through the recent data obtained from different medical institutions, it is evident that an increasing population of Pakistan including the youth is falling prey to Coronary Heart Disease. This study was carried out to check the major risk factors and incidence of Coronary Heart Disease in Pakistani subjects of 25–50 year age. **Methodology:** Through a descriptive study 100 patients were selected from different Medical Institutes. Factors like smoking, hypertension, diabetes mellitus, family history, obesity and mental stress were explored. Investigations that the patients went through were also analysed. **Results:** 65% of subjects were males and 35% were females. Majority of them were above the age of 35. In males the major cause was smoking. Diabetic females were more prone to CHDs. Smoking, certain drugs and mental stress account for the alarming rise in illness in subjects aging from 25–35 years. **Conclusion:** There has been a marked increase in Coronary Heart Disease among the new generation. Aging makes one more susceptible to Coronary Heart Disease but the appalling results call for a definite spread of awareness among the young Pakistanis who are falling prey to Coronary Heart Disease due to addiction of certain drugs and mental stress.
Keywords: Coronary Heart Disease, Smoking, Diabetes, Risk Factors

P-CR-4

CORONARY ARTERY DISEASE RISK FACTORS IN POSTMENOPAUSAL WOMEN

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Background: Increasing evidence suggest an increase in cardiovascular diseases (CVD) in both male and females. CVDs can be predicted by coronary artery disease risk factors. These risk factors are hypertension, high cholesterol,

obesity and diabetes. Men are at more risk after 35 years of age, and women are protected by oestrogen and progesterone before menopause. After menopause this protective action is hampered and they become 10 times more at risk of developing CVDs. Pakistan has high number of CVDs in women and most of these women are above 45 year which indicates that they develop the CVD after menopause. However, only scanty data is available about CAD risk factors in postmenopausal women living in Pakistan. **Objective:** The objective of this study was to analyse the CAD risk factors in postmenopausal women living in District Tando Allahyar, and to see the prevalence of one or more risk factors in postmenopausal women. **Methodology:** This was a cross-sectional pilot study. Total 60 women (aged 45–65 years) were included in the study. The data was collected through interview based on structured questionnaire. All women studied were postmenopausal. Serum Cholesterol level was measured using Microlab® 300. BMI was measured using standard method. **Results:** Out of all the women studied, 66.6% had at least one or more CAD risk factors. 10% had high cholesterol level (<200 mg/dl), and 39.9% had hypertension. 3.3% of women had both cholesterol and hypertension, and 13.3% had diabetes and hypertension. 33.3% of the women had BMI in the range of 30 to 40, and 3.3% women had more than 40. **Conclusion:** This study indicates the high prevalence of CAD risk factors in postmenopausal women.

Keywords: Coronary Artery Disease, Risk Factors, Postmenopausal, Menopause

O-CR-5

CARDIOVASCULAR RISK FACTORS AND LONG-TERM TOXICITY AFTER CISPLATIN BASED CHEMOTHERAPY IN PATIENTS OF GERM CELL CARCINOMA

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Background: A unique aspect of cisplatin induced cardiovascular effects is that, they can be manifested later in a patient's life. The late cardiovascular toxicity is associated to the fact that cisplatin can be measured in the blood even after 20 years of treatment. Elevated levels of endothelia and inflammatory marker proteins are measured in the plasma of the patients years later after the therapy. Delayed toxicity associated with cisplatin comprises of hypertension, elevated cholesterol levels, increased BMI and cardiovascular events. The present study identifies the risk of cardiovascular diseases in long term survivors of ovarian and testicular carcinoma and reports the incidence of associated cardiovascular events. **Objective:** To assess the prevalence of cardiac risk factors and delayed cardiovascular toxicity in long term survivors of ovarian and testicular carcinoma treated with cisplatin. **Methods:** Twenty-one patients treated with cisplatin based chemotherapy (at KIRAN) >7 years before the time of analysis were included in the study to evaluate cardiac risk factors (hypertension, obesity, dyslipidemia, and diabetes). Cardiac biomarkers (GOT, Tropinin I, and CPK), and ECG was further assessed in the patients who had experienced cardiovascular events (MI, Angina) prior to assessment. **Results:** Hypertension was reported in 6 patients (28.5%), Obesity in 5 patients (23.80%), Hypercholestremia in 7 patients (33.3%), Hypertriglicedemia indicative of steatosis in 3 (14.28%) patients, impaired glucose levels in 4 (19.0%) patients, and adverse cardiac events in 3 (14%) patients (1 MI, 2 Angina). Normal cardiac enzymes were measured in all the patients, ECG abnormality (Diastole LV function defect) was detected in 1 patient. **Conclusion:** The remarkable therapeutic benefit of cisplatin in germ cell carcinoma is temporised with the higher risk of cardiovascular morbidity posing a greater threat than the relapse of cancer itself.

Keywords: Cisplastin, Risk Factors, Biomarkers, Angina, MI

O-CR-6

THE SHIELD OF RENIN-ANGIOTENSIN SYSTEM MODULATORS AGAINST DEVELOPMENT OF DIABETIC PERIPHERAL NEUROPATHY IN T2DM

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Background: Diabetic peripheral neuropathy is one of the complications of type 2 diabetes mellitus which lowers the quality of life in diabetes mellitus patients. Very few studies have found the association between the

development and progression of diabetic peripheral neuropathy in type 2 diabetes mellitus and Angiotensin Converting Enzyme (ACE) gene I/D polymorphism. ACE is an important modulator of the Renin Angiotensin system (RAS). **Objective:** To find an association between ACE gene I/D polymorphism and Diabetic Peripheral Neuropathy (DPN). **Methods:** ACE gene I/D polymorphism was screened in 276 type2 diabetes mellitus patients with peripheral neuropathy, 496 type 2 diabetes mellitus patients without peripheral neuropathy and 331 control subjects. **Results:** The ACE gene I/D genotypes distribution were in Hardy-Weinberg equilibrium. ACE gene II genotype was significantly higher than DD genotype ($p<0.05$) in type 2 diabetes mellitus without diabetic peripheral neuropathy but no significant difference ($p=0.78$) for II genotype was found in type 2 diabetes mellitus with diabetic peripheral neuropathy. **Conclusion:** The presence of II genotype shows a protective effect against the development of peripheral neuropathy in type 2 diabetes mellitus. This suggests a role of rennin angiotensin system in modulating neuropathy in type 2 diabetes mellitus.

Keywords: Renin Angiotensin System, Angiotensin Converting Enzyme, ACE, Diabetic Peripheral Neuropathy

O-CR-7

RESPONSE OF CHEST PAIN AND DYSPNOEA TO INCREASED HEART RATE IN PATIENTS WITH CORONARY HEART DISEASE

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Background: Chest pain and dyspnoea are the two major complaints of patients with Coronary Artery Disease (CAD). The linear relationship between breathlessness and heart rate has been investigated. Since simultaneous record of chest pain and breathlessness using ETT has not been reported, this study deals with investigation of both parameters of cardiac patients complain. **Objectives:** To observe the relationship between chest pain/dyspnoea-heart rate during exertion in patients with angiographically proven CAD compared to patients having negative Exercise Tolerance Test (ETT). **Methods:** This is a cross-sectional study included 150 male patients referred for ETT at Ziauddin University Hospital, and National Institute of Cardiovascular Diseases, Karachi. Fourteen were excluded from the study as they had Myocardial Infarction. All patients performed a maximal progressive exercise on Bruce Protocol. Age, BMI, target heart rate and risk factors of CAD were noted for each patient. The resting heart rate and resting systolic BP was noted. Maximum systolic BP, maximum heart rate, total exercise time and METS were recorded at the end of exercise. The chest pain and dyspnoea score were plotted against heart rate from stage 1 of exercise to maximum achieved by the patients. **Results:** Out of 136, 51 were ETT positive and 76 were ETT negative. The patients in ETT positive group were older in age, had lesser maximal heart rate, lesser total exercise time and lesser METS than ETT negative. Out of 51 ETT positive patients, 20 had chronotropic incompetence. **Conclusion:** In patients having positive ETT and referred for angiography, the chest pain-heart rate relationship correlated well with number of vessel disease. The onset of dyspnoea was earlier in ETT positive group than in ETT negative group.

Keywords: Coronary artery disease, Chest pain, Dyspnoea, Heart rate, Exertion, Angina, Breathlessness

O-CR-8

EFFECT OF VALSALVA MANOEUVRE ON PULSE RATE AND RR INTERVAL IN DIABETIC WOMEN OF REPRODUCTIVE AGE GROUP WITH URINARY INCONTINENCE

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Background: DM is a chronic illness due to insufficient production of insulin by pancreas or body's ineffective response to the insulin produced by it, causing hyperglycaemia. In T2DM pancreas is producing insulin in sufficient amount but target cells are ineffective. Other causes of T2DM are obesity and lack of exercise. There are several complications like cardiovascular disease; peripheral vascular disease, vision loss, and peripheral neuropathy seen in long term DM. Urinary Incontinence in women is affected by number of factors which include DM, BMI and complications during delivery, recurrent urinary tract infections, chronic cough, advancing age and

smoking. **Objectives:** To observe the effect of Valsalva manoeuvre on pulse rate and RR interval in diabetic and non diabetic women with urinary incontinence. **Methods:** This was a case control study. In this study we include female diabetic patients from Out-patient Department of National Institute of Diabetes and Endocrinology, Dow University of Health Sciences, in collaboration with DOW Diagnostic research and reference laboratories (DDRRL), Karachi, Pakistan. Subjects included in this study were 210 (105 adult T2DM and 105 non-diabetic women serving as controls) between 20 to 45 years. Data was collected on a prescribed proforma. History of urinary incontinence was taken from every participant. Blood samples were collected to estimate Random Blood Sugar and HbA1c using standardised DDRRL procedures. Pulse rate and RR interval was recorded before and after Valsalva manoeuvre with the help of power lab of each participant of this study. Data was analysed with SPSS-16. **Results:** 41% of diabetic and 20% of non diabetic women had urinary incontinence (p=0.001). In diabetic women mean pulse rate was 75.18±5.92 and 74.12±5.60 with and without Valsalva manoeuvre respectively (p<0.001). On the other hand in non-diabetic women pulse rate was 75.75±6.61 and 70.76±5.28 with and without Valsalva manoeuvre respectively (p<0.001), RR interval also showed p<0.001 in both groups. Urinary incontinence and ECG changes with Valsalva are more common in women with uncontrolled diabetes and there complications also revealed positive association with duration of diabetes. **Conclusion:** T2DM affects pulse rate as well as RR interval mainly as the result of autonomic neuropathy. These long term complications can be delayed by early proper glycaemic control.

Keywords: Urinary incontinence (UI), Type 2 Diabetes Mellitus (T2DM), Body Mass Index (BMI), Waist Hip Ratio (WHR), Random Blood Sugar (RBS), Haemoglobin A1c (HbA1c)

P-CR-9

EFFECT OF ACE INHIBITORS WITH NSAIDS ON CARRAGEENAN INDUCED INFLAMMATION

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Both antihypertensive and non-steroidal anti-inflammatory drugs are frequently prescribed together since hypertension and co-existing musculoskeletal problems are two of the frequent conditions. In order to identify the anti-inflammatory response of commonly used NSAIDs when administered concurrently with selected ACE inhibitors (enalapril, captopril and lisinopril), we used the pool of rats with carrageenan induced paw inflammation. Inflammation induced by carrageenan, originally described by winter is acute, non-immune, well-researched, and highly reproducible. In our study the altered anti-inflammatory response of NSAIDs when given simultaneously with ACE inhibitors by comparing decrease in paw size (oedema). Results were expressed in % reduction in paw size for every hour and were calculated. Oedema rate and percentage reduction data was also analysed by using one way analysis of variance using SPSS. Tukey's post-hoc test was conducted to determine group means differences taking p<0.05 as significant and p<0.005 highly significant.

Keywords: ACE Inhibitors, NSAIDS, Interaction Studies

O-CR-10

HEART RATE AND QTc DURATION IN PATIENTS WITH CIRRHOSIS —A MARKER OF CIRRHOTIC CARDIOMYOPATHY?

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Objective: To assess the value of QTc prolongation and heart rate variation as a marker of cirrhotic cardiomyopathy and severity of liver disease. **Methodology:** This comparative study was conducted on patients with cirrhosis of liver at Fauji Foundation Hospital Rawalpindi from January 2009 to Sep 2009. Confirmed cases of cirrhosis fulfilling inclusion criteria were selected and allocated in group 1. An equal number of non cirrhotic patients were enrolled and included in group 2. QTc and heart rate of the two groups was calculated and comparison was made between two groups. Analysis of QTc prolongation and increase in heart rate with regard to severity of liver disease was also made. **Results:** Fifty confirmed cases of cirrhosis of liver were included in group 1 with equal number of age and sex matched non-cirrhotic patients included in group 2 as controls. The Mean±SEM of QTc in group1 and group 2 was calculated as 0.4707±0.0065 and 0.3893±0.00542 seconds respectively. The Mean±SEM of heart rate in the group 1 was 90.50±2.839 beats/min while in group 2 it was 82.85±2.207 beats/min. The mean of QTc and

heart rate in group 1 was fond to be significantly higher in group 1 as compared to group 2 with p=0.001 and p=0.0179 respectively. The mean of QTc and heart rate in subgroup 1A, 1B and 1C was not statistically significant. **Conclusion:** Means of QTc and heart rate of patients with cirrhosis of liver were found statistically high as compared to non cirrhotic controls.

Keywords: Cirrhotic cardiomyopathy, QTc, Heart rate

O-CR-11

WAIST CIRCUMFERENCE: A SIMPLE ANTHROPOMETRIC PREDICTOR OF PULMONARY FUNCTION

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Background: Height and weight are commonly used to predict pulmonary function tests (PFTs). Recently, several anthropometric indicators of visceral fat deposition and altered body composition has been shown to affect PFTs. Waist circumference (WC) is easily measured and correlates well with abdominal fat. WC may be a promising anthropometric indicator of changes in pulmonary function. **Objective:** This study aimed to compare the predictability of anthropometric measurements on pulmonary function in healthy adults. **Methods:** Anthropometric indicators including height, weight and WC were measured. Body mass index (BMI) was calculated as Kg/m^2. Spirometry was performed on 200 apparently healthy subjects with a BMI <35 Kg/m^2. Regression analyses were done to analyse predictability of anthropometric measures on PFTs. Results: Although the mean values remained within the normal range, there were significant differences in PFTs based on WC categories. Percent predicted values of Forced vital capacity (FVC%) and forced vital capacity in first second (FEV_1%) were significantly lower in subjects with higher WC. There was significant linear relationship between obesity and PFTs. FVC% and FEV_1% were negatively associated with WC. WC was the most significant predictor of FVC% (p=0.007) and FEV_1% (p=0.004). On average, a 1 Cm increase in WC was associated with 0.55% reduction in FVC% and a 0.58% reduction in FEV_1%. **Conclusion:** WC is a better proxy for pulmonary dysfunction in over-weight and mildly obese subjects.

Keywords: Obesity, waist circumference, pulmonary function tests, Body Mass Index

O-CR-12

SURFACTANT PROTEIN D IS A BIOMARKER FOR COPD EXACERBATIONS

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Background: Surfactant protein D is produced by type II alveolar cells. Alveolar damage associated with chronic obstructive pulmonary disease exacerbations increases the 'leakage' of SP-D from pulmonary compartment into the systemic circulation raising its serum levels. This makes it an ideal biomarker for diagnosing COPD exacerbations. **Methods**: Serum SP-D levels were recorded for 151 subjects (88 controls and 58 cases). Informed consent was obtained from all subjects. Lung functions were recorded with help of an electronic spirometer. Controls were asymptomatic males with normal spirometry. Cases were subjects with history suggestion of COPD and post bronchodilator $FEV_1/FVC<70\%$. Exacerbations were diagnosed when there was an increase in any or all of the three major symptoms (dyspnoea, increased sputum volume and sputum colour) from day to day routine. SP-D levels were measured using an ELISA based kit. Samples were run in duplicate. **Results:** Serum levels were higher in COPD exacerbation patients as compared to stable COPD and controls (p=0.001). Multiple linear regression analysis showed that the risk factors for COPD exacerbations included advanced age (B=0.066, odds ratio=1.054, p=0.011), serum SP-D levels (B=0.010, p=0.004, odds ratio=1.010) and low FEV_1% predicted (B= -0.035, p=0.002, odds ratio=0.966). Receiver Operating Curve analysis revealed that a cut-off value of 130 ηg/ml can be used to diagnose COPD exacerbations (AUC=71.85% at $p<0.001$) **Conclusion:** Serum SP-D levels can be used to diagnose COPD exacerbations.

