

2.09±0.402 k. The SOD activity in the liver was increased to 2.12±0.93 unit/mg protein/min from the control value of 1.71±0.6 unit/mg protein/min. The liver showed oedema with widened intercanaliculi space and inflammation was observed too. The density of efflux transporters was observed to have increased by about 20%.

Conclusion : Intense physical activity induces adaptive changes in haematological, histological and biochemical parameters.

Abs.EN.01

Platelet Aggregability and Fibrinolytic Activity in Various Phases of Menstrual Cycle in Healthy Young Women

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Objective : The coordinated sequence of hormonal changes during the various phases of normal menstrual cycle are well characterized, whether parallel changes occur in prothrombotic tendency and fibrinolytic activity in healthy menstruating women, is the objective of this study

Method : This cross sectional study on 50 healthy normal menstruating females in age group of 18-35 yrs presents variations and comparison in platelet aggregability and fibrinolytic activity during menstrual (1-5 days), follicular (9-12 days) and luteal (20-25 days) phases of menstrual cycle. Platelet aggregability was measured by ADP induced platelet aggregation on a spectrophotometer.

Fibrinolytic activity was estimated by euglobulin clot lysis time.

Results : Results were analyzed by students paired 't' test. Change in platelet aggregability was 0.12±0.15, 0.04±0.04 and 0.08±0.07 in menstrual, follicular and luteal phases respectively. Platelet aggregability was significantly (P<0.001) higher in menstrual and luteal phases than follicular phase. The mean euglobulin clot lysis time was 277.6±43.96, 147.6±52.78 and 244.6±59.12 in menstrual, follicular and luteal phases respectively. Fibrinolytic activity was significantly (P<0.0001) lower in menstrual and luteal phases than follicular phase.

Conclusion : These cyclical changes in platelet aggregability and fibrinolytic activity suggest that there is prothrombotic tendency and low fibrinolytic activity during menstrual and luteal phases which coincides with lower levels of estrogen. This study helps us in predicting coronary heart disease risk in healthy young women during menstrual and luteal phases, in presence of predisposing factors like hypertension, diabetes, smoking etc.

Abs.EN.02

Study of Sympathetic Functional Status in Different Phases of Menstrual Cycle in Healthy Females.

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Objective : To observed the sympathetic functional status during early follicular and late luteal phases of menstrual cycle.

Method : The present study included 30 healthy females in the age group of 18-20 years who are having regular menstrual cycle. The study was conducted in the department of physiology, GMC. Two sympathetic nerve function tests like fall of systolic BP on standing from lying down and rise of diastolic BP during the hand grip dynamometer test were carried out. All these tests were done in both early follicular and late luteal phase of menstrual cycle. Data were analysed by paired t-test.

Results : This study showed that there is significant increase in basal systolic & diastolic blood pressure in late luteal phase than those of follicular phase ($P < 0.05$). Again there is increase value of fall in systolic blood pressure on standing and rise in diastolic BP after hand grip test were observed in late luteal phase which were significant ($P < 0.05$).

Conclusion : From this study it can be concluded that sympathetic activity is increased in late luteal phase of menstrual cycle. These changes may be due to gonadal steroids imbalance during follicular and luteal phase of menstrual cycle which in turn affects the HPA & ANS significantly.

Abs.EN.03

A Surface Electromyographic Analysis and Nerve Conduction Studies on Women Through the Menstrual Cycle

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Objective :

1. To classify the menstrual cycle into 4 different phases.
2. Estimation of muscle strength and muscle fatigue using SURFACE-EMG.
3. Estimation of nerve conduction velocity using NERVE CONDUCTION TEST.
4. To compare the muscle strength, muscle fatigue and nerve conduction velocity during 4 different phases of menstrual cycle for 2 months.

Method : The study group comprises 25 young healthy females in the age group 18-25yrs having regular monthly menstrual cycle of 28-30 days.

F1 - during the menses (1-7 days)

F2 - follicular (8-14days)

L1 - luteal phase (15-22 days)

L2 - premenstrual phase (23-30 days)

- LH-KIT (luteinizing hormone-ovulation predictor) is used to confirm whether ovulation has occurred.

During F1, F2 and L1, L2 phases of menstrual cycle the MUSCLE STRENGTH (maximum voluntary contraction MVC %) and ONSET OF FATIGUE IN BICEPS MUSCLE AT 60% MVC is estimated using SURFACE EMG and NERVE CONDUCTION VELOCITY OF MEDIAN NERVE is determined using NERVE CONDUCTION STUDY TEST for 2 consecutive months.

Results : Statistical analysis was performed using a non-parametric test called paired Wilcoxon test to find the significance in the

difference in various comparisons.

MVC (%) in biceps muscle was highest during F2 phase (87.80 ± 6.47) and lowest during F1 (75.60 ± 5.83) and L2 (75.40 ± 5.58) phases. Onset of fatigue (seconds) in muscle was earliest during F1 phase (45.92 ± 8.97) when compared to other phases F2 (92.64 ± 20.64), L1 (75.76 ± 22.89) and L2 (56.52 ± 15.12). No changes were found in nerve conduction velocity of median nerve during all the phases of menstrual cycle.

Conclusion : Female sex hormones (estrogen, progesterone) fluctuate radically during the menstrual cycle and are reported to decrease neuromuscular performance with decrease in hormone levels during the specific phases of menstrual cycle. Maximum strength (MVC %) in muscle was found to be highest, and onset of fatigue in muscle was late during F2 phase which coincides with increase in estrogen levels when compared with F1 and L2 phases when the estrogen levels are low in the body leading to decreased strength and early onset of fatigue in muscle indicating estrogen having effect on muscle performance. Hence results indicate the need of considering the effects of hormonal fluctuations in female at work place.

Abs.EN.04

Correlation of Bone Mineral Density With Exercise in Postmenopausal Women

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Objective : Osteoporosis in postmenopausal women is emerging as a major health problem in India. The aim of the present study was to assess Bone Mineral Density (BMD) in exercising postmenopausal women & to study the risk factors leading to osteopenia and osteoporosis.

Method : BMD was estimated in 86 postmenopausal women. It was estimated by Dual Energy X-ray Absorptiometry (DEXA) at lumbar spine and femur. Age, weight, exercise status, BMI and calcium intake was noted. Also, Years Since Menopause (YSM) was noted. Patients taking medicines which affect BMD were excluded from the study. Statistical analysis was done using chi square test.

Results : Average age of the subjects was 60.23 ± 10 years. Years Since Menopause (YSM) on an average was 11.5 ± 3 years. There was negative correlation between BMD with age ($r = -0.38$) & YSM ($r = -0.30$). No significant correlation between physical activity ($r = -0.05$) and BMD was observed. 66% women were osteopenic whereas 20% were osteoporotic.

Conclusion : Study shows that exercise in the form of walking was not helpful to protect from osteoporosis. In postmenopausal women bone deposition is compromised as a result of reduced estrogen level which is evident in this study with findings like BMD decreases as YSM increases.

Abs.EN.05

Prevalence of Osteoporosis in Perimenopausal Age Group Women Based on Bone Mineral Density

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Objective : The objective of this study was to determine the prevalence of osteoporosis and examine certain determinants of bone mineral density(BMD)amongst perimenopausal age group women.

Method : 125 female volunteers of perimenopausal age group with no risk factors for osteoporosis responded to a questionnaire that was compiled of data like age, years since menopause, parity. Their body mass index (BMI) was calculated by measuring height and weight. BMD was measured at the metacarpals (middle three) by Pronosco X Posure system. The association between variables like age, years since menopause, parity and BMI. BMD was estimated statistically by chi-square test.

Results : The result of the present study shows that there is increased prevalence of low BMD as the age advances. ($x=26.7$; $P<0.001$). The association of low BMD with years since menopause was also statistically significant. As the onset of menopause is delayed, there are less cases of low BMD. ($X^2=17.15$; $P<0.001$). Increasing parity was associated with less cases of low BMD. ($X^2=12.85$; $P<0.001$). There are less prevalence of low BMD as the BMI increases. ($X^2=22.5$; $P<0.001$).

Conclusion : The findings of the present study show that the increasing age and early onset of menopause are the high risk factors for the low BMD whereas the increasing parity and BMI above normal are the low risk factors.

Key words :- BMD = Bone mineral density.
BMI = Body mass index.

Abs.EN.06

A Comparative Study if Serum Lipid Profile Between Pre-menopausal and Post-menopausal Women

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Objective :

1. To study the lipid profile in premenopausal and postmenopausal women.
2. To compare the differences of lipid profile between premenopausal and postmenopausal women.
3. To study the effect of duration of menopause on lipid profile.
4. To correlate the results of present study with that of other studies.

Method : Fifty premenopausal and fifty postmenopausal women aged between 21-75 years were recruited for the study. All the subjects in both the samples were apparently healthy. The subjects having risk factors that may affect the lipid profile were excluded.

5 ml of venous blood was collected after overnight fasting of 12 hrs in all the subjects for estimation of serum total cholesterol, serum HDL, serum LDL, serum VLDL and serum triglycerides.

Results : As compared to premenopausal women, mean level of total serum cholesterol and serum LDL were significantly higher in postmenopausal women with 1-5 years, 6-10 years and > 10 years duration of menopause

and level progressively increased with increase in the duration of menopause. While level of serum HDL was significantly lower in postmenopausal women with 1-5 years, 6-10 years and > 10 years duration of menopause and level progressively decreased with increase in the duration of menopause.

There was no statistically significant difference in serum triglycerides and serum VLDL between premenopausal and postmenopausal women up to 10 years duration of menopause. However it increased significantly after > 10 years duration of menopause.

Conclusion : In the present study, the overall conclusion has been that menopause is associated with altered serum lipid profile. Thus menopause is an independent risk factor for developing cardiovascular diseases. Therefore it is important to consider each and every postmenopausal woman to undergo screening for abnormal lipid profile. In postmenopausal women, specific health education strategies are needed in an order to prevent the emerging cardiovascular diseases.

Abs.EN.07

Evaluation of Workdone During Mid-follicular and Mid-luteal Phases of Menstrual Cycle in Young Women

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Objective : To evaluate the work done

(physical fitness) between mid-follicular and mid-luteal phases of menstrual cycle in young women.

Method : In this experimental study, 30 young women, age groups between 18-25 yrs were included to participate voluntarily. During the experiment, each subject was asked to perform exercise in bicycle ergometer at 2 kg resistance for 5 min (or) till get tired which ever be the earlier during mid-follicular & mid-luteal phases of menstrual cycle. Work done is calculated by the formula :

Work done = wheel circumference \times tension \times rotation per minute (RPM).

Wheel circumference : $2 \pi r$; Radius of the wheel (r) = 12.5 cm

The total work done and also work done per min was calculated.

Results : The mean work done of subjects in mid-follicular phase was 190 ± 55.90 and mid-luteal phase was 240.9 ± 57.05 . The work done during luteal phase was significantly higher than that of follicular phase ($P < 0.001$).