Keywords: Chronic obstructive Pulmonary Disease, exacerbations, Surfactant protein D

(Some of these findings have been published, PMID:20075511)

O-End-01

EVALUATION OF INFLAMMATORY MARKERS IN PAKISTANI TYPE 2 DIABETES MELLITUS PATIENTS

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Aim: To compare the serum levels of inflammatory markers in type 2 Diabetes Mellitus Pakistani patients with healthy controls. **Methods:** In this case-control study, 110 (72 type 2 diabetic and 38 healthy controls) subjects were included. Inflammatory markers measured included ESR, TLC, DLC, hs-CRP, IL-6 and TNF-alpha. Statistical analysis was done on SPSS-17. Levels of these markers and their association with age of the subject, duration of DM, insulin resistance and dyslipidemia were determined. **Results:** A total of 110 (72 diabetic and 38 healthy controls) subjects were studied. Among 72 type 2 diabetic patients, 40 were males and 32 were females. In 38 healthy controls, 27 were males and 11 were females. The levels of all inflammatory markers were higher in type 2 DM patients as compared to healthy controls (p<0.001). The levels of inflammatory markers increase with age (p<0.001) and duration of the disease (p<0.001). Inflammatory markers levels are also significantly associated with insulin resistance (p<0.001) and dyslipidemia (p<0.001). **Conclusion:** Inflammatory markers are higher in type 2 diabetes mellitus patients as compared to healthy persons suggesting their role in pathogenesis of the disease.

Keywords: T2DM, Inflammatory Markers, insulin resistance

O-End-02

BONE MINERAL DENSITY AND FRACTURE RISK ASSESSMENT IN TYPE II DIABETIC PATIENTS

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Background: Diabetes mellitus is the most common health problem worldwide and is estimated to be 6 - 8% of the overall population world over. A change in bone health is one of the many complications of this metabolic disorder. Most of the studies reported reduced Bone Mineral Density (BMD) in Type 1 diabetes with increase risk of osteoporotic fractures. However, there have been conflicting results on the effects of type II diabetes on BMD and incidence of osteoporotic fracture due to the pathogenic complexity of the condition. **Objectives:** To assess BMD and its association with fracture risk in elderly type 2 diabetic patients by using Fracture Risk Assessment Tool as a standard predictor of fracture risk. **Methodology:** A case control study was conducted on a purposive sample of 252 type II diabetic and non diabetic patients from different health care centers of Karachi. The participants were asked to fill a detailed questionnaire about their personal, present and past medical history and risk factors of osteoporosis were assessed. Type II diabetics with a history of at least 3 years were included in the study. Patients with history of drug and hormone intake that affects bone metabolism or any disease or surgery involving any joint; cancer and renal failure were excluded from the study. BMD measurements were done by Bone Densitometer (SONOST 3000). BMD was calculated by combining BUA and SOS. Calcaneous bone of right heel was used for measurement and T scores were used to evaluate BMD and risk of osteoporosis and Osteopenia. **Results:** The mean SOS and BUA in diabetic population was found to be 1509 (±21.12) and 81.23 (±16.725) while in non diabetic was 1414±30.5 and 71.88±13.73 respectively. 3.6% of the respondents had a past history of smoking while 93.4% never smoked in life. 30.5% had a family history of osteoporosis and 69.5% didn't have a family history of osteoporosis. The mean T score in diabetic patients was -1.46±0.95 while in non diabetic patients was -4.7±0.7. The major osteoporotic fracture risk and hip fracture risk was 9.3±7.26% and 7.1±5.2% in diabetics whereas 2.6±0.5% and 1.3±0.4% in non diabetic patients respectively. A weak negative correlation (-0.32) has been observed between BMD and Hip Fracture risk among diabetic patients. **Conclusion:** Type 2 diabetic patients have increased risk for hip fractures despite of higher BMD.

Keywords: Type II diabetes, BMD, Fracture risk assessment, Osteopenia, Osteoporosis

O-End-03

ASSOCIATION OF BMI WITH REPRODUCTIVE HORMONE IN INFERTILE MALE

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Background: Prevalence of obesity is alarmingly on the rise both worldwide and in Pakistan. Infertility and obesity are among the most common problems interlinked with each other. Excess body weight is not only associated with different chronic diseases like osteoarthritis, gallbladder diseases, type 2 Diabetes Mellitus, hypertension, cardiovascular diseases and other metabolic disorders but also has been shown to increase the risk of reproductive disorders including infertility. **Objectives:** To ascertain association of raised BMI with reproductive hormone levels among infertile males, and to evaluate the role of serum Follicle Stimulating Hormone (FSH), Prolactin (PRL) and testosterone (T) as a contributory factor towards male infertility and to investigate the role of abnormal hormone production (T, FSH and PRL) in obese infertile male. **Methodology:** A cross sectional study was conducted from April 2010 to March 2011. Sample size was 300 males (147 infertile and 153 healthy fertile control subjects) aged 30 and 60 years, selected from the Jinnah Postgraduate Medical Center (JPMC), Aziz Medical Centre and Abbasi Shaheed Hospital, Karachi. All the subjects were grouped to BMI criteria (Asian pacific region for WHO).They were selected by purposive sampling after a detailed medical history and physical examination. Semen analysis was done and blood samples were collected for serum T, FSH and PRL levels. Data was analyzed via SPSS 16.0 by using Analysis of Variances (ANOVA) and independent t test to compare the means and to observe sensitivity of tests and to evaluate the significant association with in the group. **Results:** A significant negative correlation between serum PRL and sperm count was observed. A strong positive correlation between FSH and BMI was observed and negative correlation existed between T and BMI, where as PRL has no significant association with BMI. Raised BMI appear to have an association with male infertility with the reduction in T levels and alteration in FSH level. **Conclusion:** Obesity is confirmed as risk factor for male infertility in local population.

Keywords: BMI, Male Infertility, T, FSH, PRL, Azoospermia, Oligospermia

O-End-04

ASSOCIATION OF STRESS AND THE ONSET OF TYPE 2 DIABETES

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Background: Thomas Willis wrote in seventeenth century that sadness and long sorrows cause diabetes1. Now it is well accepted that psychological reaction to stressors of defeatism or helplessness leads to various endocrine abnormalities that antagonise the action of insulin. Thus, high stress levels can trigger the onset of diabetes. This study evaluated the relationship between stress and onset of type 2 diabetes. **Methods:** A retrospective cross-sectional study was conducted on 339 patients with Type II Diabetes, within one year of onset of the disease, presenting at National Institute of Diabetes and Endocrinology, Dow University of Health Sciences, Karachi between December 1, 2010 and May 31, 2011. Data was collected using a validated questionnaire, Holmes Rahe Life Stress inventory containing 51 stressful events. All the data was sorted and analysed on SPSS-16. **Results:** Out of 339 patients, 68.73% (n=233) individuals reported with high levels of stress. Males (61.8%, n=144/233) were found to be more frequently associated to high stress levels as compared to females (38.2%, n=89/233). Majority of the individuals belonged to the age group 40–49 years (51.5%, n=120/233), while a significant fraction had positive family history of diabetes (n=188/233, 80.6%). **Conclusion:** A significant number of our patients were in a state of high stress before they had diabetes. This shows a positive correlation between the onset of diabetes and the level of stress. Stress management will play a very important role in decreasing the incidence of diabetes.

Keywords: Onset, Type 2 Diabetes Mellitus, stress

O-End-05

LIPID PROFILE IN NON-OBESE PATIENTS WITH POLYCYSTIC OVARIAN SYNDROME

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Background: Polycystic Ovarian Syndrome is one of the leading causes of infertility, affecting 6–8% of women of childbearing age worldwide. The underlying cause is not well understood. Women with Polycystic Ovarian Syndrome (PCOS) appear at increased cardiovascular risk due to dyslipidemia. **Objectives:** Study was designed to investigate the serum lipid profile in group of women with Polycystic Ovarian Syndrome without obesity. **Methods:** Thirty five non-obese girls age range 18–25 years with BMI<25 were included in the study. Ten age matched girls with no history of any disease were taken as controls. Fasting concentrations of serum cholesterol, triglycerides, high density lipoproteins (HDL), low density lipoproteins (LDL), and very low density lipoproteins (VLDL) were estimated by auto analyzers using standard kits. **Results:** A non-significant increased level of cholesterol, triglycerides and their lipoproteins LDL and VLDL was observed in non-obese girls as compared to their controls. **Conclusions:** Changes in serum lipid profile may be a risk factor for cardiovascular disorder. They may play an important role in the development of cardiovascular diseases in non-obese patients with PCOS. Further research on large number of patients so needed to reach a better conclusion.
Keywords: Lipid profile, Obese, Polycystic Ovarian Syndrome, HDL, LDL, VLDL, Cholesterol

O-End-06

EFFECTS OF LACTATION ON PLASMA METASTIN LEVELS IN WOMEN

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Background: Lactation results in negative energy balance and suppression of hypothalamic-pituitary-gonadal axis. Lactation decreases GnRH pulsatility by altering stimulatory tone to the GnRH neurons. Recently, decreased kiss1 expression in the hypothalamus has been related to lactational suppression of GnRH release in rodents. However, no data are available on the peripheral levels of metastin during lactation in any species. **Objective:** The present study therefore was carried out to measure metastin (the endogenous product of kiss1 gene) in peripheral circulation during lactation in human females. **Methods:** Blood samples were collected from healthy lactating women of similar ages which were divided into four lactational stages as puerperium (G1; 1st day of foetal birth to day 40), early lactational stage (G2; day 41 to 6th month post-delivery), mid lactational stage (G3; 7 to 12th month post-delivery) and late lactational stage (G4; 13 to 18th month post-delivery) (n=10/stage). A control group consisted of age and body mass index BMI matched healthy non-lactating women (n=8). Plasma was extracted and quantitative measurements of metastin in extracted samples were done by using a commercial enzyme immunoassay (EIA). **Results:** The metastin-like IR was detectable in all groups. Plasma metastin-like IR was reduced with onset of lactation with minimal levels being observed in G3 group. G3 metastin-like IR was significantly low ($P< 0.05$) as compared to levels in non-lactating control. The levels were also comparatively lower in early and late stages of lactation. However, differences were not significant when compared to controls. Plasma metastin-like IR appeared to correlate positively with BMI in G3 subjects. **Conclusion:** The present study demonstrated that peripheral metastin-like immunoreactivity is reduced during lactation in women, suggesting a possible involvement of circulating metastin in contribution to suppression of reproductive axis during lactation.
Keywords: kisspeptin, GPR54, PRL, GnRH

O-End-07

ROLE OF ENDOCRINE PROFILE IN DEVELOPING POLYCYSTIC OVARY SYNDROME

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Background: Polycystic ovary syndrome (PCOS) is the most common endocrinopathy in women and the most common cause of anovulatory infertility. It affects four to 12% women of reproductive age. **Objectives:** Study was

designed to investigate the endocrine profile including serum FSH, LH, oestrogen, progesterone, prolactin and insulin level in a group of women with polycystic ovary syndrome. Methods: Fifty women age range 35–48 years were included in the study. Twenty age matched women with no history of any disease were considered as controls. Level of insulin FSH, LH, oestrogen, progesterone and prolactin were estimated by ELISA reader using standard kits. **Results:** A significantly increased level of insulin, LH, oestrogen, progesterone and prolactin was observed in women with PCOS as compared to their controls. On the other hand the level of FSH and progesterone was decreased in PCOS women as compared to controls. **Conclusions:** An association of abnormal gonadotropin secretion with PCOS is observed. Hyperinsulinemia plays a role in steroidogenesis in PCOS. However further research on large number of patient is needed to reach a better conclusion.
Keywords: Polycystic Ovarian Syndrome, Insulin, Gonadotropins, Infertility

O-End-08

METABOLIC SYNDROME AND THYROID FUNCTION IN THE EUTHYROID STATE

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Background: Metabolic Syndrome (MS) is associated with hypertension and increased risk of diabetes mellitus. Recently, a few studies have suggested that thyroid function in the reference range may be linked to components of MS, but the issue remains unresolved. Therefore, we aimed to determine the relationship between free thyroxin (T4) and components of MS in euthyroid Pakistani population. **Methods:** This analytical, cross-sectional study included 100 subjects with MS, with an age range of 45–55 years. After taking history and conducting clinical examination, fasting blood was analyzed for glucose, triglycerides (TG), high density lipoprotein-cholesterol (HDL-C) (enzymatic methods) along with thyroid-stimulating hormone (TSH) and free T4 (chemiluminescence). Serum TG/HDL-C ratio, a surrogate marker of insulin resistance, was also determined. **Results:** Free T4 correlated significantly and positively with systolic and diastolic BP (Spearman's rho= 0.308, p=0.002 and Spearman's rho= 0.340, p=0.001 respectively). Free T4 also correlated positively with glucose (p=0.009) but negatively with TG/HDL-C ratio (p=0.022). There was no significant correlation between free T4 and waist circumference. **Conclusion:** High-normal free T4 is associated with raised BP and raised glucose. Individuals with high-normal thyroid function may be prone to developing hypertension and raised blood glucose but decreased insulin resistance.
Keywords: Metabolic Syndrome, Euthyroid, Thyroxin, TSH, Hypertension, Diabetes

O-End-09

PREVALENCE OF THYROID AUTOIMMUNITY IN HEALTHY SUBJECTS

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Background: Development of thyroid autoimmunity (presence of thyroid auto- antibodies) is one of the side effects of salt iodization in previously iodine deficient populations. **Objective:** To know prevalence of serum thyroid peroxidase antibodies (TPO-Ab) and its determinants in healthy subjects (Normal serum FT4 levels: 11.0–22.0 ρmol/L and TSH values between 0.3–4.0 mIU/L) residing in Lahore city. **Methods:** A total of 170 subjects were selected for this study (119 females, 51 males). Their mean age was 32.2±9.2 years (range: 15–50 year). Serum thyroid related hormones and TPO-Ab were measured by radioimmunoassay (RIA) using commercial kits. Cut-off value for positive TPO-Ab was >20.0 IU/ml. **Results:** Overall 15 (8.8%) subjects were found positive for TPO-Ab. It was observed that 12 (10.1%) female and 3 (5.9%) male were positive for TPO-Ab titre. However, the difference in presence of TPO-Ab positivity between female and male subjects was not statistically significant (p=0.67). Subjects with serum TSH level >2.0 mIU/L (n=60), as compared to rest of the sample (n=110) have significantly increased incidence of TPO-Ab (16.7% vs 4.5%, p<0.05). Moreover, it was found that incidence of TPO-Ab positivity do not significantly increased with advancement of patient age. Thus among healthy subjects those with TSH >2.0 mIU/L are at increased risk of having TPO-Ab titre. **Conclusion:** Healthy subjects with TSH >2.0 mIU/L are at increased risk of having euthyroid autoimmune thyroiditis. Periodic monitoring of such patients is recommended due to risk of future thyroid dysfunctions.

Keywords: Thyroid gland, autoimmunity, thyroid autoantibodies, Iodised salt

O-End-10

URINARY EXCRETION PATTERNS OF ENDOGENOUSLY PRODUCED ALCOHOLS IN TYPE 2 (NIDDM) DIABETES MELLITUS

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Background: The organic volatile constituents of biological fluids contain clinically useful diagnostic information for the recognition of metabolic disorders in chronic diabetics. **Objectives:** Study was designed to find out the patterns for volatile metabolites associated with chronic diabetes. **Methods:** Urinary excretion pattern of endogenously produced alcohol, such as ethanol, was evaluated in 40 type 2 diabetic patients. Ten sex and age matched subjects with no history of any disease were considered as controls. Urinary alcohol excretion was determined by gas-chromatography. **Results:** In the type 2 diabetic patients, the urinary excretion of ethanol was significantly elevated ($p<0.001$) as compared with the control subjects. **Conclusion:** Excess of glucose may be metabolised in the presence of yeast and certain bacteria into ethanol which may worsen the condition. However, urinary excretion patterns of different endogenously produced alcohols in diabetes mellitus have to be further evaluated.

Keywords: NIDDM, T2DM, volatile metabolites, urinary excretion

O-Rep-01

PREVALENCE OF DYSMENORRHOEA IN ADOLESCENT GIRLS

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Background: Menstrual irregularities are prevalent in all age groups, but the data on adolescent is scanty. Number of studies has found the correlation between BMI and menstrual irregularities. The common menstrual problems are polymenorrhoea, oligomenorrhea, amenorrhea, polymenorrhagia, metrorrhagia and dysmenorrhoea. Dysmenorrhoea is the problem related with painful menstruation, and this has been described as the most prevalent menstrual problem. Available data demonstrates that dysmenorrhoeal problems increase with age, however, the adolescent age groups is still an under studied subject. Recently, the study on medical students in India showed dysmenorrhoea as the most prevalent gynaecological problems. However, no study is carried out in Pakistan on adolescent age group. **Methods:** In this cross sectional study, 203 adolescent girls aged between 18 to 20 years were included. These girls were selected from first and second year university students. The students other than first and second year and the students who are on medication were excluded from the study. The data was collected through structured questionnaire. Height and weight were measured and the body mass index (BMI) was computed. **Results:** The overall prevalence of dysmenorrhoea was 79.31%, whereas 21.69% did not have dysmenorrhoea. There are three types of dysmenorrhoea, mild, moderate and severe. The prevalence of mild dysmenorrhoeal was 13.79%, moderate dysmenorrhoea was 34.48%, and severe dysmenorrhoea was 31.03%. We could not find any association of BMI with dysmenorrhoea. **Conclusion:** There is high prevalence of dysmenorrhoea in adolescent girls.