Conclusion : Female sex steroid hormones estrogen and progesterone have potential effects on exercise capacity and performance through numerous mechanisms. Hormone level changes lead to improved or decreased performance at various times throughout the menstrual cycle. Female's work performance improves during luteal phase. Females who perform on gym to reduce their weight can work more on luteal phase. This helps the athletics and coaches to improve their strategy on work performance while participating in different sports meet during luteal phase.

Abs.EN.08

Performance on Color Word Stroop Task in Different Phases of Menstrual Cycle

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Objective : There is conflicting evidence of variation in cognitive functions and alertness in females during different phases of menstrual cycle. The present study evaluated the variation in alertness in females during different phases of menstrual cycle using Stroop task, a well established tool for assessment of attention.

Method : Thirty female volunteers with regular menstrual cycle (28-30 days) were recruited for the study after taking written informed consent. Exclusion criteria included history of medical illness especially neurological diseases, smoking, alcoholism, drug addiction, usage of hormonal pills and irregular/anovulatory cycles. The recordings of Stroop task were done in a single cycle at 1-3 days, 11-15 days and at 17-22 days of the cycle. The Stroop task was administered in three blocks tested at intervals of 5 minutes. Each block had three conditions namely neutral, congruent and incongruent, with 72 trials each. The data was analyzed by repeated measures ANOVA using SPSS 17.

Results : The study revealed no difference in attention (as measured by the mean reaction times for performance of stroop task) in different phases ($P=0.776$) of the menstrual cycle. There were significant interference and

facilitation effects ($P<0.001$) within each phase, which were however not significantly different when compared with same block in different phases ($P=0.796$) or between blocks in same phase ($P=.087$). The number of correct responses also did not show any significant variation in the different phases ($P=0.991$).

Conclusion : Females with regular menstrual cycle fail to show any significant variation in alertness during different phases of their cycle, thereby suggesting that alertness is not modulated by female hormones.

Abs.EN.09

Analysis of Sympathovagal Interaction to Assess Cardiac Autonomic Modulation in Pre and Post-menopausal Women

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Objective :

1. To determine rate of change in heart rate (HR) after Deep breathing exercise (DBT) & Orthostatic test (OT) with resting state.
2. To compare time & frequency domain indices of heart rate variability (HRV) between pre and post-menopausal women.

Method : The study included 60 healthy female volunteers consisting of 30 pre-menopausal women of age group 20-45 years & 30 post-menopausal women of age group 45-55 years. Detailed history and preliminary medical examination was done to rule out any

cardiovascular diseases. Baseline HR & blood pressure was noted. ECG was recorded for 5 min on student physio-pac (Medicaid company). Cardiac autonomic control was determined using HRV indices in frequency domain (low frequency (LF) 0.04-0.15 Hz; high frequency (HF) 0.15-0.4 Hz). HRV response was analyzed after controlled autonomic stimulation for which subject performed DBT, OT. HR difference during DBT was calculated. The ratio of the R-R intervals of the 30th and 15th beats after standing, the 30:15 ratio was used to assess reflex HR response to standing.

Results : The relative change in HR response to procedures was standing > inspiration > resting in both pre post-menopausal women. Compared to pre-menopausal women, post-menopausal women showed lower HR difference during DBT and lower 30:15 ratio after OT. Also, post-menopausal women had significantly lower HF, higher LF & higher LF/HF ratio.

Conclusion : There was enhanced sympathetic dominance indicating reduction in cardiac autonomic modulation in post-menopausal women compared to pre-menopausal women, attributed to difference in age and decline in estrogen level which occurs in menopause.

Abs.EN.10

Heart Rate Variability in Healthy Young Females with Primary Dysmenorrhea

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Objective : The objective of the present study was to assess the heart rate variability (HRV) in different phases of menstrual cycle in young women suffering from Primary dysmenorrhea (PD) and to compare these findings with eumenorrheic women.

Method : Forty healthy females aged 18-25 years, having regular 28-34 days menstrual cycle were divided in two groups according to Menstrual distress questionnaire. Group I – comprising of 20 females suffering from PD and Group II (control) – comprising of 20 females with little or no premenstrual symptoms. Body mass index (BMI) in kg/m² was calculated. Waist and hip circumferences were measured and Waist-Hip ratio (WHR) was calculated. Systolic and diastolic blood pressure were recorded using digital blood pressure monitor (OMRON). The basal heart rate (HR) and ECG were recorded during supine resting with help of Polyrite D during the following 3 phases – menstrual phase (M) – 1st to 5th day of bleeding, follicular phase (F) – 6th day to 14th day of and Luteal phase (L) – 15th day to 28th day of menstrual cycle. The data recorded was subjected to time and frequency domain analysis using the HRV analysis software (RMS Polyrite D version 3.0.7).

Results : We have observed greater sympathetic activity and reduced parasympathetic activity in the luteal phase compared with menstrual and follicular phases in both groups however, young women with Primary dysmenorrhea had significant alteration in their cardiac autonomic activity in the form of decreased HRV throughout the cycle.

Conclusion : Decreased HRV reflects the increased sympathetic tone or decreased parasympathetic activity and is considered an important cardiovascular risk factor.

Abs.EN.11

Changes in Arterial Stiffness in Polycystic Ovarian Syndrome

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Objective : To assess the arterial stiffness in patients of polycystic ovarian syndrome (PCOS) using pulse wave analysis and pulse wave velocity.

Method : PCOS patients (n=41) were recruited and compared with age matched healthy controls (n=10). Measures of arterial stiffness were determined using Applanation Tonometry. Pulse Wave Analysis (Subendocardial Viability Index (SEVR), heart rate corrected Augmentation Index (AIx), Aortic pressures, ejection duration) and Pulse Wave Velocity (brachial, aortic) were measured and compared between PCOS patients and healthy controls.

Results : We observed the following :

1. SEVR was significantly low in PCOS patients (124.61 ± 23.16) as compared to controls (154.90 ± 41.87).
2. Central pressures were significantly more in PCOS patients ($SBP-97.29 \pm 7.85$,

$DBP-70.61 \pm 7.85$, $MBP-83.98 \pm 7.56$) as compared to controls ($SBP-89.6 \pm 6.85$, $DBP-62.90 \pm 7.68$, $MBP-75.90 \pm 6.92$).

3. No significant difference was found in heart rate corrected AIx and ejection duration.

4. Brachial velocity was significantly higher than aortic velocity in PCOS patients, where as, no significant difference was found in controls.

Conclusion : the results of the study suggest that the PCOS patients are at increased cardiovascular risk due to increased arterial stiffness.

Abs.EN.12

Effect of Gestational Age & Position on Pulmonary Function Test

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Objective : To study the effect of pulmonary function test in different gestational age and different maternal position of pregnancy.

Method : Pulmonary Function Tests were conducted in 90 healthy uncomplicated pregnant women in three different trimesters with 30 in each trimester in the age group of 20-30 yrs irrespective of either primi or multigravida. Height, Weight & BMI were measured at the time of PFT and the PFT was done using a computerized spirometer in sitting, standing and supine position. The

values of FEV1, FVC, FEV1/FVC ratio, PEF, MMEF were recorded. 30 healthy non-pregnant age matched women were taken as control and PFT done. The PEF value is taken for comparison as it is a relatively good indicator for early detection of changes in respiratory function.

Results : The PEF values were compared between groups and were analyzed by ANOVA.

Position	The mean difference				Descriptives
	Control	Trimester-I	Trimester-II	Trimester-III	
Sitting	5.6057	5.1779	5.5080	5.0047	
Standing	5.0157	4.5877	4.9180	4.4047	
Supine	4.7660	4.3877	4.6920	4.2897	

The F-value for the mean difference in PEFR value for the control and trimester I, II, III in sitting standing and supine was 4.477, 6.698, 11.225, 3.877 were respectively. The F-values were significant ($P < 0.01$). The post Hoc reveal the PEFR decline in supine position in all three trimesters and the rate of decline for supine position was higher than standing and sitting position.

Conclusion : The decline in PEF value is due to complex physiological changes of pregnancy.

Abs.EN.13

Study of the Effect of Parity on Plasma Cortisol Levels During Pre and Post Partum Period Among the Patients Admitted in Gauhati Medical College and Hospital

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Objective : Birth is a stressful event and there are significant changes in the hormonal profile during parturition, particularly in the stress-related hormone, Cortisol. The amount of stress however varies considerably in primigravida and multigravida women. Therefore in our study we explored if any relationship existed between parity and the serum cortisol levels of women in the pre-partum and post-partum period.

Method : Maternal serum cortisol levels were measured during labour and during the first 6 hours of delivery (spontaneous vaginal) in 30 uncomplicated pregnancies (19 primi and 11 multi). Serum cortisol was analyzed with commercial (RIA) radioimmunoassay kits (Beckman Coulter, IMMUNOTECH Prague). The samples were counted in a fully automatic Gamma Counter (Gamma -10 Version 2.0, Shin Jin Medics, M.C.)

Results : The serum cortisol levels in both the primiparous and multiparous subjects were estimated and unpaired t-test was done to calculate the statistical significance. During the PRE-PARTUM PERIOD, the mean cortisol level in PRIMI patients was 1191.47 nM, as compared to the mean level in multiparous patients (552.45 nM), which was SIGNIFICANT ($P < 0.05$). In the first 6 hours of the POST-PARTUM PERIOD, the values of serum cortisol in the primi and multi patients were also different, with higher levels being present in the primiparous patients, but the difference was not significant ($P > 0.05$).

Conclusion : Our study thus showed that

parity contributed to different levels of stress hormone cortisol, in women during the process of childbirth, which were more pronounced in the pre-partum period. This might be due to obstetrical factors or psychosocial factors or both.

Abs.EN.14

Electrical Impedance Tomography Based Feto Maternal Well Being

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Objective : We are proposing a new, simple, economical, robust bioimpedance based instrument for monitoring the feto-maternal status. This technique will record and monitor the electrical field distribution in a closed object within another closed object with the help of surface electrodes.

Method : The EIT has been used for as an imaging modality for last many years for human like, lungs, GI, CVS, brain and in breast cancer detection. This is for the first time this method has been suitably modified including the instrumentation as well as the post processing of the raw data. In this technique 16 numbers of electrodes are used for measurement of the inside conductivity in term of voltage. The signal obtained here was converted into an image using certain image reconstruction algorithms such as Finite Element Method (FEM) or Finite Difference Method (FDM) [] to create an image of the impedance of different regions of the volume conductor. By discretising the domain into finite number of small elements and solve

these equations by direct or iterative method. The software design here is user friendly and generates meshes, nodes and equations automatically for any length of nodes. The software also has a capability to solve these equations which represent the pixel intensity in term of conductivity distribution inside the closed object. The algorithm has very wide application in biomedical area especially in the field of electrical impedance tomography. The Signal generated from the tissues within the closed system as an alternative/complementary to the known available feto-maternal monitoring techniques such as US and CTG. We except that the technology and methodology developed can be used as a mass health care affordable tool for base line screening as well as monitoring fetal and maternal parameters.

Results : The technology developed here and series of experiments done in the phantom and other mechanical model of similar conditions. Results clearly showed that the electrical impedance tomography can be used to image as well as detect relevant bio physiological parameters of mother and fetus growing inside the gravid uterus.

Conclusion : An appropriate, ambulatory feto-maternal monitoring system during labor, pregnancy and post partum is essential for better outcome.

Abs.EN.15

A Comparative Study of Thyroid Function Tests in Normal Pregnant and Non-Pregnant Women

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Objective : Pregnancy is associated with significant but reversible changes in thyroid function tests and the diagnosis of abnormality in the thyroid function during pregnancy is important for the wellbeing of mother as well as foetus. The present study was carried out to find out the alterations in thyroid function tests in normal pregnant as compared to non-pregnant women.

Method : 30 apparently normal pregnant women between 20-35 yrs of age with known last menstrual period and no metabolic or hypertensive disorders were selected from Obstetrics Department of Chigateri General Hospital, Davanagere, Karnataka and 30 apparently normal non-pregnant women selected randomly from general population. Estimation of serum Total Tri-iodothyronine (TT₃), Total Thyroxine (TT₄) and Thyroid Stimulating Hormone (TSH) were done by Chemiluminescence immunoassay method.

Results : The data was analyzed using unpaired student t-test. Serum TT₃, TT₄ & TSH values were significantly high in pregnant women with mean TT₃ 1.72 ng/ml, mean TT₄ 12.1 µg/dl and mean TSH 2.01 µIU/ml than controls with mean TT₃ 0.94 ng/ml, mean TT₄ 6.17 µg/dl and mean TSH 1.15 µIU/ml.

Conclusion : Thyroid Binding Globulin (TBG) induced by estrogen and relative iodine deficiency state in pregnancy due to increased Glomerular Filtration Rate leads to rise in serum TT₃, TT₄ and TSH which is vital for the normal foetal development. Hence thyroid function tests in pregnancy should be

interpreted against gestational reference intervals to avoid misinterpretation of thyroid function in pregnancy.

Abs.EN.16

A Study of Clotting Time in Pregnancy And Puerperium

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Objective : To detect any variation of clotting time in pregnancy and puerperium as compared to healthy normal adult female.

Method : "Three groups of women were considered for study.

- (I) Fifty adult women for control group
- (II) Fifty pregnant women at 28th to 40 wks of gestation.
- (III) Same group of patient in 1st to 6th day of puerperium.

The clotting time was measured by capillary tube method."

Results : The mean clotting time in non-pregnant, pregnant and puerperium women was found to be 3.001 +(-) 0.508 minute, 3.464 +(-) 0.768 minute and 2.920 +(-) 0.333 minute respectively.

Statistically, the values of non-pregnant to pregnant and pregnant to puerperium was highly significant, P-value is <0.001. But non-pregnant to puerperium is not significant, P-value is <0.05.

Conclusion : In the present study the mean clotting time was found to be high in pregnancy then that of non-pregnant. Statistically the values are highly significant. But clotting time is decreased in puerperium in that of non-pregnant and pregnant.

The difference in clotting time in different stages probably depends on platelet count. Increase platelet count decreases the clotting time.

Abs.EN.17

A Study of Coagulation Profile in Normal Pregnancy

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Objective : Haematological changes that occur during normal pregnancy create a state of hypercoagulability. A large number of studies of haemostatic mechanism during pregnancy had been carried out by various workers. In order to detect earlier and to prevent the bleeding disorders in pregnancy complicated with coagulation defect, this study is taken up. This study will be helpful to assess extend of changes in coagulation system in normal pregnancy.

Method : Coagulation profile using limited tests such as platelet count, BT (bleeding time), CT (clotting time), PT (prothrombin time), APTT (activated partial thromboplastin time) and fibrinogen assay were studied in 100 normal pregnant women who attended antenatal OPD as well as those who were

admitted in antenatal ward in the department of Obstetrics and Gynecology, RIMS hospital Imphal. Subjects were divided into three groups according to the period of gestation with seven weeks interval starting from 21st weeks of gestation.

Results : This study has shown that 27% of cases during 28-34 weeks of gestation had reduced platelet count. About 38% of the cases among 35-41 weeks gestational period had significant reduction in platelet count. This shows that platelet count is reduced as pregnancy advances. PT was found to be shortened in 17.6% of cases during 35-41 weeks of gestation. Fibrinogen level abruptly increased during 28-34 weeks in 72% of cases, which again falls to 67% during 35-41 weeks of gestation. No significant changes have been detected with APTT, BT and CT.

Conclusion : Our study has showed platelet count and PT reduced as pregnancy advances while fibrinogen level increased markedly at around 28-34 weeks of gestation. This study will be helpful in detecting bleeding disorder in pregnancy complicated with coagulation defect.

Abs.EN.18

Lactational Amenorrhoea Method in Natural Regulation of Fertility : A Study of Serum Prolactin, Gonadotropins & Breast Feeding Practices in the First Year of Lactation

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Objective : This study envisages to provide needful information on the endocrinal aspect of Lactational Amenorrhoea Method (LAM) in natural regulation of fertility to substantiate sufficiently the introduction of LAM in postpartum programmes, in relation to status of lactation and parity. The study correlates lactational status and parity to the degree of hyperprolactinemia and lactational infertility.

Method : Radioimmunoassay (RIA) and Immunoradiometric assay (IRMA) techniques were employed to evaluate PRL, LH, Progesterone, T3, T4, TSH. The study was conducted on 200 lactating and amenorrheic women of North East Region of India, in the first 12 months postpartum.

Results : The overall mean s.PRL reveal a declining trend from 1-12 month post partum (122.98 ng/ml to 39.86 ng/ml). Physiologic hyperprolactinemia is evident even in the 12th month (>30 ng/ml). Mean s.PRL of TBF cases was more than mean s.PRL of PBF in each month-wise category and exclusively breast-feeding cases showed a declining trend in s.PRL with time which was not so evident in s.PRL of PBF cases. A Spearman Rank positive correlation was found between % TBF and mean s.PRL in relation to duration in months postpartum ($P < 0.05$). The maximum number of exclusively breast feeding cases belong to lower parity ($P_1 > P_2$); lesser proportion of cases of increasing parity were totally breast feeding. Out of the 95 cases of TBF (< 6 months group), %TBF declined paritywise: 57.9%, 18.9%, 14.7%, 6.3% and 2.1% (P_1 -5) respectively. All subjects were euthyroid.

Conclusion : The parity-wise decline in mean s.PRL in exclusively breast-feeding cases,

observed, indicate that greater concentrations of s.PRL are required to establish lactation for the first time (in primipara) and return to luteinisation is related to lactational hyperprolactinemia.

Abs.EN.19

Event Related Evoked Potentials in Pregnancies Complicated With Preeclampsia

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Objective : Pre-eclampsia is the most significant cause of neurological symptoms in pregnancy. Neurological symptoms may persist many years after the index pregnancy even if the somatic symptoms of pre-eclampsia, such as hypertension and proteinuria disappear. Formerly pre-eclamptic women more often complain of memory and concentration problems as compared to women after uncomplicated pregnancies. Event related potentials (P300) have been used as a reliable and reproducible indicator of cognitive functions. Any subtle change in brain functions even during the preeclamptic pregnancy can be picked up with these.

Method : Twenty diagnosed patients of pre-eclampsia were recruited as subjects for the present study. An equal number of age and gestation matched healthy normal pregnant females served as controls. The ERPs were recorded on a computerized evoked potential recorder using the standard auditory 'oddball' paradigm by placing electrodes at FzA1A2, CzA1A2 and PzA1A2 sites. All the parameters

of ERPs in both the groups were analyzed by using student's unpaired T-test. Any correlation of these parameters with blood pressure was also seen using pearson correlation coefficient.

Results : Latencies of N2 and P3 from all the sites were found to be significantly delayed in pre-eclamptic females when compared to their normal contemporizes. No parameter of ERPs was found to be significantly correlated with blood pressure.

Conclusion : Our results conclude that there are cognitive disturbances in preeclamptic females. Information discrimination and reaction takes longer time. This could be because of sublethal vascular endothelial cell injury due to oxidants-antioxidants imbalance. Decreased cerebral blood flow could also be responsible for these non structural changes in preeclampsia.

Abs.EN.20

Combination of Platelet And Uric Acid Estimation can Predict Severity of PIH Better

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Objective : A combination of tests like platelet count & uric acid estimation was studied for their predictive value in assessing the severity of PIH.

Method : The study group included 76 women with pregnancy-induced hypertension of

different severity. Twenty six women had gestational hypertension (mild PIH) of mean age group 24.6 ± 2.1 yrs and duration of pregnancy 33.8 ± 2.7 wks. Twenty two women had pre-eclampsia of mean age 26.7 ± 2.9 yrs and duration of pregnancy 34.6 ± 3.7 wks, and another twelve women having eclampsia of mean age 25.1 ± 3.4 yrs and duration of pregnancy 35.1 ± 2.1 wks. The control group included 16 pregnant women having mean age of 25.18 ± 2.5 yrs and duration of pregnancy 27.6 ± 3.2 wks. The patients were examined during 2nd, 3rd trimester and puerperium.

Results : Our observations of platelet series are: Control group 2.41 ± 0.27 L/cmm, gestational (mild PIH) 2.1 ± 0.38 L/cmm, pre-eclampsia 1.74 ± 0.42 L/cmm, eclampsia 1.19 ± 0.38 L/cmm. Similarly uric acid series are: Control group 4.38 ± 0.57 mg/dL, gestational (mild PIH) 5.55 ± 1.09 mg/dL, pre-eclampsia 7.06 ± 1.12 mg/dL, eclampsia 8.41 ± 0.64 mg/dl. When value of platelet and uric acid estimation were compared between the control and study groups, significant decrease ($P < 0.01$) in platelet number and rise in uric acid ($P < 0.01$, $r = 0.693$) were observed as the severity of disease process increased through pre-eclampsia to eclampsia in study groups. Thus, estimation of platelets and uric acid taken together is a better indicator of the severity of PIH.

Conclusion : A simple battery of haematological tests of platelet and uric acid estimation are accurate and cost effective and can be used as a rapid procedure for assessment of severity of PIH and their management.

Abs.EN.21

Evaluation of Serum Calcium and

Magnesium Level in Pre eclamptic Women in Manipur

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Objective : To estimate the level of serum calcium and magnesium and their relationship with pre eclampsia.

Method : 20 pre eclamptic patients and 20 normal pregnant women (control) attending RIMS OPD and also those admitted in antenatal ward of RIMS were studied. Serum calcium and magnesium levels were estimated by using O-cresolphthalein complexone and calmagite method by photocolorimeter at 570 nm and 530 nm respectively.

Results : Serum calcium level in the control group was 9.46 ± 0.93 and in the pre eclamptic patient was 8.33 ± 1.21 with a P value of 0.0021 and the serum magnesium level in the controls was 1.59 ± 0.38 and in the pre eclampsia was 1.97 ± 0.49 (P=0.009).

Conclusion : Above results show that the serum level of Calcium was significantly reduced in preeclampsia than normal which is comparable with the findings of the other authors whereas the magnesium level was found to be significantly reduced in the normal pregnancy than pre eclampsia our study.