Keywords: Dysmenorrhoea, Adolescent, BMI

O-Rep-02

GENETIC BASIS OF PRECOCIOUS PUBERTY IN BOYS

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Background: Puberty represents the process of physical change towards adulthood leading to the capacity to reproduce. Certain disorders disrupt the hypothalamic-pituitary adrenal (HPA) axis and may result in precocious puberty in which signs of puberty appear before the age of 9 years in boys. Genes involved in production of sex steroids, having effect on body development is selected including the gene CYP21 and ADRβ3 gene. **Objective:** The present investigation is designed to determine the relationship between the SNPs in CYP21 and ADRβ3 gene with

precocious puberty. **Methods:** Five ml blood has been taken from patients after informed consent. DNA was extracted from the blood samples of patients by organic method. SNP specific primers of CYP21 and ADRβ3 genes have been designed. PCR-RFLP method is used to find polymorphism in two genes in two groups. Suitable statistical packages as per requirement of genetic studies will be used for data analysis. **Results:** The results will be published in peer reviewed journal. **Conclusion:** This study reveals genetic makeup of precocious puberty in Pakistani boys.
Keywords: Precocious puberty, Adrenal sex steroids, Hypothalamic-pituitary Adrenal Axis

O-Rep-03

MOLECULAR BASIS OF DELAYED PUBERTY IN BOYS

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Background: Puberty is the process of physical changes by which a child's body becomes an adult body capable of reproduction. Certain disorders disrupt the hypothalamic-pituitary gonadal axis (HPG) and may result in delayed puberty in which no signs of puberty appear till the age of 14 years in boys. Major cause of delayed puberty is hypogonadotropic hypogonadism in which low concentration of leutinising hormone (LH), follicle stimulating hormone (FSH) and Testosterone (T) is produce. Many mutations were found in genes involves in puberty. Most mutations were observed in GnRHR and GPR54 genes. Both genes play important role in regulation of gonadotropic axis and in onset of puberty. Mutations in both genes cause hypogonadotropic hypogonadism. **Objective:** The aim of this study is to analyze the mutations in GnRHR and GPR54 genes in hypogonadotropic hypogonadism patients in Pakistan. **Methods:** Five ml blood has been taken from hypogonadotropic hypogonadism patients after informed consent. DNA was extracted from the blood samples of patients by organic method. Exon plus splice site specific primers of the GnRHR and GPR54 have been designed. Mutations are screened by single-stranded conformation polymorphism (SSCP). Mutations will be further confirmed by direct sequencing. **Results:** The results will be published in peer reviewed journal. **Conclusion:** This study reveals genetic makeup of delayed puberty in Pakistani boys.
Keywords: Delayed puberty, Hypogonadotropic Hypogonadism, Hypothalamic-Pituitary Gonadal (HPG) axis

O-Rep-04

CLINICAL CHARACTERISTICS OF POLYCYSTIC OVARIAN SYNDROME IN PAKISTANI POPULATION —A PROSPECTIVE STUDY

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Background: Polycystic Ovarian Syndrome (PCOS) is a disease of public health importance with a number of long term significant health risks. A comprehensive approach to the evaluation and treatment of affected women is therefore warranted as early diagnosis and intervention could prevent or at least delay many of these maladie later in life. Currently PCOS diagnosis is mainly based on clinical presentations; however various studies have indicated regional variations in clinical presentation. **Objective:** To evaluate the frequency of different clinical features of PCOS among Pakistani population. **Methods:** This hospital based cross sectional study was done at IBMS, DUHS Karachi in collaboration with Gynae/Infertility Clinics of two tertiary referral hospitals in Karachi; during October 2010 to Feb 2011. A total of 163 PCOS women of reproductive age (18–40 years) fulfilling revised Rotterdam 2003 criteria were studied. The data recorded include current age, age at menarche, menstrual irregularities, presence of hirsuitism, acne, infertility, familial nature, blood pressure, BMI, waist- hip ratio. Hormonal assay for gonadotropin were performed using chemiluminescent immunoassay **Results:** The mean age of presentation of PCOS among local population was 24.88±5 yrs, the average year of menarche was 13 years. Menstrual irregularities (99%) and acne (88%) were the commonest presentation followed hirsuitism (71%) and obesity (69%). The incidence of infertility among married PCOS was 65%. About 3.1% of the patients had a family member diagnosed with PCOS and 23% had a family member with a history of menstrual irregularities. Positive family history of infertility was obtained in 17.5% of patients only. **Conclusion:** Pakistani population of PCOS have almost similar clinical presentation like that of western population; however, in comparison with western population acne is more common marker of androgen excess than hirsuitism.
Keywords: PCOS, Menarche, BMI, Acne, hirsuitism

O-Rep-05

PREMENSTRUAL SYNDROME SYMPTOMS AND FREQUENCY AMONG UNIVERSITY STUDENTS IN KARACHI

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Objective: To investigate the frequency of premenstrual syndrome symptoms (PMS) and cycle symptoms in PMS patients. **Materials and Method:** The study was carried out on 112 young females. The PMS and menstrual cycle data of individuals were collected from prism calendar and symptom-thermal chart for three consecutive cycles. Based on the observations, all subjects were grouped as control (44) and PMS patients (68). **Results:** The frequency of PMS in studied group was 60%. The most frequent symptoms include irritability (71.05%), fatigue (86.84%), bowel constipation (36.76%) and loose bowel (17.65%), appetite up (42.65%), appetite down (51.47%). Symptoms like breast tenderness, abdominal blotting, aggressiveness, depression, insomnia, labile mood, and anger were 67.65%, 47.06, 29.41%, 13.24%, 14.71%, 5.88%, and 7.35%, respectively. **Conclusion:** The frequency of PMS symptoms seems to be high in the group. The present study identified a pattern not similar to the typical PMS pattern of the Western populations. The typical socio-cultural habitat of Pakistani population, may have led to the evolution of a different pattern of PMS.

Keywords: Premenstrual syndrome, menstrual cycle, cycle irregularities

O-Gene-01

ASSOCIATION OF rs9939609 VARIANT OF FTO GENE WITH OBESITY

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Background: Obesity is a multifactorial and heterogeneous condition due to complex interaction of genetic and environmental factors. A common variant rs9939609 in the FTO (fat, mass and obesity) gene has been associated with obesity in many European studies. This common variant has been reported to predispose to diabetes through an effect on BMI. It has been associated with obesity and diabetes risk factors including fasting blood glucose (FBG), insulin, leptin and triglycerides in different studies, although the results of different studies are controversial depending on the ethnic differences and the population studied. **Objective:** To determine the association of rs9939609 variant of FTO gene with obesity in our local population. **Methods**: A total of 369 subjects, 239 obese (BMI≥30 Kg/m^2) and 130 non-obese (BMI < 25 Kg/m^2) of both sexes, were included in the study with ages ranging from 5–45 yrs. BMI, waist and hip circumference and WHR were measured using standard procedures. FBG, serum insulin, leptin and leptin receptor levels were determined using ELISA kits. Genomic DNA was extracted from whole blood. Genotyping of the rs9939609 polymorphism of FTO gene was carried out by Polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). Allele frequencies were determined by gene counting method. Hardy-Weinberg test was applied to determine whether the genotypes are in equilibrium. Obese and normal weight subjects were compared for genotype and allele distribution and their association with obesity using Chi-Square test. Odds ratio was calculated to determine the risk of obesity. GLM multivariate analysis was applied to determine the association of FTO SNP rs9939609 with anthropometric parameters and metabolic traits. ANOVA followed by Tukey's post-hoc test was applied to determine the significant differences if any between anthropometric and metabolic parameters across the genotypes. **Results:** Significant differences were observed in distribution of genotypes and allele frequencies between obese and normal weight subject (χ^2=4.66, p=0.03 and χ^2=4.13, p=0.04). Obesity risk A-allele associated with 1.52 times increased risk of obesity (95% CI=1.01-2.29). Stratification of data according to sex revealed significant association (χ^2=7.71, p=0.005) of rs9939609 variant with obesity in females not in males. This SNP associated with BW, BMI, waist and hip circumference, FBG and leptin levels (p<0.05). Carriers of A-allele had significantly higher BW, BMI, waist and hip circumference, FBG and plasma leptin levels (p<0.05). **Conclusion:** The FTO rs9939609 variant confers the risk of obesity in female subjects but not in males in our population.

Keywords: Obesity, rs9939609, BMI

O-Gene-02

49, XXXXY SYNDROME: A CASE REPORT

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Background: 49,XXXXY Syndrome is a rare aneuploidic sex chromosomal abnormality; its frequency is approximately 1 out of in 85,000 to 100,000 males. It was originally described by Fraccaro and colleagues in 1960. Over 100 such cases have been reported so far in the world. **Objective:** The case we report here, to the best of our knowledge, is the first such case reported from Pakistan. **Case Report:** A 12 year old boy was presented with classical features of the mental age of six years old child, normal Apgar score at birth, moderately low IQ, receptive expressive communication and behavioural problems. History of delayed milestones, fits leading to collapse, hypertelorism, short neck, narrow shoulder, round face in infancy, flat foot, moderately hyper extensible joints, hypotonia, generalised muscle wasting, hypogonadism, both testes were smaller around 60% (3.2×1.9 Cm) of normal size, i.e., (5×3 Cm) and penis was like 5 years old child but ambiguity of genitalia was not observed in our case as reported in other more severely affected cases. Blood testosterone level was moderately lower, i.e., 328.4 ηg/dl, but gynaecomastia or ambiguity was not observed in genitalia. Periodic fits were reported. No history of consanguinity, and heredity was observed. The case was referred to Guy's Hospital, London previously, and they reported that there are two alleles at the FRAXA locus and this is consistent with the presence of more than one X chromosomes. Karyotyping showed the constitution to be 49,XXXXY in all somatic cells. A 49,XXXXY karyotype in all cells was demonstrated from chromosomal preparation of fresh blood sample; there was no evidence of mosiacism. The three extra chromosomes were shown to be X chromosomes. **Conclusion:** The diagnosis of 49,XXXXY syndrome is usually ascertained either postnatally or prenatally by the association of mental retardation, hypogenitalism and other malformations, especially involving the heart and skeletal system. After 12–13 weeks of gestation facial dysmorphisms and hypospadias can be detected by expert sinologist, through amniocentesis karyotyping, or chronic villous sampling can confirm such abnormality antenataly.
Keywords: 49,XXXY Syndrome, Sex Chromosome, Aneuploidy

O-Gene-03

DECIPHERING THE GENETICS OF CONGENITAL SCOLIOSIS WITH MOLECULAR BIOLOGY AND COMPUTATIONAL TOOL KIT: A FAMILY BASED STUDY

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Background: Scoliosis is a descriptive term and not a diagnosis. Scoliosis is a 3-dimensional deformity and is defined as a lateral spinal curvature of 10° or more. It is a lifetime, probably systemic condition of unknown cause, resulting in a spinal curve or curves and appears in different forms with some of the prominent features like uneven legs, uneven waist, rib cage, shoulders and the whole body bends to one side in extreme cases. Scoliosis is a multi factorial complex disease. Scoliosis is more common in females. The scoliosis may be structural or nonstructural. Cases with unknown cause are termed as 'idiopathic', meaning 'of undetermined cause'. Idiopathic scoliosis is typically called 'infantile' in children 0–3 years old, 'juvenile' in children 4–10 years old, 'adolescent' in adolescents 11–18 years old, and 'adult' in patients over 18 years old. Conditions known to cause spinal deformity are congenital spinal column abnormalities, neurologic disorders, genetic conditions, and many other causes. Usually scoliosis is seen associated with many other anomalies. There are many genes involved but the exact cause is unknown. **Objectives:** The purpose of this study is to understand the genetic causes of Congenital Scoliosis by using Molecular Biology and Bioinformatics tools. **Methods:** Multi-generation family affected from Congenital Scoliosis was ascertained after informed consent from Rural Islamabad. Five ml blood sample was drawn from normal and affected individuals of the families. DNA was extracted using standard organic methods. Eleven known loci for Congenital Scoliosis were selected. All loci have been amplified through PCR using loci specific microsatellite markers. The PCR products are run on PAGE for linkage analysis. Then computational approaches to disease-gene association was attempted to identify the most likely disease gene candidate for further analysis. Existing computational methods analyze gene structure and sequence, functional annotation of candidate genes, characteristics of known disease genes, gene regulatory networks and protein-protein interactions. **Results:** All the

11 loci were excluded on the basis of null linkage to the Congenital Scoliosis disease. Bioinformatics approach with clinical and phenotypic data for the disease is being recruited to find the possible gene involved. **Conclusion:** The Molecular Biology and Bioinformatics amalgam will help to find the genetic cause of Congenital Scoliosis in this family. This effort will contribute data on inherited disorders in international genome consortium.
Keywords: Congenital Scoliosis, Spinal Curvature, Bioinformatics etc.

O-Gene-04

THE BLACK FACE OF TP53 IN PROSTATE CANCER

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Background: Prostate cancer, one of the most common male malignancies throughout the world, incidences are being significantly increasing in most of the developed countries due to the adaptation of westernised diet and population aging. TP53 is the main culprit in approximately half of the cancers including prostate cancer. **Objectives:** The aim of this project was to explore the diversity of TP53 gene alterations associated with prostate cancer in Pakistani population both at molecular and computational levels. **Methods:** Blood samples were obtained with informed consent from 60 prostate cancer patients with age groups above 40 years. Genomic DNA was extracted from all the samples, amplified for exons 2–11 and were analysed for genetic alterations through PCR-SSCP. The exons with band shifts on SSCP were sequenced analysed to confirm the nature of mutation. Furthermore, the mutations were analyzed through different bioinformatics techniques to study their impact on the protein structure and interactions. **Results:** Different mutations were observed in the studied samples which were of diverse nature in the population. It was also observed that, all the recorded mutations caused different structural changes in TP53 product both at 2D and 3D level which changed its respective physiochemical properties and thus its interactions in the protein-protein interaction network. **Conclusion:** TP53 mutations participate in the progression of human prostate adenocarcinoma and there is diversity in TP53 mutations in the Pakistani population which results in the instability of the gene product.
Keywords: TP53, prostate cancer, mutation, SSCP

O-Gene-05

THE SIGNATURES OF COMMON SNP IN FTO GENE: RELATIONSHIP TO RISK OF METABOLIC DISORDER OBESITY

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Background: Metabolic syndrome has become a challenge for the developed and developing societies of the world. Though environmental imbalances trigger the metabolic disturbances; the focus on genetic players has shown discrete associations with the metabolic disorders like diabetes and obesity. Genome-wide association studies for metabolic disorders recognized fat mass and obesity associated (FTO) gene as a locus granting augmented risk for obesity in populations with European ancestry. However the association of FTO gene with obesity and related metabolic disorders has not yet been established for Pakistani population. **Objective:** The aim of our study is to find the association of single nucleotide polymorphism (SNP) rs9939609A/T of FTO gene with obesity in Pakistani population. **Methods:** Blood samples of 462; 211 obese (BMI>30) and 251 (BMI=26–30) overweight individuals were collected with informed consent from primary care hospitals in Islamabad. Four hundred and two (402) individuals with normal BMI (<25) were also ascertained with informed consent as controls. DNA was extracted using organic method. TETRA ARMS PCR to screen rs9939609 A/T SNP in FTO gene using the SNP specific primers was done for all individuals. The results were statistically analysed using SPSS-14. **Results:** The rs9939609 genotype distribution was in Hardy-Weinberg equilibrium. None of the genotype was found to be associated significantly in our study population. **Conclusion:** FTO polymorphism at rs9939609 A/T is not associated with obesity in Pakistani population.
Keywords: Fat mass and obesity associated gene (FTO), TETRA ARMS PCR, Metabolic Syndrome

P-Gene-06

INSULIN RECEPTOR SUBSTRATE-2 IN NORMAL PAKISTANI SUBJECTS

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Background: Chronic hepatitis C is one of the most common diseases in third world countries including Pakistan. Globally about one hundred and eighty million individuals have become victims of hepatitis C virus infection. Chronic hepatitis C and its complications are becoming a huge burden on the health care system and its budget. Hepatitis C caused by hepacivirus, which has the ability to resist the environmental insults, is the main cause of chronic liver disease. Insulin resistance is one of the complications of chronic hepatitis C and it may result in type II diabetes mellitus. A correlation between chronic hepatitis C and insulin resistance has been established in the adult population. **Objective:** Keeping in view the importance of this pathological relationship, expression of Insulin Receptor Substrate 2(IRS-2) was monitored in normal individuals. **Methods:** Primers were first optimised using sample from normal individuals and then the IRS-2 expression was monitored in the normal subjects. **Results:** They were all found positive for IRS-2 expression. **Conclusion:** IRS-2 is expressed in normal individuals but it needs to be determined whether it is also expressed in chronic HCV infected patients. This will help in establishing a link between hepatitis C infection, insulin resistance and its complications.
Keywords: IRS-2 (Insulin Receptor Substrate 2), insulin resistance, chronic hepatitis C

O-Gene-07

GENETIC ANALYSIS OF BRCA1 GENE IN HUMAN MALE AND FEMALE BREAST CANCER

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Background: In Asian countries, Pakistan has the highest rate of breast cancer, accounting for 34.6% of all female cancers. Its incidence in Pakistan is 2.5 times higher than in the neighbouring countries. Many factors like environment, life style and genes work together to enhance the probability of developing breast cancer. Germline alterations of BRCA1 and BRCA2 genes confer the highest risk and pentrance for breast cancer. Females with mutations in BRCA1 or BRCA2 genes have more than three times the risk of breast cancer development. **Objective:** The aim of the current study was to explore the diversity of BRCA1 gene alterations associated with breast cancer in Pakistani population both at molecular and computational levels. **Methods:** Blood samples were obtained with informed consent from 50 breast cancer patients. Genomic DNA was extracted from all the samples, amplified in exons specific manner and were analysed for genetic mutations through single strand confirmation polymorphism. The exons with mutations were sequenced and analysed to confirm the nature of mutation. These mutations were analysed through different bioinformatics techniques to study the impact on the protein structure and its interactions. **Results:** Different mutations were observed in the studied samples which were of diverse nature in the population. It was also observed that, all the recorded mutations caused different structural changes in BRCA1 gene which changed its respective physiochemical properties and thus its interactions. **Conclusion:** BRCA1 mutations participate in the progression of human breast cancer. There is diversity in BRCA1 gene mutations in Pakistani population which results in instability of the gene product.
Keywords: BRCA1, Breast cancer, mutation, SSCP