Abs.EN.22

Effect of Hand Grip Test as a Marker of Sympathetic Activity in Preeclampsia

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Objective : The study was undertaken to assess pressor response to handgrip on sympathetic cardiovascular functions in normal pregnant & Pre eclamptic pregnant.

Method : Sample size of 100 females selected from OPD & Obstetrics & Gynecology ward of IGGM College (Nagpur), out of which 50 were normal pregnant & 50 were Preeclamptic females, of 18-30 years age group. Test was performed by asking subject to perform 30% of Maximum voluntary contraction by gripping the hand grip dynamometer. It was used as indicator of sympathetic activity in which cardiovascular parameters like heart rate & blood pressure were recorded. Baseline Heart rate (HR) recorded with ECG lead II using R-R interval whereas Baseline blood pressure (BP) recorded with help of Sphygmomanometer. Blood pressure response to hand grip was recorded as change in Heart rate (HR) & change in Blood pressure (BP) during the test. Statistical analysis comprised students't-test, at 95% confidence level.

Results : The results indicated significantly increase in blood pressure response to handgrip (increase in SBP, $P < 0.004$ & increase in DBP, $P < 0.003$) in Pre eclamptic pregnant females as compared to normal pregnant indicates increase reactivity to constrictor stimuli (handgrip).

Conclusion : Preeclampsia is associated with sympathetic over activity as compared to pregnancy.

Abs.EN.23

Study of Serum Magnesium Level in

Pregnancy Induced Hypertension

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Objective : To compare serum magnesium levels in pre-eclamptic women, normal pregnant women and non-pregnant healthy married women.

Method : The study was carried out among 105 married females of reproductive age group (15-45 years), divided into three study groups, attending the outpatient department (OPD) of Obstetrics and Gynecology Department, Kanpur between January 2009 and June 2010. First group comprised of 35 pregnant women with pregnancy induced hypertension (pre-eclampsia), second group with 35 pregnant women without hypertension and the third group was of 35 non-pregnant healthy married women. The blood samples were collected and analyzed for Mg⁺⁺. The statistical analysis was done using student t-test.

Results : The mean age of cases in Group I, ii and iii were 25.6±3.74 years, 25.11±3.87 years and 26.66±2.50 years, respectively. Most of the cases in all the three groups were anaemic. There was a significant difference in the mean HB values of group i and iii (P<0.05) while it was non-significant between group i vs. ii and group ii vs. iii (P>0.05). The RBS levels in hypertensive and non hypertensive pregnant women differed significantly in comparison with non pregnant healthy women (P<0.01 and P<0.01, respectively). The mean serum Mg⁺⁺ levels in group i of hypertensive pregnant females cases were significantly lower than the group ii of non hypertensive pregnant females

(P<0.05) and group iii of healthy non pregnant women (P<0.05). The mean serum magnesium level of non pregnant women in the present study (2.06±0.13 mg/dl) was within the normal range (1.8–3.0 mg/dl).

Conclusion : Statistically significant difference in serum Mg⁺⁺ level was observed in the three study groups.

Abs.EN.24

A Correlation of Seminal Parameters with Hypo Osmotic Swelling Test in Infertile Patients

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Objective : To Study the relation of sperm count with sperm motility & Hypo Osmotic Swelling Test, and observe the relation of different factors that affect semen quality.

Method :

1. History taking, Examination & Collection of Semen sample
2. Physical Semen Examination : Appearance, Volume, Viscosity, Reaction
3. Microscopic Semen Examination : Sperm Motility & Viability, Sperm Count
4. Hypo Osmotic Swelling Test : Healthy viable sperm having with good fertilizing potential has the property of curling & coiling of tails when exposed to the stress of Hypo Osmotic Pressure, thus evaluating the physiological integrity of plasma membrane of sperms.

Results :

1. Commonest age group was 21-40 years, with duration of infertility of 2-6 years.
2. Total cases, responsible as a cause of infertility in male partner according to semen analysis, were 44%, due to abnormality in either sperm motility or sperm count or both together.
3. Highest positive Hypo Osmotic Swelling (HOS) Test was seen with 41 to 80% Sperm motility & viability, which suggest that there is good relationship between sperm motility and viability with Positive HOS.

Conclusion :

1. Smoking or tobacco chewing for longer periods may cause infertility by changing semen quality.
2. Hypo Osmotic Swelling test can be reliably predict sperm viability and can be added as indicator of good fertilizing capability of semen sample.
3. Overall, there was a good correlation between clinical signs, seminal parameter and Hypo Osmotic Swelling test.

Abs.EN.25

Comparative Study of Y-Chromosome Microdeletions with Known Sperm Parameters and Reproductive Hormones Profile in Primary Infertile Males

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Objective : The aim of the present study was to evaluate and compare the incidence of Y-chromosome microdeletions in infertile & fertile males with routine semen and hormonal analysis to define whether Y-chromosome microdeletions are specific for spermatogenic failure or not.

Method : Present study was carried out on 138 primary infertile male patients and 100 males with known fertility from Vidarbha region of Maharashtra. DNA was isolated by standard phenol-chloroform method. Routine semen analysis was done and serum was used for estimating concentration of different reproductive hormones like LH, FSH, PRL and Testosterone. DNA-PCR for Y-chromosome microdeletion was performed by using STS specific primers.

Results : Microdeletions or gene-specific deletions were not detected in normospermic subjects. Deletions of the Azoospermia factor (AZF) region were detected in 92% (127 out of 138) of individuals with primary infertility with different categories of sperm count. Serum testosterone concentration was significantly low in infertile males (288 ± 97 ng/dl) as compared to fertile males (596 ± 113 ng/dl). Significant increase concentration of serum LH (8.3 ± 1.01 mIU/ml) and FSH (17.3 ± 0.89 mIU/ml) were also noted in infertile males.

Conclusion : Our study suggests that Y-chromosome microdeletions are specifically associated with severe spermatogenic failure in infertile males in comparison with fertile males and are reliable for the routine clinical workup of severe male factor infertility.

Abs.EN.26

Effect of α -tocopherol Pretreatment on Testicular Weight, Sperm Count & Sperm Morphology on Cadmium Induced Testicular Damage in Male Albino Rats

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Objective : Cadmium is one of environmental pollutants arising from electroplating, fertilizers, pigment and plastic manufactures. Clinical and animal studies indicate that abnormalities of spermatogenesis result from exposure to this toxic metal. The purpose of present study was to evaluate the protective role of α -tocopherol on cadmium chloride induced testicular damage.

Method : Adult male wistar rats (n=6/group) were divided in four groups, Normal control (0.9% saline treated), Vitamin E treated (100 mg/kg bw) orally for 30 days, cadmium chloride treated (0.5 mg/kg bw) & vitamin E for 30 days+ cadmium treated. Animals were sacrificed 15 days after cadmium administration or saline administration. Testicular weight, epididymal weight & sperm count, sperm morphology were estimated in each group.

Results : Exposure of rats to cadmium chloride showed a decrease in the testicular &

epididymal weight (P<0.001) and, sperm count (P<0.001), increase in the incidence of abnormal sperms (P<0.001). Pre-treatment with α -tocopherol showed a significant increase in the testicular & epididymal weight (P<0.001) and, sperm count (P<0.001), decrease in the incidence of abnormal sperms (P<0.001) compared to on cadmium treated rats.

Conclusion : The present study show that cadmium at the dose of 1 mg/kg bw administered is responsible for testicular damage & that α -tocopherol protects the testis from cadmium induced damage.

Key words : cadmium, sperm count, sperm morphology, Testicular weight

Abs.EN.27

Dose and Time Dependent DNA Damage Measured By The Comet Assay in Mice Spermatozoa After Imatinib Treatment

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Objective : Treatment of cancers with cytotoxic agents such as tyrosine kinase inhibiting drugs often, but not always results in transient to permanent testicular dysfunction. Most of the drugs are genotoxins and induce irreversible effect on genetic makeup. There is paucity of reports on planned study of genotoxic effect of imatinib on spermatozoa. Hence the study was planned to assess the effects of imatinib on the genetic makeup of spermatozoa in male swiss albino mice.

Method : Male swiss albino mice were treated with imatinib and sacrificed at the end of 1st, 4th, 5th and 10th week after the last exposure to imatinib. The epididymis were removed and processed for single-cell gel electrophoresis (Comet) assay.

Results : Increases were found when measuring the percentage of tail DNA, but the greatest changes were in tail moment (a product of tail length and tail DNA).

Conclusion : Imatinib is genotoxic to the sperm DNA which is indicated by the Olive Tail Moment, but this effect is reversible once the drug is withdrawn. A large proportion of undamaged sperm cells remain even after the highest dose, the possibility of normal fertility remains.

Abs.EN.28

Temporal Phase Relation of Neural Oscillations And Modulation of No Activity Alters Plasma Testosterone Level in Mouse, *Mus Musculus*

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Objective : To study the correlation between NO activity and reproduction in control and experimental conditions in albino laboratory mouse, *Mus musculus*.

Method : NO level was measured in hypothalamus, testis and plasma of sexually immature and mature mice. To investigate this relationship in the experimental condition, nine weeks old sexually mature mice were

administrated with saline or NO donor; Sodium nitroprusside (**SNP**; 0.25 mg/100 gm body weight) or NOS inhibitor; L-Nitro arginine methyl ester (**L-NAME**; 1 mg/100 gm body weight) for 1 week. After 24 hours of the last injection the animals were sacrificed and plasma was used for estimating testosterone level. In another experimental set up, specific temporal phase relation of serotonergic and dopaminergic oscillations was induced by injecting their precursor drugs. 5-hydroxytryptophan (**5-HTP**) and L-3, 4-dihydroxyphenylalanine (**L-DOPA**) intraperitoneally (5mg/100g body weight) 8 or 12 h apart over a period of 13 days. After 24 days of treatment period, control (saline injected) and experimental mice (8-h and 12-h) were sacrificed and monitored for the testosterone level in plasma; and nitric oxide (NO) level in the hypothalamus, testis and plasma.

Results : Results indicate increased NO activity in sexually immature and 8 h mice compared to sexually mature and control/12-h mice. On the other hand, NO donor and 8-h relation of neural oscillations decreased testosterone level in sexually mature mice compared to control while NOS inhibitor and 12-h relation of neural oscillations had no significant effect.

Conclusion : These finding clearly indicate an inverse relation between the NO activity and testosterone level in mice under both control and experiment conditions suggesting the role of NO in reproductive regulations.

Abs.EN.29

Cognitive Functions in Newly Diagnosed

Patients of Subclinical and Overt Hypothyroidism by Event Related Potential (Erp) P300.

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Objective : To study the cognitive functions in newly diagnosed patients of subclinical and overt hypothyroidism by event related potential (ERP) P300.

Method : Two groups of newly diagnosed patients of subclinical and overt hypothyroidism consisting of 25 patients each, with a group of age and sex matched control was taken to study the cognitive functions by P300. The P300 test was performed by using Mark II Polyrite machine (RMS, Chandigarh). The results were drawn by using ANOVA.

Results : When these groups were compared using ANOVA it showed a significant difference ($P < .01$) in P300 latency among the three groups while there was no significant difference in P300 Amplitude. When compared separately using post hoc tukey's test, there was a significant difference between clinical and subclinical as well as control group. There was no significant difference between P300 latency of control and subclinical cases. Also there was no change in P300 amplitude among the three groups.

Conclusion : We conclude that there is decline in cognition of newly diagnosed clinical cases of hypothyroidism compared to normal and subclinical cases.

Abs.EN.30

A Study of Auditory Event Related Potential in Subclinical Hypothyroidism

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Objective : Thyroid hormones are essential for normal cognitive function. Overt Hypothyroidism is considered a common cause for reversible dementia. There is also evidence to suggest that even subclinical hypothyroidism (normal T3 and T4, high TSH) is associated with cognitive impairment. The purpose of our study is to evaluate the cognitive function in subclinical hypothyroid patients using auditory event related potential (ERP).

Method : 30 newly diagnosed subclinical hypothyroid females of age group 25–40 years were selected from the patients attending Endocrinology OPD, Government General Hospital, Chennai – 3. Age matched females with comparable education level and normal thyroid profile were taken as controls. Mini-Mental State Examination (MMSE) was done for all cases and controls. The auditory event related potential was recorded at Cz and Pz using a computerized evoked potential recorder and the standard odd-ball paradigm. The latencies of N1, P2, N2 and P300 waves and P300 amplitude were analyzed using independent-t-test. P-value < 0.05 was considered significant.

Results : There was no statistically significant difference in the MMSE scores between cases

and controls. There was no statistically significant prolongation of N1, P2 and N2 wave latencies or P300 amplitude at Cz and Pz. But there was a very significant prolongation of P300 wave latency at Cz and Pz in subclinical hypothyroid group when compared to the control group.

Conclusion : The P300 wave latency in the ERP study, a measure of cognitive efficiency was significantly prolonged, showing impaired cognitive processing in subclinical hypothyroidism.

Abs.EN.31

Thyroid dysfunction in Type 2 Diabetes in Manipur

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Objective : To assess the thyroid dysfunction in known cases of type 2 diabetes in Manipur.

Method : Fasting blood samples were collected from 16 confirmed cases of type 2 Diabetes who had attended Diabetic Clinic RIMS, Imphal and another 16 apparently healthy individuals (control) irrespective of age, sex, and religion after getting approval from the Institutional Ethical Committee, RIMS. The blood samples were centrifuged and serum were collected for estimation of T3, T4 and TSH by using ELISCAN microwell Elisa Kit manufactured by RFCL Limited, Dehradun, India and read by Microplate Reader, Model no.-RT-2100C, Rayto (Germany) in Physiology Department.

Results : In normal cases Mean value \pm Standard Deviation of T3, T4 and TSH were (2.561 \pm 0.329), (9.579 \pm 1.940) and (9.275 \pm 4.827) respectively. Whereas in type 2 Diabetes cases Mean value and Standard Deviation of T3, T4 and TSH were found to be (0.541 \pm 0.358), (0.541 \pm 4.320) and (12.673 \pm 9.505) respectively.

Conclusion : Mean value \pm Standard deviation of T3 and T4 were significantly reduced and TSH was increased significantly in type 2 Diabetes as compared to normal subjects. Hypothyroid condition was found to be associated with Type 2 Diabetes. This is preliminary study and further study will be needed.

Abs.EN.32

Incidence of Hypothyroidism in Newborns in Manipur

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Objective : To study the incidence of hypothyroidism in newborns in Manipur by measurement of Thyroxine and Thyroid stimulating hormone levels in cord blood.

Method : 3 ml of cord blood were collected within one hr of delivery from 100 mothers who delivered normally. Serum analysis for Thyroxine(T4) and Thyroid stimulating Hormone (TSH) were done and measured by enzyme immunoassay.

Results : The male : female ratio was 57:46 = 1.172:1. The T4 value ranged from 0.991 to 13.269 μ g/dl with a mean value of

7.1684 µg/dl whereas TSH values ranged from 1.669 to 108.508 mIU/L with a mean value of 19.928 mIU/l.

Conclusion : No confirmed case of hypothyroidism was detected, however, as the study is still undergoing, there is still hope for further detection. Cord blood thyroid hormone measurement is a efficient and convenient tool for newborn screening for hypothyroidism.

Abs.EN.33

Association Between BMI, Body Fat % and Serum TSH in Euthyroid Female Subjects

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Objective : The aim of this study was to determine any possible relationship between TSH, BMI and Body fat content in euthyroid females.

Method : Sixty two female subjects (mean age of 32±11 yrs) with normal TSH status (0.6-6IU/ml) and without any endocrine disorders were included in this study. The Harpenden skin fold caliper was used to measure the body fat content of the subjects. Serum TSH was measured by ELISA. Pearson Correlation

test was used to evaluate the role of body fat % and BMI in TSH changes.

Results : A strong positive linear correlation was observed between body fat percent and serum TSH concentration in eu-thyroid females. (r=0.628 and P=0.0001). BMI and serum TSH concentration was also found to have positive linear correlation (r=0.45 and P=0.0001) although the association was less strong.

Conclusion : A strong association was found between Body fat percent, BMI and Thyroid status in eu-thyroid female subjects.

Abs.EN.34

Cardiovascular Autonomic Function in Hyperthyroid Patients

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Objective : To study the cardiovascular autonomic function in hyperthyroid patients.

Method : The study was conducted on consenting newly diagnosed hyperthyroid patients (n=31) and age and sex matched healthy controls (n=30). For assessment of cardiovascular autonomic function activity, we used heart rate variability (HRV) and for reactivity, autonomic function tests (AFT). Statistics used were independent t-test for parametric and Mann-Whitney U test for non-parametric data.

Results : The hyperthyroid patients showed significantly more resting systolic BP [(122.52±4.2 vs. 117.6±8.32) mmHg, P=0.004], diastolic BP [(83.17±5.24 vs. 78.87±5.65) mmHg, P=0.003] and pulse rate [(72.07±2.81 vs. 69.24±3.09) bpm, P=0.000] than controls. They had less BMI [(22.31±2.25 vs. 24.73±3.1) kg/m², P=0.000]. In HRV, parasympathetic activity markers: they showed significantly less SDNN [35.2(30.4-45.2) vs. 43.75(34.8-56.825) ms, P=0.011], RMSSD [49.95(36.1-75.75) vs. 34.85(20.05-50.95) ms, P=0.019], NN50 [8(1-26) vs. 47.5(7-104.5) , P=0.007], pNN50 [2.9(0.3-8.7) vs. 13.7(1.675-35.15)%, p=0.007], HF power [182(82-279) vs. 606.5(170.25-1026.25) ms², P=0.006] and HF percent [15.6(8.4-25) vs. 28.75(14.2-41.4) percent, P=0.014] than controls. They showed significantly less SD1 [16(11.2-20.9) vs. 24.7(14.18-36.13) ms, P=0.019] than controls. In AFT, the parasympathetic reactivity: Valsalva ratio [(1.36±0.08 vs. 1.48±0.11) P=0.003] and heart rate variation in lying-to-standing [(10.04±1.41 vs. 13.3±2.25) bpm, P=0.000] were significantly less than controls. The sympathetic reactivity: diastolic BP rise in handgrip test [(11.23±2.66 vs. 16.27±3.27) mmHg, P=0.000] was less and systolic BP drop in lying-to-standing [(11.3±5.48 vs. 1.94±2.32) mmHg, P=0.000] was significantly more than controls.

Conclusion : The newly diagnosed hyperthyroid patients have reduced parasympathetic activity and reactivity, and sympathetic reactivity indicative of reduced stress coping ability.

Abs.EN.35

Study of Blink Reflex Alteration in patients of Hypothyroidism

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Objective : Central nervous system (CNS) dysfunction is an important consequence of thyroid hormone deficiency. The neurologic manifestations of hypothyroidism include somnolence, lethargy, retarded mentation, impaired memory, and depression. However, in early stages of this disease clinical manifestations are obscured. In this situation, Blink reflex can be helpful in identifying the underlying central nervous system dysfunction. Thus the aim of this study is to evaluate the usefulness of blink reflex as a method for obtaining an early diagnosis of central nervous system dysfunction in hypothyroid patient who do not have sign and symptom of nervous system dysfunction.

Method : We recruited 150 subjects of age group 18-70 years (100 controls, 50 cases). In all subjects blink reflex study was performed using RMS EMG -EP MARK II.

Results : Second ipsilateral response (R2i) and second contra-lateral response (R2c) latencies in hypothyroid patients were prolonged relative to controls, and the differences were statistically significant. (P<0.05). R1 latency was found to be slightly prolonged in hypothyroid patients as compared to controls; however, the difference is statistically non-significant.

Conclusion : The finding of abnormal blink reflex responses in hypothyroid individuals raises the notion that they may be useful in detecting early changes and in the follow-up

of the patients with this disorder.

Abs.EN.36

A Study of Thyroid Stimulating Hormone in Relation to Height, Weight and Body Mass Index in Clinically Euthyroid Subjects

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Objective : As prime regulators of energy balance, thyroid hormones contribute to the maintenance of body weight. The serum level of Thyroid Stimulating Hormone (TSH) is a reliable index of the functional state of the thyroid gland. The present study was undertaken with the following objective : To study the relation between serum TSH level and the anthropometric parameters – Height, Weight and Body Mass Index (BMI) in clinically euthyroid subjects.

Method : 100 subjects (50 males and 50 females) in the age-group of 18-20 years, found to be clinically euthyroid following history-taking and clinical examination were included in the study. Exclusion criteria were family history of thyroid disorder and intake of any medication that might alter thyroid profile. For each subject, Height (metres) and Weight (kilograms) was measured and BMI was calculated. Serum TSH levels were estimated by Radioimmunoassay method.

Results : Among the subjects (both male and female), a highly significant positive correlation was found between TSH and weight ($r=0.688$, $P=0.01$) and BMI ($r=0.912$,

$P=0.01$). No correlation between TSH and height. Among females, TSH had a moderately significant positive correlation with height ($r=0.297$, $P=0.05$) and a highly significant positive correlation with weight ($r=0.911$, $P=0.01$) and BMI ($r=0.948$, $P=0.01$). Among males, TSH had a highly significant positive correlation with weight ($r=0.728$, $P=0.01$) and BMI ($r=0.890$, $P=0.01$). No correlation between TSH and height.

Conclusion : Small differences in thyroid function, within the normal range, are associated with differences in weight and BMI. Thus, thyroid function may influence the prevalence of obesity in a population.

Abs.EN.37

Study of Hypothyroid Related Atrio Ventricular Block in Elderly Hypothyroid Patients and Assessment of any Reversal After L-thyroxin Therapy

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Objective : We have undertaken this study to uncover the relationship of hypothyroidism with AV conduction blockage in elderly population and the effect of L-thyroxin supplementation to restore the normal pace.