O-Gene-08

ASSOCIATION OF SINGLE NUCLEOTIDE POLYMORPHISMS IN Apo E WITH CORONARY EVENTS IN TYPE 2 DIABETIC PATIENTS

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Introduction: Coronary heart disease (CHD), especially myocardial infarction (MI), is influenced by multifactorial inheritance and environmental factors. Type 2 diabetes is also a major independent risk factor for CHD. Many factors such as dyslipoproteinemia, obesity, oxidative stress, smoking, alcohol intake and genetic factors have been

identified as risk factors for both diabetes and CHD. **Objective:** The Apo E genotype has been established as one of the risk factors for CHD in diabetes. The current study has been designed to determine the association of Apo E with coronary events in type 2 diabetic patients at Single Nucleotide Polymorphisms (SNPs) rs429358 (ApoE4) and rs7412 (ApoE2). **Methods:** The study design include patients with type 2 diabetes with coronary events (n=2828). Genotyping for Apo E was performed by using KBioSciences Competitive Allele-Specific PCR genotyping system (KASP) at SNPs rs429358 (ApoE4) and rs7412 (ApoE2), which is a homogenous, fluorescent, endpoint-genotyping technology. **Results:** The genotype frequencies were: E2/E2 (0.565%), E2/E3 (12.19%), E2/E4 (1.697%), E3/E3 (67%), E3/E4 (17.64%) and E4/E4 (0.813%). The allele frequencies were 7.5, 82 and 10.5% for ε2, ε3 and ε4, respectively. The genotype distributions for Apo E (rs429358 and rs7412) were in Hardy Weinberg equilibrium. The rs429358 (ApoE4) and rs7412 (ApoE2) have significant associations with total cholesterol (TC), triglycerides (TG) and LDL-C levels (p<0.001). E4/E4 having highest adjusted least square mean value for LDL-C among all six genotypes. **Conclusion:** Significant association was found between E4 carriers and MI (p<0.05) which implies that ε4 allele of Apo E has an association with CHD risk.

Keywords: Coronary heart disease, Myocardial infarction, Diabetes, Apo E, Polymorphism

O-Gene-09

MOLECULAR CHARACTERISATION OF CONGENITAL DEAFNESS IN AUTOSOMAL RESSICIVE PEDIGREES OF KHYBER PAKHTUNKHWA

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Background: Deafness is described as complete or partial loss of hearing. It is found to be most the prevalent defect in human beings throughout the world. Hearing loss is observed to be due to both environmental and genetic factors. Genetic deafness is either syndromic or non-syndromic. The syndromic deafness patients have got hearing loss as well as other abnormalities; the second type has no disorder except deafness. This abnormality has shown large complexity on genetic level. It is estimated that 1% of 30,000 human genes are involved in hearing process. To date 142 loci and 49 genes involved in hearing impairment have been discovered. There is a high rate and risk of such genetically inherited disorders in Pakistan; 106 per 1,000 individuals, as compared to the rest of world which is just 1 per 1,000. The accelerated cause of inherited diseases in Pakistan comes off consanguineous marriages. **Objective:** The objective of the current study was to find association of loci involved in deafness in multi-generation families collected from Khyber Pakhtunkhwa. **Methods:** Multi-generation families affected from non-syndromic deafness were ascertained after informed consent from Khyber Pakhtunkhwa. Five ml blood sample was drawn from normal and affected individuals of the families. DNA was extracted using standard organic methods. Forty-nine known loci for non-syndromic deafness were selected. Seventeen loci have been amplified through PCR using loci specific microsatellite markers. The PCR products are run on PAGE for linkage analysis. Sixteen loci have been excluded for the families under study. **Results:** One of the families has been found to be linked at DFNB4. More loci are being hunt for the families. Sequencing of the candidate gene will be done to confirm the mutation in respective gene. **Conclusion:** This study will provide genetic proof for screening and identification of hearing loss genes in local population. Genetic counselling and molecular screening of deafness is becoming common in Pakistan.

Keywords: Deafness, Exclusion Study, Microsatellite Markers

P-Gene-10

ASSOCIATION OF SNPs IN VITAMIN D METABOLISM GENE CYP24A1 WITH HEART FAILURE

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Background: The calcium homeostasis requires adequate input from Vitamin D endocrine system. Low levels of vitamin D and disturbances in Vitamin D metabolism lead to cardiovascular diseases. Single nucleotide polymorphisms SNPs in the genes modulating the vitamin D polymorphism has been found to be associated with variable paradigms of the gene product. CYP24A1 is an important gene which encodes 25-hydroxyvitamin D 24-hydroxylase. This enzyme is involved in calcium homeostasis and the vitamin D endocrine system. Objective: The current study is aimed at finding the association of SNPs in CYP24A1 gene with cardiovascular diseases in

Pakistani patients suffering from cardiovascular disorders. **Methods:** For this study whole blood sample collection is in progress from cardiovascular patients and healthy controls after informed consent. The samples are being collected from major cities of Pakistan. Vitamin D level will be checked and DNA will be extracted using standard organic methods. Primer designing has been completed for selected SNP in CYP24A1 gene. PCR will be done for genetic analysis of SNP. **Results:** Results will be evaluated statistically using chi-square test, *p*-value, ANOVA and odds ratio value. The research work will be published in peer reviewed journal. **Conclusion:** This study will explore the projections of vitamin D disturbances in genetic background.

Keywords: Vitamin D, CYP24A1, 25-hydroxyvitamin D 24-hydroxylase, endocrine system etc.

O-Gene-11

POLYALANINE TRACTS CAUSE FORMATION OF AGGREGATES

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Background: Sox3 (SRY related HMG box) is the transcriptional factors which activates the target genes. Sox3 plays an important role in development and disease. The main function of Sox3 is in development of nervous system. The human and mouse version of Sox3 contains the polyalanine tract. Any expansion or mutation could lead to misfolding of the mSox3 proteins and which could result into aggregate formation in cells; this aggregate formation is seen in patients suffering from mental retardation. Whether these aggregates are formed only due to expansion or mutation of alanine tract in Sox3 or whether these alanine tracts can interact with each other is not clear. **Objective:** Since aggregate formation of sox3 is the hallmark of mental retardation, my objective is to analyse the various regions of sox3 which contain these tract, and to investigate as which polyalanine tract causes these aggregate formation. **Methods:** All these constructs were amplified by PCR using Taq Polymerase (invitrogen). COS7 cells were transiently transfected by using electroporation method. GFP was fused with these constructs to observe localization of mSox3 in COS7 cells. DAPI was used to stain nucleus. These cells were observed under fluorescent microscope. Images were merged using photo shop element. **Results:** In order to determine if alanine tract containing sox3 constructs could form the aggregates in cells. We made several mSox3 constructs by PCR. All the constructs, which contained alanine tract formed aggregates, however, the N-terminus HMG domain containing construct of mSox3 did not make any aggregate. This suggests that the aggregates are not only formed by polyalanine expansion, or mutation but these are also formed when expressed in alone in COS7 cells. These aggregates have similar pattern found in cells of patients suffering from mental retardation. This indicates that these mSox3 alanine tracts might interact with each other to form these aggregates. However, whether they interact with other components of the cells need to be studied. **Conclusion:** Alanine tract might interact with each other, and HMG domain which lacks alanine tract doesn't form these aggregates.

Keywords: mSox3, Polyalanine tract, aggregate formation

O-ME-01

CURRENT TRENDS IN MEDICAL EDUCATION

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A future medical expert [doctor] needs to acquire appropriate scientific foundation [knowledge] for which one has to develop critical thinking and communication; needs to learn clinical skills in order to be professionally competent; needs to develop professional attitude and values for which one has to improve behaviour and collaborations and, needs to be a custodian of population health as a social responsibility for which one has to learn managerial skills and health advocacy. In order to achieve, it is need of the hour to transform teaching to learning, memorising to understanding and critical reasoning, and examinations to evaluations. We need not to follow criteria but to set standards. The curriculum is required to be student-centred, patient-oriented, integrated, community based, elective driven and systemic. The tomorrow's curriculum is required to take the pillars of Bloom's taxonomy into an account [knowledge, comprehension, application, analysis, synthesis and evaluative judgment]. We need to hybridise the component of research in all facets. The content overload and redundancy is required to be shredded and concepts and context [relevance] needs to be merged. Multimodal learning strategies like large group interactive sessions, small group discussion, self-directed learning, computer-assisted learning, problem-based learning, case-based learning, patient-based learning, performance-based learning, and projects/assignments are to be introduced and

encouraged. The evaluation methodology must be specific, measurable, achievable, realistic and time-bound. Efforts be made to transform summative assessment to formative assessment. The formative assessment reforms the process of learning, whereas, summative assessment reframes the outcome. In conclusion, we need to keep abreast with the current trends in curriculum development, learning strategies and accreditation system keeping an account of our regional and cultural delicacies.

O-ME-02

PROFESSIONALISM

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Professionalism is a behavior which one displays. We can feel that a person is demonstrating professional behavior or not but it is difficult to define professionalism. Professional demonstrates a personality having desirably varied abilities, they know when to laugh, how to run a meeting, how to deal with patients. They set standards for others. They can always say hand on heart "I expect high standards from my team and I demonstrate the same high standards at all times". The professional evaluates their own performance, has high expectations of themselves and others and constantly strives to improve. In our circumstances the medical students come from different culture, background and educational system so it is our duty to assess and correct the professional attitudes and conduct of learners. Learners experiences with physicians/teachers may have vary greatly. Ethical teaching is advanced in some medical colleges and absent from others. When the teacher models professional conduct and attitudes he or she is teaching professionalism. The best way to teach professionalism is to display, to be role model. All of us make errors but understanding how to deal with errors when they are made is part of learning to be professional. Professionals see themselves as part of solution rather than a problem.

O-ME-03

CONCEPT OF EDUCATION IN ISLAM

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He taught Adams the names of all the things than He presented those things to angels and "Tell me the names of these things if what you say is true" Qurran 2(3). (Allah did this to show Adam's special qualities of Learning and Memory). The Prophet of Islam Muhammad (PBUH) stressed on learning and acquiring knowledge in his various Hadith, "Learning from infancy to death" Hadith Muslim. On the Authority of Anas who said that Prophet Muhammad (PBUH) said "Whoever gets out seeking knowledge is in the Cause of Allah until he returns". Imam Al-Shaafi said, "I have never seen such a nobler Science than Medical Sciences except Sciences of Religions". Allah grants wisdom to whom He pleases. To whom wisdom is granted, indeed he receives an overflowing benefits. Challenges of the modern time call for the re-construction, re-building of structure of our education system on such a strong foundation to fulfil our spiritual and temporary obligations. We are in need of such a strong Islamic education system to produce Islamic scholars, doctors, engineers, journalists, philosophers, and especially Islamic teachers, in brief, experts in all fields of education to re-construct our modern values on Islamic principles.

O-ME-04

RATIONALISATION OF PHYSIOLOGY CURRICULUM IN MBBS FIRST AND SECOND YEAR —A SURVEY REPORT

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Background: The survey was conducted to test the hypothesis that 'the Physiology curriculum currently ascribed to the First Year Class is out of proportion'. If this was true, what remedial measures could rectify the disparity? An attempt was also made to ascertain the areas maladjusted or duplicated and repetitively taught in the disciplines of Physiology and Biochemistry contravening the PM&DC and UHS Lahore policies. The surveyed population was also requested to give views on limiting each of such contents to one particular relevant discipline. **Methodology:** The population included in the survey comprised of Heads of the Physiology Departments of all the Medical Colleges affiliated with UHS Lahore. The documents posted to them included a detailed discourse on the

prevailing situation and proposed remedial measures (including a page on the predictable apprehensions/reservations duly addressed and solaced) and a concise feedback questionnaire. To construct an unbiased feedback, worthy respondents were specially requested to refrain from sharing their views with faculty members of rest of the medical colleges. Intradepartmental deliberations were however promoted. Opinions of the respondents were to be point scored for each Professor, Associate Professor and an Assistant Professor as 3, 2, and 1 respectively. Total points, for or against, were converted into % for comparison. **Results:** The survey period extended over 2 months, from 19th September to 21st November 2011. Feedbacks from 16 Medical Colleges (64%) could be elicited. Those who did respond included 11 Professors, 4 Associate Professors, and 1 Assistant Professor. Analysis of the 16 feedbacks significantly proves the hypothesis that the students of MBBS First Year are injudiciously overburdened while the Second Year has a potential to absorb additional curriculum (95:05%). To rectify the prevailing scenario, a vast majority (79:21%) supports the proposal to shift the Cardiovascular Physiology to Second Year and the Renal and Body Fluids Physiology to First Year. For eliminating the duplication and repetitive teaching of the same contents by different disciplines, subject-relevant division of Endocrinology (83:17%) and ascribing the duplicated contents to one specific discipline in the suggested manner also carries support by an overwhelming majority (90:10%). **Conclusions:** It is recommended that

1. CVS should be shifted to Second Year and in lieu thereof the Renal and Body Fluids Physiology to the First Year. It will rationalise the curriculum division according to the time available and the scholastic level of the students. Teaching of the Cardiovascular and the Renal and Body Fluids Physiology is least dependent on the concurrent activity in the gross anatomy. Therefore strict integrated teaching can be dispensed away if deemed necessary.
2. Repetitive teaching of the same contents by Physiology and Biochemistry Departments should be eliminated and the mode of subject-relevant Endocrinology be adopted in the suggested manner.

Keywords: Physiology Undergraduate Curriculum, MBBS, PM&DC, UHS, HEC, Endocrinology

O-ME-05

STANDARD SETTING IN EXAMINATIONS IN PAKISTANI UNIVERSITIES

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The product of any healthcare education program desirably needs to have at least the bare minimum competencies to function as a health professional in the community within his discipline. These competencies should no longer be considered in isolation as affective, psychomotor and cognitive. Instead, the health professional is defined by the cumulative integration of these competencies and their judicious use in dealing with everyday health problems. In order to arrive at this product progressive health education programs are emphasising an outcome-based approach to health education in which the final outcomes and outcomes for every stage have been identified in advance. The curriculum revolves around these outcomes and the success of the program is measured on the success of achieving the outcomes/competencies required. Standard setting is an integral component of education, licensing and certification. It helps define cut scores. The true score of a student for any particular aspect of competence arrived at by any valid and reliable instrument is a combination of the observed score and errors associated with the validity and reliability of the instrument and other confounding variables related to the context, construction, perception and approach to examination. Errors that may occur while setting standards may either be false positive (passing an incompetent examinee) or false negative (failing a competent examinee). There is no single standard setting procedure, which is devoid of errors because all are based on human judgment. As long as the judgment is made on realistic, contextually relevant and 'live' information, we can hope to minimise errors. Criterion-referenced standards are applied to medical examinations where each examinee is judged in relation to absolute standards of fitness of competence and pass and fail judgments for each examinee made on reaching that criterion/standard irrespective of relative standing of the examinee within the examinee group in the examination. It is suggested that by incorporating the evidence based on years of research on assessment and evaluation the Hofstee method for standard setting and cut-off score estimation for individual examinations may be accepted.

Keywords: Standard setting, Competency Based, Outcomes based, Criterion referenced, Assessment

O-ME-06

A MULTI-STEP PROCESS TO DEVELOP A VALID EXAMINATION

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Background: Multiple choice questions are considered to test the breadth of knowledge in a subject area in shorter time, if constructed appropriately. However, study of examinations at three different universities suggests gaps in the concepts being tested. **Objectives:** The aim of this study was to identify the gaps if any and suggest the ways to develop a comprehensive examination which would address essential concepts in a subject area being tested, and to assess the students in all outcomes of a graduate doctor. **Methods:** After selection of the questions for a paper, each subject expert was asked to look at their area and complete the grid provided below for each question. Also the questions were matched with 12 Dundee curricular outcomes to see if they address more than one outcome.

Question #	Discipline	Module	Concept	Essential/Important/ Nice to know	Cognitive level (C1, C2, C3)	No. of Questions in this exam	Remarks

Results: This completed grid helped to identify the gaps and include questions from areas missed out. It also helped to match the questions with outcome grid. This exercise helped faculty to develop the questions in deficient areas, resulting in a comprehensive exam encompassing essential concepts and major outcomes to be tested at the level of year 2. Examples will be shared during the presentation. The exercise of matching resulted in faculty satisfaction and sense of achievement for developing a fair examination. **Conclusions:** Use of an examination blueprint and graduate outcomes is essential to develop a fair and balanced examination.
Keywords: Multiple choice questions, assessment, outcome, examination blueprint

O-ME-07

MCQs vs SEQs SCORE: A TOOL TO EVALUATE MODE OF ASSESSMENT IN PHYSIOLOGY

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Background: Undergraduate medical students appear in MCQs and SEQs based theory exam under different medical universities, including University of Health Sciences, Lahore, Pakistan. As per university rules, the passing criteria is the achievement of 50% marks in total, i.e., MCQs and SEQs combined. Usually, the students score higher in MCQs compared to SEQs and manage to pass easily in theory exam. **Objectives:** The objectives of this study were to categorise and evaluate the quality of MCQs, to explore the performance of students with and without gender discrimination in memory-based and concept-based MCQs, to compare it with that of conceptual SEQs in the light of their educational background, and to determine whether the current mode and quality of assessment is suitable to evaluate the knowledge and concepts of our students. **Method:** A retrospective data analysis was done using SPSS on result of undergraduate physiology examination. Equal number of memory based and concept based pre-attempted standard MCQs were randomly selected along with standard concept based SEQs, and performance of students was measured in terms of percentage. The 3 categories of results were measured in all students by using ANOVA. Each category of score was then measured with respect to gender and educational background by applying 2-tailed *t*-test. **Results:** The overall score of memory-based MCQs was higher than that of concept-based MCQs followed by SEQs. Moreover, female students performed significantly better in memory based MCQs as well as concept based SEQs, whereas, no significant differences between genders were observed on the score of concept based MCQs. Furthermore, the students with English medium background, including those passing O/A-levels were able to score higher in all 3 categories especially in concept based MCQs and those with Urdu-medium background, including those passing Matric/F.Sc were closer in only short essay type questions, although non-significantly. **Conclusion and Suggestions:** Female students in general are more focused and high-achievers in medical field, so induction of male students may require reliable aptitude test along with merit. Comprehension of medical curriculum may be improved by induction of students with English medium and/or O/A-levels background. Furthermore, O/A-levels equivalence may be raised to facilitate these conceptual students to reach the merit list. Cramming-culture may be discouraged by avoiding construction of MCQs that test rote-memorisation. Relative percentage of conceptual SEQs may be increased in comparison with MCQs in each set of theory exam. For

thorough assessment of our students coming from Urdu-medium background, marks of *viva voce* may be increased allowing freedom of language.

Keywords: MCQs, SEQs, *viva voce*, concept, memory, assessment, evaluation

O-ME-08

EFFECT OF SCRAMBLING QUESTIONS AND RESPONSES ON STUDENT PERFORMANCE

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Assessment is an indispensable part of an educational programme. Multiple Choice Questions (MCQs) are an objective tool of assessment provided cheating is controlled. A method employed to reduce the chance of cheating is to scramble the sequence of the MCQs and responses in multiple papers having the same content. It is assumed that the performance of students is mainly dependent on the difficulty of the items and not the order in which they are placed within the instrument. The marks obtained by 102,211 candidates sitting in Medical Colleges Admission Test (MCAT) from 2008 to 2011, and given similar-content but scrambled-sequence question paper codes were analysed using parametric tests. A significant difference amongst the mean marks of candidates in the different codes of MCAT 2008 ($F= 22.15$, $p=0.00$) and MCAT 2011 ($F=3.85$, $p=0.00$) was identified. No significant difference was found in the mean marks of the candidates' each year for different codes in each centre.

Keywords: Multiple Choice Questions, Scrambling, Assessment, Order Sequence, Cheating

O-ME-09

PERCEPTION OF MEDICAL STUDENTS ABOUT CHALK BASED AND ANIMATION BASED LEARNING

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Background: The rapid rise and development of information technology offered a better pattern to explore the new technology model. In this era of advancement in medical education, there is an increase trend in the use of Animation Based Learning (ABL). Teaching of Physiology is not a science, but an art, because it is based on conceptual learning by students to understand functional organisations of human body with respect to all the mechanisms responsible for its operation and existence as an individual. **Objective:** To evaluate the effectiveness of teaching methodology focusing on animation based learning with comparison to chalk based learning (CBL), and to investigate, whether male or female students have different perception about teaching methodologies. **Methods:** The study design was observational and descriptive. Convenient sampling was used. This study was carried out in the Physiology Department, LUMHS from 15th May to 11th June, 2012. Total 367 students (132 boys and 235 girls) were included in the study, involving the delivery of lectures on CVS and Respiratory system. Students other than 4th semester of 2nd year were excluded. The method of data collection was by interview through Structured Questionnaire. **Result:** During study period 367 students interviewed through questioner(s). ABL and chalk board study comparison was analysed. 68% students considered ABL useful for understanding structural and functional relationship, 82% were motivated towards self directing learning through ABL, 71% sustained interests in chalk board learning, whereas 75% remembered facts by chalk board teaching, though 71% felt chalk board teaching boring. Female students preferred combination of ABL and CBL as the most useful method for teaching Physiology, and Boys preferred CBL as an effective tool of teaching Physiology. **Conclusion:** Learning preferences of medical students showed ABL with CBL as useful tool for understanding the lectures. This study will help in understanding the perception of students towards modern teaching methodology and its use.

Keywords: Animation Based Learning, Medical Education, Chalk board teachings

O-ME-10

REVAMPING THE MBBS CURRICULUM

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We are living in the era of specialization since decades. However, the MBBS Curriculum has not seen any remarkable change commensurate with the modern age advances. It is the same since a doctor was supposed to be surgeon and

physician at the same time. New fields of specialization in medicine have emerged but the orthodox MBBS Curriculum is still in vogue. Many such fields are still being covered which a specialist may not need in his specialty. **Objective:** Strategy to revamp the MBBS Curriculum and customize in a way facilitating the students at one hand and bringing the perfection in profession on the other. **Strategy:** Purpose of the MBBS qualification is to prepare a general purpose community oriented doctor while preventing the element of quackery in the same practitioner. Keeping the objective in view, the syllabi need to be developed in retrograde perception. Stage 1: The process will start by formulating the committees of Clinicians in each discipline accompanied by the experts in Community Medicine. The community requirements for a General Practitioner will be clearly defined and the referral stages to be given the legal statutes. Stage 2: Once the diseases of common occurrence have been defined, the committees of Clinicians and the subject specialists in Basic Medical Sciences/Preclinical subjects will decide the areas and their depth of knowledge to be delivered in a particular subject. Stage 3: Stage of Curriculum Development. It is expected to reduce the 3 years' courses to 2 years. Community Medicine and Forensic Medicine to be given 2 shapes, one for every one while the other for the GPs. The Clinical subjects' course contents will be restricted to the predetermined diseases of common occurrence and mostly the non-invasive components. The theoretical and wards based teaching is expected to be completed in 4 years. Stage 4: The successful candidates will be provided extensive Career Counselling involving the experts in this field like psychologists. It will be mandatory for a student to choose a specific field of medicine. A. Those who opt to become GPs, will be given 2 years' exhaustive training including the wards' rotations of Family Medicine and a slot for extensive courses in the Community Medicine and Forensic Medicine. Each year to be followed by a professional examination. B. Those who opt to become specialists in other fields like, general surgery, internal medicine, ophthalmology, ENT, Dermatology, Psychiatry etc; will be provided one years' house job in that field followed by a professional examination comprising of theory as well as the clinical skills. and then second year of an extensive course in the relevant basic and preclinical sciences. The second year will be followed by FCPS Pt-I examination. Stage 5: Award of Degrees. The MBBS Degree will be further specified as MBBS (GP), MBBS (General Surgery), MBBS (Internal Medicine) MBBS (Dermatology) and so on. **Conclusion:** It will help the students to have a smooth sailing and adoption of the clinical field based on the aptitudes. It will foster a scientific approach in the clinical practice.

Keywords: PMDC, MBBS Curriculum, Committees, Community Medicine, Forensic Medicine

O-ME-11

USE OF POWERPOINT AND BLACKBOARD IN TEACHING ANATOMY AT UNDERGRADUATE LEVEL —A SURVEY AMONGST STUDENTS

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Background: Although Blackboard-Chalk method has been the keystone in our lecture methodology since ages, the use of PowerPoint is becoming more and more common with passing time. It has been under discussion among academicians, which way is superior in Anatomy: whether the PowerPoint or the 'Old is Gold' Blackboard-Chalk method. A study was conducted at Army Med College Rawalpindi, Islamic International Dental College Islamabad, and Islamabad Medical and Dental College, Islamabad during 2010 to find out effective teaching method in Anatomy by comparing PowerPoint and Blackboard-Chalk, through a survey amongst the students. **Methods:** A questionnaire with a five-point Likert scale was devised to compare the PowerPoint and Blackboard-Chalk method for teaching different parts of anatomy. **Results:** It was recommended that teaching anatomy be built on a combination; Blackboard-Chalk as main lecture format with PowerPoint being used to supplement it by showing pictures, and outlining the things in the beginning and summarising at the end. **Conclusion:** The lectures should be based on mixing both the modalities. The teachers should do some board work and show the PowerPoint slides where appropriate.

Keywords: PowerPoint, Blackboard-Chalk, Teaching methodologies, Teaching tools

O-ME-12

EDUCATIONAL OBJECTIVES —CLASSIFICATION, CATEGORISATION, AND COMPONENTS

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Education is a broad umbrella term that encompasses many complex and interconnected activities. Educational objectives fall into 3 broad categories or domains. A. Cognitive knowledge B. psychomotor or skills and C.

Effective or attitudes. Each of the three broad domains of education is further sub-classified into a hierarchical pattern known as levels. Educational objectives are short, well -structured statements that specify what the learners are expected to achieve at the end of an educational program. They usually contain descriptions of specific, short term, measurable and observable behaviours that the program intends to achieve in the learners. Educational objectives are often referred to as learning objectives to emphasize that educational objectives describe that the learner should be able to achieve as opposed to what the teachers want to teach.

O-Gen-01

RESPONSE TO DIFFERENT H-PYLORI ERADICATION THERAPIES IN PATIENTS OF ACTIVE GASTRITIS

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Background: Gastritis is a very common disease encountered in clinics. There are multiple causes of gastritis including NSAIDS, smoking, alcohol and H-pylori in which the latter has a strong association with the disease. This disease is one of the predisposing factors for gastric carcinoma. The patients mainly present with complaints of heart burn, eructation, water brash, pre- or post-parandial pain, vomiting but may even be asymptomatic. H-pylori eradication therapies which include multiple drug regimens are used to treat the disease, with widely varying response rates. **Objectives:** The objective of the study was to check the efficacy of the current regimens used in clinics and determine regimen of drugs that most effectively treat gastritis. **Methods:** A longitudinal study was carried out on 111 patients who presented with gastritis. The study was conducted in Military Hospital, Rawalpindi. The Performa include patient's profile, presenting complaints, investigations performed, regimens prescribed and follow up testing. 100 were enrolled in the study and 11 did not meet the inclusion criteria. Investigations were performed including gastroduodenoscopy, histology, culture, and urea breath test. The patients were given following regimens randomly:

- Bismuth subcitrate + Oxytetracycline + Metronidazole (2 weeks)
- Omeprazole + Clarithromycin + Tinidazole (1 week)
- Ranitidine + Amoxycillin + Metronidazole (2 weeks)
- Bismuth subcitrate + Tetracycline + Amoxycillin (2 weeks)
- Omeprazole + Clarithromycin + Amoxycillin (10 days)

The patients were then called in OPD for follow up after specified duration according to the regimen given. Investigations were performed again to see the efficacy of the therapy. **Results:** Our result shows that the regimen including Omeprazole + Clarithromycin + Amoxycillin given for 10 days was most successful. Other regimens showed low success rate. The above mentioned regimen was successful in completely eradicating the disease. The success rate of the regimens is as under:

- Bismuth subcitrate + Oxytetracycline + Metronidazole (59.1%)
- Omeprazole + Clarithromycin + Tinidazole (42.9%)
- Ranitidine + Amoxycillin + Metronidazole (62.5%)
- Bismuth subcitrate + Tetracycline + Amoxycillin (33.3%)
- Omeprazole + Clarithromycin + Amoxycillin (76.0%)

Conclusion: The regimen that includes Omeprazole, Clarithromycin and Amoxycillin is being currently used and still proves to be effective in treatment of gastritis.

Keywords: Gastritis, H-Pylori associated gastritis, H-Pylori eradication therapy

O-Gen-02

PREVALENCE OF CIGARETTE SMOKING AND TOBACCO CHEWING IN ADOLESCENT MALE STUDENTS

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Background: Cigarette smoking is prevalent in males; previous studies have found the numbers of students who smoke cigarette are on rise. The use of tobacco in any form is dangerous for health. Cigarette smoking causes

number of disease such CVDs and many types of cancers. The use of tobacco in Pakistan is increasing; especially the chewing form of tobacco, however, the subject is still understudied. **Objective:** The main objective of this study is to find out the prevalence of smoking cigarettes and chewing tobacco in adolescent male students of Degree colleges in Hyderabad and Jamshoro districts. In addition, the other objectives were to investigate whether there is an association of the use of tobacco with socioeconomic factors, and diseases. **Methods:** This was cross-sectional study conducted on 484 adolescent male students from the degree colleges of Hyderabad and Jamshoro districts. The data was collected through structured questionnaire. The average age of students who participated was from 16 to 18 years. **Results:** Out of 484 adolescent students, the use of tobacco was prevalent in 10.78%. Out of these 10.78%, 32% responded with smoking cigarettes, 42% with chewing tobacco and 26% used both forms of use of tobacco. Peer pressure (68.75%) was the main reason for the start of use of tobacco. Majority of students (58.625) were aware about the diseases caused by the use of tobacco. 48% believed cigarette as more harmful for health, and 46% were of the view that chewing tobacco is harmful for health, whereas 6% believed both forms of use of tobacco was harmful. Interestingly, we found an association of use of mobile phone with decrease in smoking and chewing tobacco. 65% of the students believed that the use of mobile phone caused an extra burden on their pocket money, which resulted in the reduction of smoking or chewing tobacco. Majority of students (64%) are ready to quit if they get job, and some responded with marriage (36%) as an incentive to quit smoking. **Conclusion:** This study on the one hand indicate the prevalence of the use of tobacco in adolescent male students and on the other it gives a valuable information about the association of cigarette smoking with socio-economic factors.

Keywords: Tobacco, Chewable tobacco, smoking, Adolescent,

O-Gen-03

HISTOLOGICAL AND BIOCHEMICAL EVALUATION OF ALLETHRIN TOXICITY ON LIVER

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Background: All pyrethroids including 2nd generation allethrin now constitute the majority of commercial household insecticides. The products having insect repellent properties are considered harmless to human but can be harmful for sensitive individuals and may produce neurotoxic and hepatotoxic effects after continuous exposure. Mosquito coils and mats mostly containing allethrin are reported for increasing the incidences of poisoning in Pakistan. **Objectives:** This experimental study was aimed to examine the toxic effects of allethrin on animal liver. **Methods:** Histological and Biochemical techniques were used to examine the toxic effects after one month continuous exposure of Allethrin to experimental rabbits. **Results:** The sub-lethal dose produced significant increase ($p<0.05$) in biochemical values of total protein, total albumin, bilirubin and blood urea and elevation in the activities of liver enzymes. The microscopy of the liver revealed small scale hepatocyte dropout, which indicated hepatotoxic effects of Allethrin on rabbit liver. **Conclusion:** The continuous and prolonged exposure of allethrin produce hepatotoxicity, that conclusively be surrogated for human care.

Keywords: Allethrin toxicity, Liver

O-Gen-04

FREQUENCY OF MICROBIAL SPECTRUM OF SPONTANEUOUS BACTERIAL PERITONITIS IN ESTABLISHED CIRRHOSIS LIVER

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Background: Spontaneous bacterial peritonitis is one of the most frequent and serious complication in patients with liver cirrhosis and ascites associated with high mortality. Empiric antibiotic therapy should be initiated before the results of ascitic fluid cultures are available, guided by knowledge of the microbial spectrum of spontaneous bacterial peritonitis in a particular population. **Methods:** This was a descriptive study carried out in Department of Gastroenterology and Hepatology, Postgraduate Medical Institute, Hayatabad Medical Complex, Peshawar from January to December 2007. Fifty consecutive patients of established cirrhosis liver with ascites presenting with

suspicion and or risk factors for spontaneous bacterial peritonitis were included in the study after informed consent. All patients were subjected to ascitic fluid tap. Twenty ml of ascitic fluid was aspirated in a heparinised disposable syringe; out of it 10 ml was immediately inoculated into blood culture bottle at bedside and sent for bacterial culture along with the remaining 10 ml for routine biochemical and cytological examination. **Results:** Out of 50 patients, 28 (56%) were diagnosed to have spontaneous bacterial peritonitis or its variants. Classic spontaneous bacterial peritonitis was present in 11 (39.28%) patients, 16 (57.14%) patients were found to have culture negative neutrocytic ascites and one (3.57%) patient had bacterial ascites. Out of 28 cases of spontaneous bacterial peritonitis 12 samples of ascitic fluid showed positive culture reports. *E. coli* was the most frequently cultured organism isolated in 8 cases (66.66%), *Streptococcus pneumonae* in 2 patients (16.66%), *Staphylococcus aurius* and *Klebsiella* in 1 case (8.33%) each. **Conclusion:** Spontaneous bacterial peritonitis and its variants are a common complication of liver cirrhosis with ascites. *E. coli* is the most frequent offending organism in these cases. Knowledge of the microbial spectrum of spontaneous bacterial peritonitis in a particular population is important for selection of the most appropriate empiric antibiotic regimen.