Objectives :

- (1) To detect hypothyroid related AV block in elderly hypothyroid patients.
- (2) To supplement L-thyroxin for 6 weeks and check whether the AV conduction is restored or not.

Method : This study was conducted in Burdwan Medical College, during February-2010 to July-2011 on 42 elderly (>60 years) hypothyroid patients as case and 45 euthyroid subjects as control. ECG was done to assess the degree of AV block. Any degree of AV conduction block noted, was supplemented with L-thyroxin for 6 weeks and later resting ECG was done to assess whether the normal AV conduction was restored or not.

Results : ECG assessment revealed that out of 42 cases, a significant proportion of 62% had increased P-R interval ($P<.001$), whereas 76% out of 45 control had normal P-R interval. After L-thyroxin supplementation, in 69% of the cases, normal P-R interval was restored ($P<.001$, paired T test value 13.484).

Conclusion : In hypothyroid patients AV block detected in resting ECG should be a matter of concern, because if the conduction block is reversed to normal sinus rhythm by thyroxin supplementation, unnecessary pacemaker implantation can be avoided.

Abs.EN.38

A Comparative Study of Thyroid Hormone Status of Pregnant and Non-pregnant Woman in North East Region of India

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Objective : To understand the thyroid hormone status of pregnant and non-pregnant subjects in goitre endemic areas because disorders of thyroid hormones are more common in women and have important effect on the mental and physical growth of the unborn child.

Method : Blood samples were collected from 63 cases of pregnant and 37 cases of non pregnant women who were apparently normal. Serum analysis for Total T3, T4 & TSH estimation was done by the method of Radio-immunoassay (RIA). Statistical analysis were compared using the student's t-test for testing the significance means at $P<0.05$.

Results : T3 level showed an increasing trend from 1st to 3rd trimester of pregnancy. But there was a definite difference between the 1st and 3rd trimester, $t=3.531488$ ($P<0.01$). T4 level between 1st and 3rd and between 2nd and 3rd trimester showed definite difference of $t=3.840315$ ($P<0.01$ and $t=3.860765$ ($P<0.01$) respectively. TSH level comparison was $P<0.01$ between 1st & 2nd and between 1st & 3rd trimester, whereas there was not of much significant increased between 2nd and 3rd trimester. The overall thyroid hormone status in the 1st, 2nd, 3rd trimester was therefore of increased value as expected, but within the normal range. In the control group T3 level was raised in the secretory phases, $t=3.000024$ which was highly significant ($p<0.01$). T4 level was also significantly increased from proliferative to secretory phase, $t=5.263324$ ($P<0.01$). TSH level showed slightly lower mean \pm S.D. of 4.5958 ± 1.8351 into 3.4352 ± 1.9099 , $t=1.751665$ which did

not indicate a significant changes.

Conclusion : Thyroid hormone study showed a higher value during pregnancy period as expected. The north-east region is already known goitre endemic region. Pregnant women should have their thyroid function routinely evaluated and wise to avoid goitrogens.

Abs.EN.39

Study of Visual & Auditory Reaction Time in Different Phases of Menstrual Cycle

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Objective : To evaluate auditory and visual reaction time in different phases of menstrual cycle.

Method : Auditory (tone & click) and visual (red & green color) reaction times for right and left hands were evaluated in 94 female subjects who had a 28 day menstrual cycle. Lowest of 3 readings was noted for each test (msec) on days 1, 5, 13, 14, 15, 21 & 28 of the cycle. The data was analyzed by One Way ANOVA & all pair wise comparisons were done with Bonferroni test.

Results : A statistically significant difference was observed in both the auditory and visual reaction time for both the hands with One Way ANOVA. However, when multiple comparisons were done using all pair wise

comparisons by the Bonferroni test, differences were seen only for days 1, 5, 13, 14, 15 & 21 when compared with day 28. No significant differences were observed between other pairs.

Conclusion : Reaction time is an indirect index of processing capability of the CNS and a simple means of determining sensory motor association and performance of an individual. Previous studies have shown that reaction time is significantly prolonged in the premenstrual period. However, very few studies have examined the reaction time in different phases of menstrual cycle. Pair wise comparisons showed a significant increase in reaction time only during the premenstrual phase (day 28). Premenstrual weight gain has been shown to correlate with the premenstrual neurological symptomatology leading to poor attention and performance. Retention of salt and water due to variation of sex steroid levels influences the axonal conduction time & neurotransmitter availability. This may be the cause of prolongation of both auditory and visual reaction time.

Abs.EN.40

A Comparative Study of Serum Calcium in Vegetarian and Non Vegetarian Post Menopausal Women

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Objective : Menopause is a natural and a normal event in female life which sets in and around in the age of 51 years on average and is defined as the final menstrual period which

is usually confirmed when a women has missed her periods for 12 consecutive months in the absence of other obvious causes. Menopausal women are more prone to calcium loss from bone tissues, making the bones brittle and liable to fracture, a condition known as Osteoporosis.

HYPOTHESIS FORMULATED IS – There exists a significant difference in serum calcium level among vegetarian and non vegetarian post menopausal women.

Method : Forty healthy post menopausal subjects (20 veg and 20 non veg) between age group 51 to 61 years, weight in between 50 to 70 kgs, non smokers, non alcoholics, not on diuretics, not on any hormone replacement therapy, not on any oral calcium supplementation were selected and random blood sample was collected and serum calcium was estimated by an automated analyser.

Results : Applying the t-test, study showed a significant increase in serum calcium level ($P < 0.05$) among post menopausal vegetarian eating subjects than compared to the non vegetarian eating subjects. Hence, the hypothesis is accepted.

Conclusion : From results we can conclude that by modifying the food habits among post menopausal women we can reduce the risk of osteoporosis in them.

Abs.EN.41

A Comparative Study Of Thyroid Function in Male and Female With Advancing Age

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Objective : To find out whether gender difference affects the pattern of thyroid function (hormonal estimation) with advancing age.

Method : We have studied 98 healthy ambulatory euthyroid individual, both male and female, aged between 41-80 years. The selection of study population was done by simple random sampling from a municipal ward area following inclusion and exclusion criteria fixed for the study. Study population was stratified into four groups according to their age, Gr1 (41-50yrs) = 28 (12Male/16 Female); Gr2 (51-60yrs) = 27 (14M/13F); Gr3(61-70) = 23(12M/11F); Gr4(71-80) = 20 (10M/10F). Serum levels of TSH/FT4/FT3 were estimated by ELISA method and data interpretation was done using SPSS version 17. $P < 0.05$ was taken as statistically significant.

Results : There exist a difference of mean serum TSH/FT3/FT4 levels between male and female, among the same age groups. Females show significantly higher TSH level than male counterpart especially after 60 years, whereas FT3 level is significantly higher in females than male counterpart after 70 years. Surprisingly FT4 level does not show any such age associated changes between males and females.

Conclusion : A significant difference of thyroid function exists between male and female population with advancing age.

The physiological mechanism behind this observation is yet to be explored by further studies.

Abs.EN.42

Hormone Replacement Therapy Increases Serum Levels of Nitric Oxide End Products

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Objective : Cardiovascular disease is the leading cause of illness and death in women. Women appear to have greater resistance to atherosclerosis in the pre menopausal years and this is attributed in part to an estrogen dependent increase in the basal nitric oxide synthesis. Women in post menopausal years have estrogen deficiency due to the waning ovarian activity. Hormone replacement therapy potentiates the release of endothelium derived relaxation factor, Nitric oxide and thus reduces the risk of coronary artery disease in postmenopausal women.

Method : The study group included fifty postmenopausal women and the control group included fifty healthy women with regular menses. Serum levels of nitric oxide end products (NOEP) were measured in the control group and before and after hormone replacement therapy in the in the study group. Women in the study group were placed on Hormone replacement therapy (HRT) for six months.

Results : Serum NOEP levels in the study

group before hormone replacement therapy (19.57 ± 2.44) were significantly lower ($P < 0.001$) than the control group (34.58 ± 6.23). The serum NOEP levels increased significantly ($P < 0.001$) after hormone replacement therapy (29.97 ± 3.82) in the study group. The rise was significantly ($P < 0.001$) in the hysterectomised post menopausal women (31.08 ± 2.84).

Conclusion : The findings indicate that Hormone Replacement Therapy Increases Serum Levels of Nitric Oxide End Products.

Abs.EN.43

The Effect of Hormone Replacement Therapy on Brain Activity

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Objective :

1. To study the brain activity (fine motor co-ordination) in postmenopausal women (taking hormone therapy and not taking hormone therapy).
2. To investigate whether hormone therapy in postmenopausal women can improve brain activity, specifically functional cerebral asymmetries in fine motor co-ordination, as reflected by manual asymmetries.

Method : Sixty postmenopausal women all who had attained menopause since one year were studied. All were right handed.

Twenty of them were on hormone therapy (either on estrogen alone or combined

estrogen and progestogen); and forty of them were not on hormone therapy.

Manual asymmetries were measured with a finger tapping method consisting of two different conditions :

1. Simple (repetitive) finger tapping as rapidly as possible.
2. Sequential finger tapping using four fingers in the given complex sequence.

Results : Postmenopausal women without hormone therapy showed reduced manual asymmetries in simple finger tapping. But, in the more demanding sequential condition, they showed enhanced manual asymmetries in favour of the dominant hand.

In contrast, postmenopausal women on hormone therapy showed reduced manual asymmetries in sequential finger tapping, but an enhanced asymmetrical tapping performance in simple finger tapping. A similar pattern has previously been found in younger women.

Conclusion :

1. In postmenopausal women, there is an insufficient recruitment of critical motor brain areas (especially when the non-dominant hand is used), probably due to age-related changes in corticocortical connectivity between motor areas.
2. Hormone Replacement Therapy probably exerts positive effects on the motor system counteracting an age-related reorganization.

Abs.EN.44

A Study on Assessment of Pulmonary Ventilation with Spirometry in Clinical And Subclinical Hypothyroidism

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Objective – It is quite well known that pulmonary ventilation is hampered in thyroid hormone dysfunctional states. The aim of our study was to assess the pulmonary ventilation in subclinical hypothyroidism patients (who have normal fT_4 level with only elevated TSH) in comparison with clinical hypothyroidism patients (who have elevated TSH and below-normal fT_4 values) as well as control group of subjects.

Method : This observational, cross-sectional study included 43 patients of clinical hypothyroidism, 41 patients of subclinical hypothyroidism and 50 euthyroid control subjects. Serum TSH and fT_4 levels were determined by ‘Quantitative EIA method’ using RFCL-manufactured commercial “ELISCAN - TSH” - kit and “ELISCAN - fT_4 ”-kit. Spirometry analysis was performed on portable RMS Helios 401 Spirometer .We determined FVC (L), FVC%, FEV_1 (L), FEV_1 %, FEV_1/FVC (%), FEF_{25-75} (L), FEF_{25-75} %, PEF(L), PEF%.