Keywords: Cirrhosis liver, Spontaneous bacterial peritonitis, Ascitic fluid culture

O-Gen-05

EVALUATION OF INDIVIDUAL AND SYNERGISTIC ADMINIDTRATION OF RESVERATROL, SULFORAPHANE AND GUGGULSTERONE IN DIETHYLNITROSAMINE-INITIATED RAT HEPATOCARCINOGENESIS

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Background: Hepatocellular carcinoma (HCC), is a multifactorial disease that is insurmountable to date. It is becoming increasingly apparent that oxidative stress is an important factor that enhances carcinogenesis. It is therefore important to target oxidative stress to counteract carcinogenesis. **Methods:** Recently, we have reported that resveratrol sulforaphane and guggulsterone, significantly prevent diethylnitrosamine (DENA)-induced liver carcinogenesis in rats. In the present study, we have investigated the comparative effects of combinatorial phytonutrients (dyads and triads) mediated suppression of hepatocarcinogenesis. **Results:** In NDEA group, MDA level was elevated with consequent decrease in GSH level and SOD, GPx and GR activities. In addition, NDEA group revealed a considerable increase in serum ALT, AST and GGT activities. In contrast, individual treatment of either Resveratrol (R), Sulforaphane (S) and Guggulsterone (G) +NDEA treated groups, Dyads treated groups (R+S), (S+G), (R+G)+NDEA groups and Triad treated groups (R+S+G)+NDEA showed a significant decrease in MDA level and a significant increase in GSH content and SOD, GPx and GR activities compared to NDEA group respectively. Phytonutrients also decreased serum ALT, AST, GGT activities induced by NDEA. **Conclusion:** The outcome of this study may benefit the development of resveratrol, Sulforaphane and Guggulsterone in translational medicine.

Keywords: Hepatocellular carcinoma, Resveratrol, Sulforaphane, Guggulsterone, Oxidative Stress

O-Gen-06

CORRELATION BETWEEN NT ProBNP AND IN PATIENTS PRESENTING TO EMERGENCY DEPARTMENT WITH DYSPNOEA

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Background: Shortness of breath is a common complaint for which the elderly seek medical attention in the emergency department (ED). Differentiating cardiac from respiratory causes of dyspnoea in this population is quite a challenge. A relationship between (NT proBNP) and left ventricular ejection fraction is observed (LVEF). NT proBNP may be a biomarker of left ventricular (LV) failure. **Methods:** The NT proBNP was measured in 100 patients above 60 years of age who presented to the ED with shortness of breath. The level was compared with echocardiographic findings to assess correlation with ejection fraction (EF). **Results:** The NT proBNP values

increased significantly as the functional severity of heart failure (HF) increased (p<0.001). **Conclusion:** The NT proBNP levels had a good correlation with deteriorating LVEF.
Keywords: Dyspnoea, NT proBNP

O-Gen-07

SLEEP HABITS OF FIRST YEAR AND FINAL YEAR MBBS STUDENTS

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Background: Poor sleep quality is reported to be associated with cardiovascular events, road traffic accident, poor academic performance and psychological distress. **Objectives:** The study was carried out in first year and final year students to determine their sleep habits. **Methods:** It was a cross- sectional study and its duration was one year (March 2010-March 2011). Setting: Study was conducted in Islamic International Medical College Rawalpindi and IIMC-T Railway General Hospital, Rawalpindi. Subjects and methods: A total number of 60 MBBS students were randomly selected, divided into Group ˝A˝ comprised of 30 students from first year and 30 from final year class out of which 50% were female and 50% were male. Their sleep habits were assessed by sleep questionnaire. **Results:** Final year female students have significantly more number of naps as compared first year males students (P≤0.015) while number of awakenings at night was also statistically different between first year females and final males (≤0.025). **Conclusions:** This study signifies that the medical students had decreased quality and quantity of sleep.
Keywords: Sleep, habits, medical students

O-Gen-08

ANGIOGENESIS AND MAST CELL DENSITY CORRELATE WITH HISTOLOGICAL GRADE IN SQUAMOUS CELL CARCINOMA OF LUNG

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Background: Angiogenesis and mast cells affect the biological behavior of human lung cancer and squamous cell carcinoma is not an exception. Measuring the microvascular density (angiogenesis) and mast cell density in this type of tumour and correlating them with the histological grade may be helpful to guide the use of cancer chemotherapeutic agents which target molecular mechanisms of tumour angiogenesis and mast cells. **Methods:** It was an observational, descriptive study. It was performed at the departments of histopathology of Gulab Devi Chest Hospital and University of Health Sciences Lahore, Pakistan. It included 39 newly diagnosed, adult patients of pulmonary squamous cell carcinoma. Clinical history was obtained and biopsy specimen was processed. Histological diagnosis was ascertained with Haematoxylene and Eosin staining. Angiogenesis was determined by Chalkley's method after immunohistochemical stainig with CD34. Mast cells per HPF were counted in Tolouidine blue stained sections. **Results:** Mean age of the patients was 58.33±1.69 (95% CI: 54.90–61.76) years. Male to female ratio was 9:1. Most (92.3%) patients were current smokers. Mean pack years of smoking were 36.81±1.91 (95% CI: 32.92–40.69). Cough, dyspnoea and chest pain were commonest presenting symptoms. Majority of tumours (71.8%) were localised to major bronchi and/or near to hilum. In 32 (82.1%) cases, the tissues for diagnosis were obtained by bronchial biopsy. In 5 cases (12.8%) CT-guided needle core biopsy was performed. Majority of tumours (74.4%) were poorly differentiated, 4 (10.3%) cases were moderately and 6 (15.4%) were well differentiated. Only one case showed features of keratinization. Mean microvascular density was 11.80±0.94 per HPF which showed strong negative correlation (r= -0.481, p=0.002) between MVD and tumour grade. Median value for mast cell density was 2±3 which showed strong negative correlation (r= -.683, p=0.0001) with grade. However, angiogenesis and mast cell density were found to be positively correlated (r=0.498, p=0.016). **Conclusion:** Angiogenesis and mast cell density are positively correlated with each other and both show negative correlation with the histological grades in squamous cell carcinoma of lung. Thus, both the anti-angiogenic and mast cell suppressive chemotherapeutic agents may be useful in well differentiated tumours.
Keywords: Lung cancer, Squamous cell carcinoma, Angiogenesis, Mast cell

O-Gen-09

SERIAL CHANGES IN PLASMA HOMOCYSTEINE IN ACUTE CLINICAL STROKE

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Background and Objective: The relationship between plasma homocysteine and stroke is controversial in many studies. There are only a few serial-sample studies which have looked at changes in stroke homocysteine during acute stroke. None of these studies investigated the changes in homocysteine in the first 3 days after stroke onset. Therefore, we designed this serial-sample prospective study to elucidate patterns of homocysteine concentration fluctuation at 0, 24 and 48 hours post stroke. **Methods:** Thirty one (22 ischemic and 9 hemorrhagic) patients with stroke and thirty three controls were selected. Three homocysteine levels were obtained from all stroke patients, while only one sample was taken from controls. **Results:** Plasma homocysteine concentration was higher in males and in hemorrhagic stroke patients at all time points. Paired sample testing revealed significant differences in the mean values of homocysteine taken at 48 hours (p=0.047, 95% CI: -1.467 to -0.011) for all cases. For patients with hemorrhagic stroke, significant values were again obtained at 48 hours only (p=0.024, 95% CI:-8.266 to -0.763). After gender stratification, we found significantly higher mean homocysteine concentrations at all time points in male patients (at 0 hour: p=0.043, 95%CI: -5.197 to -0.908; after 24 hours: p=0.002, 95%CI: -7.899 to -2.279; after 48 hours: p=0.032, 95%CI: -4.644 to -0.246). **Conclusion:** In this pilot study, we found that, on average, homocysteine levels initially decrease and then gradually rise in stroke patients, especially patients with hemorrhagic stroke. Also, there are significant gender based differences in plasma homocysteine levels in our study population. In addition to increased levels of homocysteine after 48 hours in stroke patients, we found moderate hyperhomocysteinemia in our healthy controls, consistent with previous data from Pakistan.
Keywords: Plasma homocysteine, Serial samples, Ischemic stroke, Haemorrhagic stroke, Stroke

O-Gen-10

IDENTIFICATION AND CHARACTERISATION OF CIPROFLOXACIN-RESISTANT *KLEBSIELLA SPP*

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Background: Antibiotic resistance is the result of improper and extensive self medication or fail to complete the prescription. This increases the possibility that resistant strains will over-grow susceptible strains and spread in environment. **Objective:** To identify and characterise ciprofloxacin resistant Klebsiella species. **Methodology:** Experimental work of the research study was conducted in the Microbiology and Molecular Diagnostic Laboratories of Clinical Pathology Department, Institute of Nuclear Medicine and Oncology, Lahore (INMOL). Duration of research work was 6 months. Thirty two samples of ciprofloxacin-resistant *Klebsiella* species were collected from the microbiology laboratories of different hospitals. **Results:** Biochemical tests (oxidase and citrate) were performed for confirmation of *Klebsiella spp* from 32 collected isolates. *Klebsiella* strains were found to be more resistant to different groups of antibiotics. **Conclusion:** Plasmid mediated *qnr* mechanism was present and emerging in ciprofloxacin resistant strains of *Klebsiella* species leading to increased fluroquinolone resistance.
Keywords: Ciprofloxacin, *Klebsiella*, Resistant, fluroquinolone

P-Gen-11

COMMON SUBSTANCE ADDICTION IN GENERAL POPULATION OF A BIG CITY

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Background: Common man consider, drugs like morphine, methamphetamine and alcohol etc has addiction potential but some common legal substances containing considerable amount of caffeine and nicotine also has psychoactive and addictive properties. **Objective:** This study is to evaluate the prevalence of common substance addiction in general population and also to lay out substances involve in it, in order to take necessary steps for

control of this continuously growing behavior of general population. **Methods:** A short observational survey based study is conducted on general population, age between 18–65 years by means of pre-tested structured questionnaire containing close ended questions regarding addiction with common substance abuse, dully filled by 1,050 participants (n=1,050, with response rate 89%). DSM IV criteria for substance abuse and dependency is also been used. The questionnaire is devised by referencing number of similar studies that provide demographic details with queries regarding dependency and withdrawal symptoms. **Results:** In this study total 1,050 individual participated with mean of age 41.5±24.0 years. The prevalence of substance addiction is found to be 73.33% in study population (n=770). About 41.91% of participants reported that they feel craving for nicotine containing products. (Like cigarette, pan and other like substances) similarly about 26.38% is also classified as dependent on caffeine or other similar alkaloid containing substances (like tea, coffee, cola drinks and cocoa). In about 5.04% participants' addiction with more than one substance is reported (n=53). Common symptoms of physiologic dependency found are agitation 19.77%, headache14.21%, nausea/vomiting 10.06%, drowsiness 17.16% and muscle ache/weakness 12.13%. Educational and marital statuses are found significant variables in relation to substance addiction.
Keywords: Addiction, dependency

O-Gen-12

PREVALENCE OF ANTI-HCV AND ANTI-HBV ANTIBODIES IN RURAL POPULATION OF SINDH, PAKISTAN

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Background: Hepatitis C and B are the most common types of viral infections of liver. Several studies have reported the prevalence of hepatitis C and B in number of countries. Hepatitis C and B are increasing around the world. South Asia has seen the dramatic increase in the spread of hepatitis. Pakistan is one of the countries with highest mortality rate due to hepatitis C and B. The large amount of data is available from Pakistan, which shows number of reasons for this spread. Public health workers are also reported to be at higher risk. However, the data from Sindh is scanty and needs more study. Sindh is one of the provinces at the higher risk of spread of hepatitis C and B. **Objective:** The main objective of this study is to asses the prevalence of hepatitis C and hepatitis B in the rural area of Sindh. The other objective is to find out the causes of the spread of HCV and HBV in the area studied. **Methods:** This was the cross sectional study. The study was carried out randomly on 163 subjects having different age groups. The data was collected by interview through structured questionnaire. Blood samples were collected and kept at 40C. The samples were tested for HCV and HBV using Elisa kit (Human Diagnostic Kit). All the steps for carrying out ELISA tests were used according to manufacturer's instructions. The results were obtained by ELISA reader (ASYS UVM 340). **Results:** In order to asses the frequency of HCV, and HBV, we carried out screening of hepatitis B, hepatitis C in the village, Sain Dino Mallah. Out of 163 persons including males and females, 32 persons were HCV positive (19.63%) and 07 persons HBV positive (4.29%). The prevalence of HCV was higher and it is nearly consistent with available data. Further, we set up to determine the cause of spread of HCV and HBV. The data we collected indicate that used syringes, contaminated medical and surgical instruments, used by quacks, and barber's shaving razors were the main reasons for the spread of HCV and HBV. Surprisingly, the ear and nose piercing was the most common cause in the spread of HCV and HBV in females. **Conclusion:** The data we have gathered suggest the higher prevalence of hepatitis C, although we also found the prevalence of hepatitis B. Our data is consistent with available data for the spread of HCV and HBV however, piercing of ear and nose was the most common found in females for such spread. This study will help in making public policies to reduce the spread of HCV and HBV.
Keywords: HCV, HBV, hepatitis

O-Gen-13

ASSOCIATION OF POOR MATRIMONIAL RELATIONSHIP, DEPRESSION, ANXIETY, LOW SOCIAL SUPPORT AMONG CARDIAC PATIENTS IN KARACHI

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Background: Globally CVD is the leading cause of death. In Pakistan CVD results in more than 100,000 deaths per year. Cardiovascular health is not only determined by biological factors but also by social, socioeconomic and psychological factors. Not much published work is available in Pakistan to determine association of depression, anxiety ,poor

matrimonial relationship and low social support among cardiac patients. **Objective:** To determine association of poor matrimonial relationship, anxiety, depression and low social support among cardiac patients. **Methods:** We conducted a case control study. We collected our sample from different hospitals like Abbasi Shaheed Hospital, Agha Khan Hospital, and Liaquat National Hospital Karachi. We design a detailed quessionnare which assessed matrimonial relationship, depression, anxiety and social support. Medical students had taken a written consent and conducted detailed questionnaire and interviewed them. **Result:** Male mean age was 42.9±2 and female 33.9±2). We compared low mid and high status with their risk factors. Out of 216, low SES cases (33%) and control (22%) showed positive association of poor matrimonial relation (odds ratio 1.75, 95% CI, 0.5–5.6), depression (cases 61% and control 60%, odds ratio1. 04, 95% CI, 0.3 –3.1) and anxiety (cases 50% and control 40%, odds ratio 1.57, 95%. 0.5–4.4) among cardiac patient. High SES of cases (55%) and control (35%) showed positive association of poor matrimonial relationship among cardiac patients (odds ratio, 2.3, 95% CI, 0.7–6.8) and middle SES of cases (55%) and control (53%) showed positive association of depression among cardiac patients (odds ratio, 1.07, 95% CI, 0.3–3.1). **Conclusion:** Low SES showed strong association of heart disease with poor matrimonial relationship, anxiety and depression. High SES showed positive association of heart diseases with poor matrimonial relationship and middle SES showed with depression. There was no association found between heart diseases and poor social support in all socioeconomic status.

Keywords: Matrimonial relationship, depression, anxiety, social support, SES: socioeconomic status

P-Gen-14

PREVALENCE OF RISK FACTORS RELATED TO CARDIOVASCULAR DISEASES AMONG PARTICIPANTS ATTENDING PUBLIC AWARENESS PROGRAM AT KARACHI INSTITUTE OF HEART DISEASES (KIHD)

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Background: Worldwide cardiovascular disease is estimated to be the leading cause of death and loss of disability adjusted life years. Two thirds of CVDs mortality arises from developing countries with a rapid rise expected towards 2020. The World Health Organization estimates that by 2010, cardiac disease will surpass AIDS as the leading cause of death in developing countries. Risk factors for heart disease are related to lifestyle and environmental factors. As KIHD was conducting a public awareness program for its annual symposium, it was a great opportunity to find out the prevalence of major risk factors for cardiovascular diseases in participants of the program. **Objective:** To find out the prevalence of major risk factors of heart disease among individuals, attending public awareness program at KIHD. **Methods:** The study was conducted at Karachi Institute of Heart Diseases (KIHD), cross-sectional study design. Different stalls were established where medical students conducted detailed interview, a detailed questionnaire was administered which assessed the prevalence of major risk factors for Cardiovascular diseases. We performed blood tests through automated machines to find out random blood sugar, cholesterol and urine analysis was done for microalbuminuria. The questionnaire comprised of variables focusing on prevalence of hypertension, smoking, diabetes, high cholesterol diet, use of aspirin, stress, obesity, sedentary life style and nutritional intake. Detailed standardized questionnaire, and automated digital machines to measure blood markers. Consents were obtained from the participants before administering the questionnaire. Descriptive statistics were used to detect frequencies, central tendencies and standard deviation. Statistical Analysis was done through SPSS-13. **Results:** Out of 80 subjects, complete data was available from 77 participants. The sample had a greater proportion of males 51 (66.2%). The mean age was 48.14±14.44 years. The literacy rate was 94%. There were 16 (20.8%) who were current smokers. Fifty-nine (76.6%) were not engaged in exercise. There were 26 (33.8%) self-reported hypertensive. There were 20 (26.6%) self-reported patients of diabetes mellitus. Seventeen (22.1%) had hypercholesterolemia. At least one of the parents of the 33 (42.9%) individuals was patient of heart diseases. Blood investigations showed that mean random blood sugar was 147±73.10 mg/dL. **Conclusion:** Most of the subjects had hypertension and not engaged in any physical exercise routine. Ninety percent of people were using oils in their diet and had white meat as their major source of diet. One of the major risk factors for CVD found was cholesterol level which was high normal. These decode to inadequate protective behavior patterns. Community health educational programs and health promotional strategies urgently needed to improve understanding of risk factors of CVD in the Pakistani population and promote positive lifestyle.