Results : There were significant differences ($P<0.05$) of all spirometric means when groups with subclinical and clinical hypothyroidism are compared with control group except FEF_{25-75} % in subclinical hypothyroidism patients. We also found difference of spirometric means between clinical and subclinical groups that reached statistical significance ($P<0.05$). In our study, we observed a significant negative correlation between TSH and both of FEF_{25-75} & PEF in clinical hypothyroidism group; and also a

significant positive correlation between fT_4 and each of FEV_1/FVC (%), FEF_{25-75} , $PEFR(L)$. In subclinical hypothyroidism group, FVC & FEV_1 are found to have significant negative correlation with TSH; also FVC , FEV_1 & $PEFR$ have significant positive correlation with fT_4 .

Conclusion : Therefore, our study points to the fact that pulmonary ventilation is affected in subclinical hypothyroidism patients as in clinical hypothyroidism group, though in milder degree. So, early screening followed by treatment of these patients may be considered.

Abs.EN.45

A Study of Serum Prolactin Levels Among Different Types of Sportswomen

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Objective : Prolactin is a pleiotropic, neuroendocrine hormone produced by the anterior pituitary gland. Though primarily associated with lactation, it is also postulated that its values increases linearly with exercise induced stress and also is associated with various menstrual irregularities in female sportspersons and its value also reflects compliance and tolerance to physical exercise.

Method : 30 healthy subjects (10 Boxers, 10 Weightlifters and 10 athletes) between the age group of 20-30 years were selected. Blood sample was collected and serum prolactin was estimated by radioimmunoassay.

Results : It has been found that the boxers

group has the highest mean score of serum prolactin than their counterparts. Regarding statistical significance, F-test (ANNOVA) has been applied and it has been found that there exists no significant difference in mean serum prolactin level among three categories of female sportspersons.

Conclusion : So, it has been concluded that boxer group has the highest mean score of prolactin but within the normal limits. Hence, various types of sports can affect the level of serum prolactin in different ways.

Abs.EN.46

A Comparative Study of Serum Prolactin Levels Among Female Athletes and Non Athletes

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Objective : Prolactin or Leucotropic hormone is a peptide hormone secreted by anterior pituitary gland. Although mainly associated with lactation in humans, it exerts several other biological effects. And there are numerous studies indicating that its level increases with increasing physical stress, however, there is little information on the influence of regular physical exercise on the baseline prolactin level in female athletes. Therefore, the aim of this study was to compare serum prolactin levels in female athletes with those of a control population of healthy sedentary females of the same age group.

HYPOTHESIS FORMULATED : There exists a significant difference in the serum prolactin

levels of athletes as compared to non athletes.

Method : A group of 40 females (20 athletes and 20 non athletes) were selected randomly for the test. They never took any medications containing steroid hormones and were in good health at the time of test. Their serum prolactin levels were determined by using specific Radioimmunoassay kits applying tubes coated with antibodies.

Results : Analyzing the obtained data by applying student t-test, it showed that there is a significant difference ($P < 0.05$) between the serum prolactin levels of the two groups. The mean serum prolactin level of athletes (22.41 ± 3.99) was found to be significantly higher as compared to that of non athletes (8.86 ± 2.40). Hence, the hypothesis is accepted.

Conclusion : From the above results it can be concluded that physical stress in the form of exercise can lead to increased serum prolactin level, probably leading to reproductive disorders like infertility and disturbances in menstrual cycle.

Abs.EN.47

Serum Prolactin During Labour and Early Puerperium : A Comparative Study in Primiparous and Multiparous Patients During Labour and Early Puerperium

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Objective : Prolactin is the main hormone of lactogenesis and lactation. Its level rise during

the pregnancy, followed by a fall during labour. After childbirth its level again rises steeply. However previous studies have shown an inverse relationship between stress and prolactin level. Thus our study was undertaken to study whether the different stress levels in primiparous and multiparous subjects caused any corresponding change in their prolactin levels.

Method : Maternal serum prolactin levels were measured during labour and early puerperium in 26 uncomplicated pregnancies (16 primi and 10 multi). Serum prolactin was analyzed with commercial immuno-radiometric assay kit (IRMA, Beckman Coulter), the samples were counted in a fully automatic Gamma Counter (Gamma -10 Version 2.0, Shin Jin Medics.)

Results : The mean values of serum prolactin in primiparous and multiparous patients during labour and puerperium were calculated and paired t-test was done. In PRIMIPAROUS patients, the mean prolactin values during puerperium (142.426 ng/ml) were SIGNIFICANTLY higher ($P < 0.005$) than the values during labour (77.24 ng/ml). The mean values of prolactin in MULTIPAROUS women during puerperium (136.115 ng/ml) were higher than the values during labour (114.255 ng/ml), but they were NOT SIGNIFICANT ($P > 0.005$).

Conclusion : Our study thus showed that serum prolactin levels rise following parturition in both primiparous and multiparous subjects. This rise is however significant in case of primiparous subjects. These changes in prolactin levels could be attributed to the emotional and physical stress of labour which is more pronounced in

primiparous subjects compared to multiparous ones

Abs.EN.48

Correlation of Menopausal Status With Fasting Blood Glucose in Preobese & Obese Women in the Age Group 45–49 Yrs

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Objective : Obesity is common in women aged between 45-49 yrs. To study correlation of menopausal status with fasting blood glucose levels of the Normal weight, Obese & Preobese women to assess the Prediabetic status.

Method : Fasting Fasting Blood Glucose levels and BMI were estimated in 300 asymptomatic women with no family history of Type 2 Diabetes Mellitus (D.M.). Pre & Post menopausal subjects are divided in Control (I), Preobese (IIa) & Obese group (IIb). The results is analyzed statistically ANOVA test.

Results : Mean FBG levels in preobese and obese group are higher than control group in both pre & post menopausal women. There is significant difference between BMI & Fasting Blood glucose levels in Pre & post menopausal women.

Conclusion : In a nutshell obesity with & without menopause both act as a important predictor for type 2 D.M. Thus in premenopausal women lifestyle modifications may prove as

important means for prevention of obesity & type 2 D.M to minimize the complication in post menopausal status.

Abs.EN.49

A Comparative Study of Body Mass Index, Waist-hip Ratio and Blood Pressure in Pre and Post-menopausal Women

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Objective : To study body mass index, waist-hip ratio and blood pressure in pre and post-menopausal women. To compare the results of above parameters in pre and post-menopausal women.

Method : The study involved 60 female subjects of age group 20-55 years, grouped into 30 pre and 30 post-menopausal women. After taking informed consent, age, height, weight, body mass index, waist circumference, hip circumference, waist-hip ratio, systolic and diastolic blood pressure were recorded. Blood pressure (BP) was recorded by auscultatory method in 3 settings. Post-menopausal women taking hormone replacement therapy were excluded.

Results : Means of all variables were significantly higher in post-menopausal than pre menopausal women.

Conclusion : The present study has shown that the general level of BP is significantly higher in post-menopausal women. The reasons responsible for increasing blood

pressure in post-menopausal women are hormonal imbalance. Increase in body mass index and waist-hip ratio also contributes in it.

Abs.EN.50

Study of Dynamic Lung Function Test Parameters in Early and Late Third Trimester of Pregnancy : A Comparison With Non Pregnant Women

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Objective : To assess and compare the change in lung function test parameters in early and late third trimester of pregnancy vis a vis those in the non pregnant control subjects of the same age.

Method : This study was conducted on 100 pregnant women in third trimester of uncomplicated pregnancy visiting OBG department of CMC Ludhiana (cases) and 100 non pregnant women (control). Subjects with history of known respiratory or cardiovascular disease, anaemia and existing antenatal complications were excluded from the study. Cases were further subdivided as per the gestational age into two groups of ≤ 34 weeks and > 34 weeks gestation. Pulmonary function test parameters FVC, FEV1, PEF and FEF(25-75%), FEV1/FVC. were evaluated with digital Medspiror.

Results : The study revealed a decrease in PFT values in the ≤ 34 weeks group as compared to the control group which was

statistically not significant. But a comparison of PFT in > 34 vs control group, showed significant decrease in all PFT's except FEV1/FVC ratio. A similar decline was seen while comparing the subgroups of the study group i.e. < 34 wks Vs > 34 wks groups.

Conclusion : The present study highlights that the respiratory parameters are significantly compromised due to gravid state in the late last trimester of pregnancy which if accentuated are likely to affect the outcome of the pregnancy.

Abs.EN.51

Study Body Composition in Osteoporotic and Non-osteoporotic Physically Active Postmenopausal Women

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Objective : To compare the body composition parameters like Body Mass Index (BMI), lean mass, fat mass and fat mass percentage with Bone mineral density in osteoporotic and non-osteoporotic women.

Method : This was a cross sectional study carried out in 300 physically active postmenopausal women aged between 40 and 60 years with years since menopause (YSM) 1-10 years. Subjects taking drugs affecting bone metabolism were excluded from the study. Percentage body fat (%BF) was calculated from the formula based on BMI. Fat mass and lean mass were calculated from %BF. Bone Mineral Density was measured

by QUS (Qualitative Ultrasound) method gives the result is in the form of T-Score to assess osteoporotic status. Analysis of data was done by using SPSS software version 10 using Z test.

Result : The result shows a significant higher BMI, percentage fat mass, fat mass and lean mass in the non-osteoporotic as compared to the osteoporotic postmenopausal women.

Conclusion : This proves that both components of body composition, higher fat mass and lean mass are protective for the bone mineral density of physically active postmenopausal women.

Abs.EN.52

White Compact Fluorescent Light Phototherapy Provides Less Cardiac Stress Than Blue Light on Jaundiced Neonates: a Case Control Study

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Objective : We investigated the effects of blue and white compact fluorescent phototherapy on cardiac autonomic modulation through heart rate variability in otherwise normal full-term jaundiced neonates. There are few studies on the effect of phototherapy on heart rate variability and also we found no literature which has compared the effects of blue and white light on heart rate variability.

Method : 60 full-term jaundiced neonates were randomized into two groups having similar baseline characteristics. Each neonate was

exposed to assigned colored phototherapy and lead II ECG was recorded before and during phototherapy. The recordings were analyzed for HRV in frequency domain using Fast Fourier Transformation and compared with appropriate statistics.

Results : Blue CFL Phototherapy was found to cause significant diminution in the HRV as compared to white. White light also caused insignificant changes in heart rate. As indicated by the LF, and LF/HF ratio, sympathovagal balance was tipped towards sympathetic predominance. These effects were more pronounce with blue light as compared to white light phototherapy.

Conclusion : Our results indicate that phototherapy is an additional stress on the cardiovascular system of the newborn as shown by decrease in HRV. Although, it may be of little significance is term healthy neonate but it may have deleterious effect on preterm and sick neonate. As blue light is associated with greater decrease in HRV it should be used with caution in sick neonates where white light is more physiological and safer alternative.

Abs.EN.53

Relationship Between Recurrent Aphthous Stomatitis, Age and Serum Cortisol in Young Adults

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Objective : Recurrent Aphthous Stomatitis (RAS) is the most common oral ulcerative condition and it affects 20% of the general population. There are several hypotheses for the etiology for RAS but none are conclusive. Increased levels of plasma cortisol are observed and give evidence of an intensified and sustained stress response. The present study was undertaken to measure the serum cortisol in subjects of different age groups with RAS.