Keywords: Risk factors, CVD, Diabetes, Hypertension, Awareness

O-Gen-15

EFFECT OF *ALOE VERA* WHOLE LEAF EXTRACT ON BLOOD GLUCOSE AND LIPID PROFILE OF STREPTOZOTOCIN INDUCED TYPE 2 DIABETIC RATS

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Background: Diabetes mellitus is increasing with alarming rate throughout the world. Pakistan ranks sixth in diabetes mellitus in the world. Due to chronic nature of diabetes mellitus and adverse effects of synthetic hypoglycemic drugs it is required to look for indigenous, inexpensive botanical source with antidiabetic and antilipidemic effects. **Objective:** Present study was planned to determine the effect of *Aloe vera* whole leaf extract on plasma glucose and lipid profile in insulin resistant type 2 diabetic Sprague-Dawley rats. **Methds:** This Randomised control trail was conducted from April 2009 to Oct 2010 at the Department of Physiology Army Medical College, Rawalpindi in collaboration with National Institute of Health (NIH) Islamabad. Plant identification and extract preparation was carried out at Quaid-e-Azam University Islamabad. Type 2 DM was induced in 45 healthy Sprague-Dawley rats by feeding high fat diet for 2 weeks and injecting a low dose (35 mg/Kg) of streptozotocin intra peritoneally. Type 2 diabetic rats were randomly divided into three groups that were diabetic group, *Aloe vera* group and rosiglitazone group. The diabetic group was injected normal saline, *Aloe vera* group was treated with *Aloe vera* whole leaf extract in dose of 300 mg/Kg body weight and rosiglitazone group was given 5 mg/Kg body weight of rosiglitazone I/P for 21 days. **Results:** A significant reduction ($p<0.001$) in plasma glucose (62%), triglycerides (50%), total cholesterol (49%), low density lipoprotein (57%), very low density lipoprotein (50%), and increase in high density lipoprotein (50%) was analysed in *Aloe vera* group as compared to diabetic control group. **Conclusion:** *Aloe vera* whole leaf extract and rosiglitazone decreases plasma glucose and lipid levels with concomitant increase in HDL.

Keywords: T2DM, *Aloe vera*, lipid profile, T2DM, Diabetes

P-Gen-16

INCIDENCE AND CAUSES OF NEUROSURGICAL CASES REPORTED IN A TERTIARY CARE HOSPITAL OF PESHAWAR IN THE MONTH OF DECEMBER, 2011

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Background: Neurosurgical cases include a list of all those diseases and accidents which affects the body Nervous System and requires surgical approach for their treatment. The current study was undertaken to determine the frequency and various causes of neurosurgical cases leading to the admission of patients in neurosurgical wards. **Objectives:** 1. To find the incidence of neurosurgical cases reported in the tertiary care hospital of Peshawar. 2. To identify various causes/diseases responsible for the admission of patients in the neurosurgical ward. 3. To compare the frequency of various neurosurgical diseases among male and female patients. 4. To quantitatively compare the frequency of cases related to avoidable causes with the cases associated with unavoidable neurosurgical diseases. **Methods:** Descriptive study was performed in the neurosurgical ward of Lady Reading Hospital, Peshawar. The required data was collected from the official register of neurosurgical ward which was then entered in especially designed analysing sheet. Further analysis was done through MS Excel software. **Results:** Total 195 cases were registered in the neurosurgical ward of LRH in the month of December, 2011. Out of 195, the data of 22 cases was found to be incomplete. Majority of the cases registered were related to the History of Fall (HOF) with frequency of 30 followed by Road traffic accidents (RTA) with incidence number of 23. CNS Tumours (n=16) were found to be the third leading cause. The diseases/accidental causes with frequency less than 10 but greater than 3 included Hydrocephalus, Head Trauma injuries, Sub-arachnoid hemorrhage (SAH), Ventro-peritoneal (VP) Shunt, Prolapse Inter-vertebral Disc (PIVD), Spinal Stenosis, Trigeminal Neuralgia (TGN), Fire arm injury (FAI) to head, Disc Proplapse, Brain Abscess, Myelomeningocoele (MMC) and Endoscopic third ventriculostomy (ETV). Those having

incidence number of less than 4 included PID, Aneurism, Brachial Plexus Injury, Exra Dural Mass, STH, Brain lesion, Encephalus, ACM, Intra-cerebral bleeding, crainiostomy, laminectomy, Block shunt, Sciatic neuropathy and Mylopathy. Only females were found to be affected with PIVD while Disc prolapse and ETV were associated with only male patients. SAH was more common in females with a ratio of 5:1. **Conclusion:** Most leading causes of admission of patients associated with neurosurgical cases are HOF's and RTA's which can be prevented easily. Disc Prolapse and ETV were most common in males while PIVD and SAH were mostly associated with females.

Keywords: Neurosurgical Cases, Road traffic accidents (RTA), CNS Tumours, Hydrocephalus, Trigeminal Neuralgia (TGN), Myelomeningocoele (MMC), Brain lesion, crainiostomy

O-Gen-17

ROLE OF FIBROID IN CHANGING THE UTERINE SIZE, DISTORTION OF ENDOMETRIUM LINING IN A GROUP OF WOMEN BEARING AGE

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Background: Knowledge of the normal dimensions of the uterus and endometrial thickening are important for evaluating the health status of women and for forecasting the risk of developing some of the many diseases. **Objectives:** Present study tried to find out the role of fibroid in changing the uterine size and endometrial thickness in women with child bearing age. **Methods:** Both women with pre- and peri-menopausal status presenting to Radiology Department, Sir Ganga Ram Hospital and Lahore General Hospital, Lahore from October 2009 to January 2010 with the complaints of heavy menstrual loss were included in the study. A transvaginal ultrasound or pelvic ultrasound was done to confirm the diagnosis of fibroids. **Results:** It was observed that uterine size in case of both pre and post menopausal woman with fibroid was non-significantly increased. Mean size of fibroid was 3.87×3.84 Cm. Ultrasonographic results showed that the position of fibroid was either in anterior or posterior or post fundal region in both groups of women. Mean endometrial thickness with and without fibroid was relatively same in premenopausol women. While in post menopausal women endometrial thickness is slightly increased. Ultrasonography showed that fibroid pushing endometrium anterior and posterior site is more or less same but in some no effect on endometrium thickness was observed. **Conclusion:** It is observed that fibroid of 3–3.5 Cm cause a small change in the uterine size, distortion of endometrium lining in women bearing age.

Keywords: Fibroid, transvaginal ultrasound, uterus, endometrium

P-Gen-18

INSULIN RECEPTOR SUBSTRATE-2 IN NORMAL PAKISTANI SUBJECTS

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Background: Chronic hepatitis C is one of the most common diseases in third world countries including Pakistan. Globally about one hundred and eighty million individuals have become victims of hepatitis C virus infection. Chronic hepatitis C and its complications are becoming a huge burden on the health care system and its budget. Hepatitis C caused by hepacivirus, which has the ability to resist the environmental insults, is the main cause of chronic liver disease. Insulin resistance is one of the complications of chronic hepatitis C and it may result in type II diabetes mellitus. A correlation between chronic hepatitis C and insulin resistance has been established in the adult population. **Objective:** Keeping in view the importance of this pathological relationship, expression of Insulin Receptor Substrate 2(IRS-2) was monitored in normal individuals. **Methods:** Primers were first optimised using sample from normal individuals and then the IRS-2 expression was monitored in the normal subjects. **Results:** They were all found positive for IRS-2 expression. **Conclusion:** IRS-2 is expressed in normal individuals but it needs to be determined whether it is also expressed in chronic HCV infected patients. This will help in establishing a link between hepatitis C infection, insulin resistance and its complications.

Keywords: IRS-2 (Insulin Receptor Substrate 2), insulin resistance, chronic hepatitis C

P-Gen-19

PATIENTS' ATTITUDE TOWARDS MEDICAL STUDENTS IN HOSPITALS

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Background: Patients and medical student relationship have been reported to have importance in medical education. There is a conflict going on between patients and medical students since years. Medical students need cooperation of patients for clinical clerkship. But some medical students make patients irritated, and students get deprived of the knowledge they could get examining the patients. **Objective:** The objective of this study was to know the attitude of patients towards medical students, and to solve the problems created by young medical students due to lack of experience. **Methodology:** This was a cross-sectional study conducted at Liaquat University Hospital, Hyderabad, and MMC of Hyderabad District on 80 hospitalised patients. The data was conducted on structured questionnaire. Male and female patients aged 29–50 years were included, all of them belonged to middle class families only. **Results:** Sixty-five percent patients were feeling comfortable, and 35% were uncomfortable in presence of medical students. Out of these, 17.5% said that medical students understand them more and 47.5% said they care more for them. Of the 35% dissatisfied patients, 3% said they are too young, 5% thought they feel shy and 25% thought they have no experience. In order to determine if patient can approve students for consultation, 60% patients approved the presence, and 40% disapproved the presence of medical students, out of which 22% were saying they give more attention and time, 19.5% said they listen more and 18.5% said they understand more. Patients gave many reasons to disapprove: 27.5% said they have no experience, 7.5% said they are uncomfortable in their presence, and 5% said they have privacy problems. Eighty percent patients approved the existence of medical students and approved them to examine under supervision, and 20% approved in the absence of supervision. **Conclusion:** Mixed (positive as well as negative) behavior of patients toward medical students was noted. Patients play a vital role in providing better learning opportunities for medical students.
Keywords: attitude, patients, medical education

O-Gen-20

POSTPARTUM DEPRESSION IN PRIMIGRAVIDA AND MULTIGRAVIDA WITH NORMAL PHYSIOLOGICAL STATUS

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Objective: This study is performed to determine the prevalence of Postpartum Depression (PPD) and compare its percent prevalence in gravida one with multigravida and also to highlight the symptoms that often ignored leading to postpartum psychosis. **Methods:** An observational survey based study is being conducted in the gynaecological OPDs and general female population from January to May 2012 by means of close ended questionnaire and the collected data is being divided into two groups, Group-A is primigravida (n=250) and Group-B is of multigravida (n=250) with total response rate 80%. Inclusion criterion is age between 16–39 years with 1 week up to 12 weeks of postpartum and normal physiological status. Exclusion criteria are gravida five, women with history of psychiatric disorder and unusual emotional scenarios. **Results:** In Group A, a total of 210 (84%) have symptoms of depression. In which 170 (68%) reported that the symptoms disappear with in two weeks after parturition are characterised as baby blues not the PPD. Remaining 40 (16%) females reported that the symptoms of depression lasts for about two months are characterized as postpartum depression. In Group-B 92 (36.8%) reported symptoms of depression among which only 4.8% (12) can be classify as PPD with persistent symptoms of more than one month. Among those 3.2% (n=8) of gravida two and 1.6% (n=4) were of gravida three. Psychological symptoms reported are feeling of sadness 16.11%, frequent crying 14.02%, sense of failure 13.5%, irritability 11.91% and negative thought pattern 9.3%. Major physiologic symptoms change in appetite 15.8%, sleep disturbances 14.7% and fatigue 16.6% reported.
Keywords: Depression, Postpartum, primigravida, multigravida, anorexia, insomnia

O-Gen-21

PREVALENCE OF CANCER AND ITS CO-RELATION WITH ABO BLOOD GROUPS AND Rh FACTOR AMONG POPULATION OF SINDH

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Background: The co-relation between different types of Cancer and ABO blood groups. & Rh factor among Sindh population is observed. **Methods:** Blood samples were collected at hospitals. Blood grouping with different types of Cancers was performed after they were clinically diagnosed and confirmed by laboratories. Blood groups were checked by slide method for the ABO blood types with standard serological procedures. **Results:** Percentage distribution of A, B, AB and O were n=3731 (15.60%), n=5202 (21.76%), n=596 (2.49%) and n=14381 (60.15%) with frequencies of A, B and O alleles were 0.0948±0.0032, 0.1294±0.0038 and 0.7756±0.004 respectively. The Rh+ve were n=23062 (96.45%) with frequency 0.7365±1.75 and Rh-ve were n=848 (3.55%) 0.2635±0.0008 respectively. **Conclusion:** Statistically analysis shows maximum correlation of Liver, Breast and Prostate cancers with group 'O +ve' 62%, 78% and 70% respectively. Age ranged 41–50 years.

Keywords: ABO blood groups, Cancer, Population

O-Gen-22

ROLE OF CYSTATIN C IN THE EARLY DIAGNOSIS OF DIABETIC NEPHROPATHY

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Background: Diabetic Nephropathy is an asymptomatic condition at early stages and progresses to chronic kidney disease over 10–15 years. As the kidney function remain high or normal at early stages as measured by creatinine/ creatinine clearance, because creatinine levels are affected by many factors. Therefore, it is pertinent to explore the role of a marker that can help in early diagnoses of renal impairment in diabetic patients. Cystatin C is a cysteine protease inhibitor produced by all nucleated cells, freely filtered at the glomerulus and fully metabolised by proximal tubule. **Objectives:** To asses Cystatin C as an early and more sensitive diagnostic marker of GFR in patients with diabetic nephropathy. **Methodology:** A cross sectional study was conducted on purposive sample of 110 diabetic male and female (aged between 30 to 60 years) patients, attending OPD of National Institute of Diabetes and Endocrinology (NIDE), Ojha Campus, Dow University of Health Sciences (DUHS), Karachi and Nephrology department of Jinnah Post Graduate Medical Centre (JPMC), Karachi. The patients were asked to fill a detailed questionnaire about their personal, present and past medical history. Blood and spot urine samples were drawn to measure serum Creatinine, serum Cystatin C and urine albumin. Subjects were then categorised into three groups: normoalbuminuric (normotensive), microalbuminuric (normotensive) and macroalbuminuric. **Results:** Cystatin C levels showed highly significant (p<0.001) stepwise increase with albuminuric levels. High levels of serum Cystatin C were obtained in micro (1.05±0.36 mg/l) and macroalbuminuric group (2.26±0.66 mg/l) than the normoalbuminuric group (0.71±0.216 mg/l). High diagnostic accuracy of Cystatin C (90% sensitivity and 77.5% specificity) was found than serum creatinine (80% sensitivity and 80% specificity). The area under the curve (AUC) for Cystatin C (0.925) was also significantly greater than that of serum creatinine (0.841). **Conclusion:** The present study concluded that serum Cystatin C is more sensitive and specific than creatinine to evaluate the glomerular filtration rate and it could be used in the early diagnosis of diabetic nephropathy.

Keywords: Cystatin C, Glomerular Filtration Rate, Diabetic Nephropathy, Creatinine

O-Gen-23

THERAPEUTIC EFFECT OF *ALOE VERA* LEAF EXTRACT ON RABBIT SKIN WOUND HEALING

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Objectives: To observe and assess the efficacy of Aloe Vera extract on skin wound healing. **Methods:** Rabbits used as model. Excisional biopsy of three groups applied with *Aloe vera* extract, mixture and xyloaid as or control on alternate days were taken. **Results:** Visual observation showed that by 13th day post wounding was recovered 75%

approximately with *Aloe vera* extract application, 50% and 30%was observed with mixture application and xyloaid respectively. Mean fibroblast count was also proportionally increased with visual observations with application of *Aloe vera* extract from 1944–4687 (p<0.001), mixture 1754–3871 (p<0.001) and with xyloaid 1422 to 3298 (p<0.002). **Conclusion:** *Aloe vera* application for 11 days on rabbit skin wound showed better healing process in comparison to mixture and xyloaid.
Keywords: *Aloe vera*, healing, infection

P-Gen-24

PERCEPTION OF WOMEN TOWARDS EFFECTS OF TOBACCO USE

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Background: Use of tobacco is harmful for human health. Prevalence of smoking in men is higher, however, increasing evidence suggest an increase in the trend of use of tobacco in women. From 1950 to 2000, 10 million women died of the use of tobacco around the world. This figure is expected to increases. In Pakistan, the use of tobacco is increasing, however, whether this increase in use of tobacco can affect women health, or the health of foetus is still understudied. **Objective:** The main objective of this study is to find out the prevalence of use of tobacco in women, and to assess the awareness of women towards the effects of smoking and chewing tobacco and to identify the factors related with the level of knowledge and perception among adult women. **Methodology:** This was cross-sectional study conducted on 248 women living in urban areas of District Jamshoro. The data was collected through structured questionnaire. The females which were included in study aged between 40 to 60 years. The females other than urban areas were excluded from the study. **Results:** Most of the women knew that smoking and chew tobacco had adverse effects on women health and children's health but the knowledge of specific health effects was limited. About one third of the women knew that smoking and chew tobacco can cause mouth cancer. The majority of women (83%) knew that the use of tobacco can cause mouth cancer and 67% knew that tobacco can cause throat cancer, only small proportion (25%) of women knew about stomach cancer. Nearly half (48%) of women surveyed were aware about gum problems, only small percentage (3%) knew that tobacco use cardiovascular diseases and surprisingly none of women survey was aware that smoking and chew tobacco can cause fatal diseases. Educated women had better knowledge about health effects of smoking and chew tobacco. **Conclusion:** This study indicates that women are aware about the general effects like mouth cancer, but they are not aware about other diseases. Understanding the perception of women towards the use of tobacco will help in finding out the reason as to why these women were not aware about particular disease caused by the use of tobacco.
Keywords: Tobacco, smokeless tobacco, women, effects, perception

O-Gen-25

COMPLICATIONS IN TEENAGE PREGNANCIES

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Background: Early pregnancies or teenage pregnancies have been reported to have number of complications in the mother and child. These complications include miscarriage, still births, premature deliveries and severe effects on mother health, which are cervical cancer, anaemia, pre-eclampsia, eclampsia and number of other complications. Mostly the teenage pregnancy is shown in the India and Pakistan where women are married at a young age. The teenage pregnancies in Sindh Pakistan are common and needs to be studied to find out the factors association with these complications. **Objective:** The objective of this study was to find out the complications related with teenage pregnancies and to assess the awareness of women towards the risk factors involved in teenage pregnancies. **Methodology:** This is an observational study carried out in Liaquat University of Medical and Health Sciences Hyderabad, County Duffrin Fund Hospital, Hyderabad, and ISRA University and Hospital. Total 100 females (>19 year) living in rural and urban areas of Hyderabad were selected for this study. The data collected through structured questionnaire. The females other than Hyderabad area were excluded from the study. **Results:** The vast majority of the urban pregnant females knew that teenage pregnancy had adverse effects on women health and on new born babies. But on the other hand most of the rural pregnant females were unaware about the complications of teenage pregnancies. The majority of women (90%) were suffering from anaemia. 64% of teenage pregnant females were reported to have had Caesarean section. The 60% of the cases were found to have induced hypertension, whereas

22% had birth aphaxia and 20% had Pre-eclampsia or eclampsia. The 10% of all case reported as Ectopic pregnancies. The 20% cases reported as premature birth, and a very small percentage 4% had cervical cancer. **Conclusion:** Women are aware about the general effects of early age pregnancy, but they were unaware about the adverse effects of teenage pregnancy and its complications.
Keywords: Teenage, complications, pregnancy, eclampsia, pre-eclampsia

P-Gen-26

CIPROFLOXACIN RESISTANT *E. COLI* IN CLINICAL SPECIMENS

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Background: Emergence of antibiotic resistance has been recognised as a major problem of public health all over the world. Antibiotic resistance emerges due to over-prescription of antibiotics by physicians, non-completion of prescribed antibiotic treatments by patients, use of antibiotics in animals as growth enhancers, increased international travel, and poor hospital hygiene. **Objectives:** Identification of ciprofloxacin-resistant *E. coli* in different clinical specimens. **Methodology:** Total 60 samples were studied. Study was carried out in the Microbiology and Molecular Diagnostic Laboratories of Clinical Pathology Department at Institute of Nuclear Medicine and Oncology Lahore (INMOL). Duration of research work was 6 months. Urine, pus, HVS and sputum samples of 60 different patients were collected from the microbiology departments of different hospitals and laboratories of Lahore. No discrimination was made on the basis of age and gender. Samples were biochemically characterised by indole and oxidase tests. **Results:** Out of 60 samples, 56 strains were of *E. coli* showing positive results for indole test and negative results for the oxidase test. **Conclusion:** The study concludes that there is an increasing level of resistance to ciprofloxacin used to treat infections caused by *E. coli*.
Keywords: Drug resistance, *E. Coli*, Ciprofloxacin

O-Gen-27

BLOOD AMMONIA LEVEL PREDICTS THE PRESENCES OF ESOPHAGEAL VARICES IN PATIENTS OF LIVER CIRRHOSIS DUE TO HEPATITIS B AND C VIRUS

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Background: Liver cirrhosis is a major cause of mortality and morbidity worldwide, and is the 10th leading cause of death. In Pakistan, it is also the most common cause of admissions in hospitals and mortality. Esophagogastroduodenoscopy (EGD) is the gold standard for the diagnosis of oesophageal varices and according to American College of Gastroenterology all newly diagnosed liver cirrhotic patients should be screened for presence of oesophageal varices. Endoscopy is an invasive and expensive and painful procedure; therefore the non invasive predictors of oesophageal varices need to be determined. **Objective:** To determine the biochemical and ultrasonographic non invasive parameters and validate them with the presence of oesophageal varices using endoscopy as gold standard in liver cirrhosis patients due to Hepatitis B and C virus. **Methods:** This Validation study was conducted at Department of Physiology, University of Health Sciences Lahore, and Gastroenterology Department, Shaikh Zayed Hospital, Lahore, from March–October 2010. This study was carried out on 200 diagnosed patients of liver cirrhosis due to hepatitis B and C and was categorized on the basis of Child Pugh classification. Endoscopy was performed for the presence of varices. Ultrasonography was done for the spleen diameter. Blood samples were obtained for the analysis of ammonia and platelet count. These parameters were correlated with the presence of oesophageal varices using endoscopy as gold standard. Data was analyzed using SPSS-19. **Results:** Out of 200 patients, 59 were having no varices and 141 were having varices. The receiver operating curve (ROC curve) for the four parameters were compared to predict the presence of varices. Blood ammonia level had area under the curve (AUC=1.000, p=0.000, i.e., 100%). Platelet count/spleen diameter ratio (AUC=0.008, p=0.000, i.e., 8%), Platelet count (AUC=0.009, p=0.000, i.e., 9%) and spleen diameter had area under the curve 0.986 (p=0.000, i.e., 98%). The maximum area under the curve was observed with blood ammonia (100%)

as compared to other parameters. **Conclusion:** Blood ammonia level is the most reliable non invasive parameter in predicting the presence of oesophageal varices as compared to other non invasive parameters.
Keywords: Hepatitis C virus, Hepatitis B virus, Area under the curve, Receiver operating curve

O-Gen-28

ECONOMICALLY DESIGNED ADJUVANT TREATMENT INCREASES THE DISEASE FREE SURVIVAL IN PAKISTANI BREAST CARCINOMA WOMEN

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Objective: Breast carcinoma is the most common cancer affecting women's health. Present study was designed to select the treatment pattern for the patients without medical insurance coverage that can increase the disease free survival within their financial limits. **Methods:** 224 breast carcinoma females were selected from the Oncology clinic of a teaching hospital at Karachi at the time of initial diagnosis. Metastasis was excluded through bone scan, chest X-ray and ultrasound abdomen. Affordable chemotherapy treatment was selected after calculating the cost per cycle, this included CMF (cyclophosphamide, methotrexate and 5FU) x6-cycles, FAC (cyclophosphamide, Adriamycin and 5FU) x6-cycles, AC-T (AC x 4 cycles followed by 12-weekly Paclitaxal)and AC x4-cycles. Radiotherapy given to when indicated and tamoxifen (20 mg/day) was selected as hormonal treatment in hormone receptor positive tumours. Treatment efficacy was evaluated by estimating the disease free survival of the patients. Student's *t*-test was used for statistical analysis, $p<0.05$ was considered statistically significant. **Results:** Addition of chemotherapy in the treatment pattern including surgery, radiotherapy and hormonal therapy reported no significant change in the disease free survival of hormone receptor positive, lymph node negative and low tumour grade patients. Disease free survival of hormone receptor positive patients with high tumour grade significantly increased on addition of tamoxifen in the treatment as compared to hormone receptor negative patients ($p<0.05$). In locally advance disease with high tumour grade neoadjuvant chemotherapy (FAC) significantly increased the disease free survival when given with adjuvant radiotherapy and hormonal therapy as compared to adjuvant FAC or AC-T, radiotherapy and hormonal therapy ($p<0.05$). Significant decrease in the disease free survival was reported on treatment with neoadjuvant chemotherapy without including hormonal therapy and radiotherapy in the treatment ($p<0.05$). Significant decrease in the disease free survival was observed after including chemotherapy AC in the treatment patterns for all groups of patients. **Conclusions:** Patients without lymph node metastasis and tumour grade1 and hormone receptor positive can be treated without chemotherapy. Addition of hormonal therapy increases the disease free survival of patients with high tumour grade. For patients with locally advance disease recommended treatment was neoadjuvant chemotherapy along with hormonal therapy and radiotherapy and for patients without lymph node metastasis post-surgery FAC or AC-T is recommended along with radiotherapy and hormonal therapy if indicated. Chemotherapy AC exerts no protective effects on disease free survival and metastasis occurrence.
Keywords: Chemotherapy, Breast Cancer, Pakistan

O-Gen-29

SERUM ALDOSTERONE AND ANGIOTENSIN II LEVELS AMONG TEXTILE MILL WORKERS

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Background: Industrial pollution is a major occupational problem in developing countries. With rapid industrialization, the cotton dust induced lung diseases are poised to become a global health problem. Cotton dust which is present during handling and processing of cotton is a mixture of plant leaves, bracts, stem, fibres, bacteria, fungi and some synthetically derived products. The components of cotton dust penetrate into the lungs of exposed person and act as pro-inflammatory component. The damage of endothelial cells leads to endothelial dysfunction. The endothelial damage ultimately results in shedding of angiotensin converting enzyme and as a result angiotensin II is also decreased. This decrease in angiotensin II ultimately affects the blood pressure. **Objectives:** To determine and

correlate blood pressure, serum aldosterone and serum angiotensin II levels with duration of exposure to cotton dust in textile mill workers. **Methods:** This study was conducted in a textile mill of Faisalabad. Mill workers who had worked for a period of 3–10 years were selected. A sample size of 87 conveniently selected workers participated in the research study. Data collection was done via questionnaire and blood pressure estimation, serum aldosterone and serum angiotensin II levels estimation via ELISA. **Results:** Control group which had exposure to cotton dust less than one month. The mean SBP was 124.48±1.25 and mean DBP was 78.62±1.47. The mean serum aldosterone was 1.93±0.07 and mean serum angiotensin II was 38.84±0.81. Group II which had 3–5 years exposure to cotton dust. In these subjects the mean SBP was 123.62±0.89 and mean DBP was 79.14±1.03, the mean values of serum aldosterone and serum angiotensin II were 1.76±0.09 and 32.69±1.62 respectively. Group III having 5–10 years exposure to cotton dust, the mean SBP and DBP were 121.21±1.15 and 76.55±0.93, the mean serum aldosterone was 1.30±0.09 and mean serum angiotensin II was 20.83±1.44. The association of cotton dust exposure with blood pressure and serum angiotensin II were relatively strong in group III as compared to other two groups. **Conclusion:** This study showed that the blood pressure, serum aldosterone and serum angiotensin II levels were relatively on lower side in workers having exposure to cotton dust more than five years as compared to control group. This shows that exposure to cotton dust damages the pulmonary endothelium and ultimately decreases the levels of hormones in exposed persons.
Keywords: Cotton dust, Airway hyper responsiveness, Endothelial dysfunction.

O-Gen-30

RESPONSE OF HYPOTHALAMO-PITUITARY-ADRENAL AXIS AND IMMUNE SYSTEM TO CHRONIC RESTRAINT STRESS IN SPRAGUE DAWLEY RATS

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Background: Stress and its hormones were first analysed in 1946 by Hans Seyle who described it as the response of the organism to stress including physical and behavioural adaptations, the familiar 'fight or flight' response. During stress, hypothalamic pituitary adrenal axis (HPA) is activated as an adaptive response in order to maintain homeostasis. Increased cortisol level causes the decrease in total lymphocyte and Immunoglobulin levels in the body. **Method:** Sixty healthy male Sprague Dawley rats (age, 65±5 days; weight 250±50 gm) were obtained from NIH. Rats were divided into two groups, each having 30 rats. The rats of group I were not exposed to chronic restraint stress, while rats of group II were exposed to chronic restraint stress in mesh-wire restrainer for 6 hours daily for 15 days. Estimation of total lymphocyte count and serum cortisol and immunoglobulins (IgG, IgA, IgM and IgE) was carried out, and compared among two groups. **Results:** Serum cortisol levels were found significantly raised in rats exposed to chronic restraint stress. Lymphocyte count and serum IgA, IgE, IgG and IgM levels were found significantly decreased in rats exposed to chronic restraint stress as compared to the rats which were not exposed to stress (p<0.001). **Conclusion:** Chronic restraint stress compromises immune status of rats by increasing the serum cortisol level which decreases the levels of immunoglobulins and lymphocyte count.
Keywords: Stress, immune status, Immunoglobulins, lymphocyte count, Sprague Dawley rats

P-Gen-31

EFFECT OF ASCORBIC ACID AND ALPHA TOCOPHEROL ON IMMUNE STATUS OF MALE SPRAGUE DAWLEY RATS EXPOSED TO CHRONIC RESTRAINT STRESS

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Background: The immune system provides protection against infectious diseases or other insults. Psychological stress may alter antibody production through neurobiological pathways. Antioxidant supplementation is thought to improve immune status and thereby reduce infectious morbidity. **Methods**: A total of 150 healthy male Sprague Dawley rats were obtained from National Institute of Health (NIH) Islamabad. They were divided into five groups, each comprised of 30 rats. Group I was the control group on normal diet. Group II rats were exposed to chronic restraint stress for 6 hours daily for 15 days, without antioxidant supplementation, whereas rats of groups III, IV and V were given supplementation of ascorbic acid or alpha tocopherol or both respectively, for one month prior to

exposure of rats to chronic restraint stress. Estimation of total leukocyte (TLC) and lymphocyte counts was done by haematology analyser (Sysmex®) and serum immunoglobulins (IgG, IgA, IgM and IgE) levels were carried out by ELISA. **Results**: Total leukocyte and lymphocyte counts and serum IgA, IgE, IgG, and IgM levels were found significantly (p<0.001) decreased in rats exposed to chronic restraint stress compared to rats not exposed to restraint stress. The combined supplementation of ascorbic acid and alpha tocopherol significantly (p<0.001) prevented the decline in total leukocyte and lymphocyte counts and serum immunoglobulins compared to administration of either of the two antioxidants. **Conclusion**: Antioxidants (ascorbic acid and alpha tocopherol) given in combination produce greater beneficial effect in improving the immune status of rats exposed to chronic stress than individual supplementation of either ascorbic acid or alpha tocopherol.

Keywords: Stress, immune status, immunoglobulins, antioxidants

(This article has been submitted to JAMC for publication)

O-Gen-32

ASSESSMENT OF ANOREXIA, ANGER, RESTLESSNESS, GENDER PREVALENCE, LITERACY RATE, EFFECT OF BIRTH ORDER ON INSOMNIA

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Objective: To explore relations of insomnia with anorexia, anger, restlessness, gender, illiteracy and birth order. **Methodology:** Data were collected from 417 insomniac patients in this descriptive study, which were taking medical treatment from psychiatrists. A questionnaire was administered targeting insomnia criteria. Confidentiality of informations taken was insured. **Results:** 272 insomniac patients out of 417 (65.2%) were suffering from anorexia, loss of appetite was considerably prevalent and just 145 out of 417 (34.8%) had normal appetite. 284 patients out of 417 (68.1%) complained about the uncontrolled level of anger with destructive behavior. 193 (46.3%) insomniac patients reported restlessness in their life style. Insomnia was found to more prevalent in females. 224 out of 417 (52.09%) were females and 206 out of 417 (47.9%) were males suffering from insomnia. Illiteracy was 61.4%. It was found that the eldest member of the family suffers more from insomnia (184 out of 417 patients were eldest in their family). **Conclusion:** Loss of appetite, uncontrolled anger, restlessness was found to be associated with insomnia. Insomnia was more prevalent in females, illiterate patients and those who were the eldest in their family.

Keywords: appetite, restlessness, anorexia, illiteracy

O-Gen-33

LINEAR CORRELATIONS BETWEEN PATTERNS AND DETERMINANTS OF LIPID DISORDERS AND BLOOD SUGAR IN DIABETES TYPE2 PATIENTS

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Objectives: To find linear correlation of lipoproteins with blood sugar in diabetes type 2 patients. **Materials and Methods:** This cross sectional study was conducted in tertiary care hospitals of Peshawar from July 2008 to February 2009. This study investigated the graphical linear correlation between patterns and determinants of lipid disorders and blood sugar among a group of 400 type 2 adult diabetic patients, and 100 age-matched healthy controls. Demographic and clinical data and fasting blood samples were taken to estimate the blood sugar and lipid profile. Random blood sugar samples were taken after 2 hours of taking routine breakfast. Diabetic and controls participants of the study were categorised into 2 groups. The age limit was 40 to 60 years. **Results:** The data is cluster and dense. There is a week positive linear correlation between fasting blood sugar (FBS) and triglycerides (TG), between high density lipoprotein cholesterol (HDLC) and total cholesterol (TC). Strong positive linear correlation was found between fasting and random blood sugar levels, low density lipoprotein cholesterol (LDLC) and total cholesterol (TC), and between total cholesterol (TC) and triglycerides (TG). Fasting blood sugar levels form week negative linear correlation with total cholesterol (TC) and high density lipoprotein cholesterol (HDLC). **Conclusions:** Diabetic individuals have triglyceridemia and low high density lipoproteins as compared to non-diabetic subjects.

Keywords: Diabetes Mellitus, Triglyceridemia