Methods : 39 Subjects in the age group of 18 to 30 years with RAS were recruited for the study between Jan 2011 to May 2011. After informed consent, Serum Cortisol was measured using Radioimmunoassay method (RIA). Subjects were divided into group A 18-21 yrs (n=27), group B 22-25 years (n=4), group C 25-30 yrs (n=8). The incidence of RAS and serum cortisol in the three groups was compared using one-way ANOVA.

Results : The number of subjects suffering from RAS decreases with age. The serum cortisol levels were found to be 108.43 ± 60.77 ng/ml in group A, 114.48 ± 26.00 ng/ml in group B and 160.64 ± 94.72 ng/ml in group C respectively.

Conclusion : It is found that the incidence of RAS decreases as age advances. The level of serum cortisol progressively increases from 18 to 30 years showing an increase in stress levels. The stress level increases as the age advances from 18 to 30 years even though it may not manifest as RAS in the higher age group.

Abs.EN.54

Whole-transcriptome Profiling of Human

First Trimester Placental Villi

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Objective : During 6- to 8-weeks of gestation, human placental villi grow markedly involving a complex pattern of morphogenesis through balanced expression of proliferation, differentiation and apoptosis in different subpopulations of trophoblast and mesenchymal cells with different functions and fates. However there are limited reports about large-scale genomic expression study of the human first trimester placental villi. In present study, we propose to employ high throughput microarray to delineate the transcriptomics of early human placenta.

Methodology : Human placental villi samples from twenty-five (25) North-Indian women with normal pregnancies during 6- to 8-weeks of gestation were examined using human whole genome expression arrays. Real-time RT-PCR validation of copy numbers of transcripts for selected twelve (12) genes were performed for validation of the study and to quantify gene expression.

Results : A large number (~9K) of genes with known functions were expressed in the experimental samples. *Post-hoc* enrichment and networks-process analyses revealed that several signaling pathways linked to immunity were down-regulated, along with genes of the enriched category of anti-viral immunity being clearly expressed in the human first trimester

placental villi. Additionally, transcriptional integration supportive of programmed development was observed in the first trimester placental villi; this process included regulation of apoptosis, autophagy, cell cycle progression, and epithelial-to-mesenchymal transition. Further, the results revealed marked expression profiles for specific transcripts of several protein hormones, enzymes for steroid hormone synthesis, membrane bound transporters, neurotransmitter receptors and olfactory receptors in the human placental villi during 6- to 8- weeks of gestation.

Conclusion : The genome-wide transcriptomic data reported in the present study bear promise of large-scale induction of many new hypotheses for future studies.

Abs.EN.55

Estimation of Serum Homocysteine (tHcy) Level Among Adult Urban Population of Manipur

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Objective : To determine serum tHcy level and to assess the relationship between serum tHcy level and sex of the participants.

Method : 64 serum samples (32 males & 32 females) were randomly taken from the normal adult urban population of Manipur within the age group 20-60 years. Estimation of serum tHcy concentration is carried out by using EIA kit from Ranbaxy Diagnostic Ltd, India analysed by Microplate reader, model no- RT-21006, Rayto (Germany) in the Physiology Department, RIMS. All the data obtained from

the study were statistically analysed.

Results : The mean serum tHcy level was 18.22 micro mol/L with 22.6 micro mol/L in males and 13.7 micro mol/L in females with appreciable gender effect (P=0.001). Elevated serum tHcy levels were observed in 25 males and 12 females.

Conclusion : Above results show that serum tHcy differ significantly with gender and the prevalence of hyperhomocystenemia in adult urban population of Manipur is 57.8125%.

Abs.EN.56

Migraine – Is it Related to Hormonal Disturbance or Stress ?

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Background : Migraine, a common neurological syndrome is more common to women than to men. Women are twice as likely to experience migraine without aura during the first two days of their menstrual cycle than during the rest of the month. As migraine is associated with menstruation, ameliorated by pregnancy and

almost diminished after menopause, this suggests hormonal disturbances or fluctuations in estrogen as a main causative factor. In spite of this, the headache during menstruation is not different from stress headache.

Objectives : Thus, in the present study, we tried to analyze whether the Common Migraine (Migraine without aura) is due to hormonal disturbances or stress.

Methodology : We have assessed the hormonal status in 30 young adult females of age group 18-35 yrs on second day of their menstrual cycle and compared with 30 age matched controls. A diary for migraine attack was maintained and the Das Questionnaire was filled to assess stress. This was supported by biochemical assessment of hormone profile.

Results : There was significant rise in prolactin levels ($P < 0.001$) as compared to control while the levels of estrogen, ($P = 0.77$) progesterone, LH, FSH and thyroid hormones did not show a statistically significant difference. Conclusion The results suggest that stress is the main causative factor of migraine in young adult females.

Key words : migraine, stress, fluctuating estrogen

Abs.EN.57

Study of Several Patterns of Anemia in Pregnancy

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Objective : To study the different patterns

of anemia in pregnancy. To correlate haematological parameters with clinical features. To evaluate possible etiological factors

Method : The present study was conducted in Chigateri General Hospital and Bapuji Hospital attached to J.J.M. Medical College, from September 9th 2006 to November 9th 2006. About 100 cases of anemia were studied and analysed.

Sample size (n): 100

Inclusion criteria : All the pregnant women whose Hb% is less than 10 gm/dl

Exclusion criteria : Non-co operative patients.

1. Hemoglobin estimation: It is done by CYANMETHHAEMOGLOBIN METHOD. It is the most accurate method.
2. Peripheral smear slide preparation.

Results : The present study shows incidence of mild degree of anemia is 23%, moderate degree of anemia is 71% and severe degree of anemia is 6%. All the patients are belonged to rural areas. 46% of cases belonged to low class with max of < 300 Rs/month. 50% belong to middle class and 3% in high socio-economic status. 80% of the patients in the present study belongs to third trimester. 20% belongs to second trimester and none of patients belongs to first trimester. The highest incidence of anemia is seen in multi gravida, about 68%. 32% belongs to primi gravida and none belongs to grand multi gravida. The present study showed that most Common patterns of anemia are dimorphic anemia about 58% iron deficiency anemia about 38% and remaining 2% belong to megaloblastic anemia.

Conclusion : Anemia in pregnancy constitutes one of the major threat to mothers life during pregnancy, labour and perperium. This is one of the major pregnancy disorder constitute for maternal and perinatal mortality and morbidity.

The high risk patients should be identified early and should be advised to have regular ANC and prophylactic iron and folic acid should be administered. Anemia is a preventable condition. So all pregnant women must be observed and managed with adequate maternal and neonatal intensive care facilities to improve the outcome.

Abs.EN.58

Neonatal Hypothyroidism

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Objective : In conditions of maternal iodine deficiency, the frequency distribution of neonatal thyroid stimulating hormone (TSH) is shifted towards elevated values. Elevated serum TSH in the neonates indicates insufficient supply of thyroid hormones to the neonates, a major complication of iodine deficiency. This small study was done to determine the cord blood serum T₄ and TSH levels and interrelationships with maternal thyroid hormones.

Method : Cord blood serum T₄ and TSH levels of 45 consecutive newborns born at

BPKIHS, Dharan, Nepal and maternal T₄ and TSH levels were analyzed using ELISA based kits.

Results : The mean age of women was 23.73±3.86 years and average weight of their babies was 57.71±5.95 kg. The median levels of maternal and neonatal T₄ were 1.09 ng/dl and 1.26 ng/dl respectively. The corresponding median TSH levels were 3.71 mIU/L and 11.9 mIU/L. The maternal and neonatal levels of T₄ were positively correlated. In 36 mothers who had TSH level within euthyroid range (0.3-6.2 mIU/L, Thyroid lab of BPKIHS), 22 neonates (61.11%) had TSH levels above 10 mIU/L. Among 9 mothers having TSH levels above 6.2 mIU/L, 7 (77.77%) neonates had TSH levels above 10 mIU/L.

Conclusion : Overall 29 (64.44%) neonates had TSH level above 10 mIU/L which indicates mild degree of iodine deficiency. Iodine supplementation is required before pregnancy in majority of women of reproductive age.

Abs.EN.59

Assessment of Foetoplacental & Uteroplacental Circulation in Normal Pregnancies & Pregnancy Induced Hypertensives Using Color Doppler Studies

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Objective : To evaluate the differences in uteroplacental & foetoplacental circulation in

normal pregnancy & pregnancy induced hypertension using color Doppler indices and to search for correlations between these blood flow changes & fetal growth patterns.

Method : Total 50 pregnant subjects, aged 24-32 years with 28-34 weeks of gestation were selected and divided in two groups, group A of normal pregnant females (n=25, controls) and group B of pregnancy induced hypertensives (n=25, cases). Blood pressure recording, complete hemogram and urine analysis was done in all subjects. Ultrasound modality was used to assess fetal growth using BPD (Biparietal diameter), HC (Head circumference), AC (Abdominal circumference), FL (Femur length) parameters and blood flow by using doppler indices - PI (Pulsatility index), RI (Resistivity index) and SD ratio (Systolic diastolic ratio) in umbilical, uterine and middle cerebral artery. Effective fetal weight was estimated through in-built computer in ultrasound machine and compared.

Results : Highly significant differences were found in doppler indices in umbilical artery (PI>RI>SD ratio) between Gp. A & Gp. B. Less significant differences were found in middle cerebral artery doppler indices in between two groups. No significant difference was found in uterine artery doppler indices. Assessment of fetal growth patterns was done. In Group A effective fetal weight in all subjects was found to be in between 10th-90th percentile. Neither any abnormal doppler indices nor any intrauterine growth retardation was seen in controls. Out of 25 pregnancy induced hypertensives subjects, 5 had intrauterine growth retardation. In 5 subjects showing intrauterine growth retardation, all the 5 (33%) showed abnormal umbilical artery indices, 4 (26%) of them

showed abnormal uterine artery indices and 2 (16%) of them were associated with abnormal middle cerebral artery indices.

Conclusion : Significant changes are seen in values of doppler indices in pregnancy induced hypertensives as compared to that of normal pregnant females suggesting more impedance to uteroplacental blood flow in pregnancy induced hypertensives. Umbilical artery doppler indices were found to be the most sensitive indicator of uteroplacental and fetoplacental insufficiency.

Abs.EP.01

Comparison of Respiratory Function of Antenatal Cases Living in High Altitude and Plains

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Objective : To determine whether the pulmonary function varies in antenatal cases living in high altitude and plains.

Method : 60 healthy uncomplicated antenatal cases in II trimester irrespective of either primi or multigravida within the age group of 20-30 yrs (30 cases residing at altitude of about 2268 meters from the sea level and 30 cases residing in plains) were taken for this study. Height, weight and BMI were measured and Pulmonary Function Test was done using a computerized Spirometer in sitting position. Peak Expiratory Flow Rate (PEFR) values are taken as a predictor of PFT in these antenatal cases. The values are statistically analyzed by "Unpaired Student-T Test".