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XXII ANNUAL NATIONAL CONFERENCE OF ASSOCIATION OF MEDICAL BIOCHEMISTS OF INDIA (AMBICON2014)

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Editors' Message

The Association of Medical Biochemists of India (AMBI) has been actively involved in organizing state chapters and an Annual Conference every year. The 22nd Annual National Conference of AMBI (AMBICON 2014) is being held at Tirupati from 14th to 16th November, 2014. The Journal of Clinical and Scientific Research, in its endeavour to publish and highlight research has provided the scientific abstracts of the research papers (Award, Platform and Poster presentations) due for presentation at the AMBICON 2014 to its readers as a Supplement to Vol. 3(4) of the journal.

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SCIENTIFIC PROGRAMME

XXII ANNUAL NATIONAL CONFERENCE OF ASSOCIATION OF MEDICAL BIOCHEMISTS OF INDIA - AMBICON 2014

THEME: BIOCHEMISTRY AS CLINICAL SPECIALITY

VENUE: HOTEL FORTUNE SELECT GRAND RIDGE, SHILPARAMAM, TIRUCHANOOR ROAD, TIRUPATI

Hall-A

November 14th

Time	Session	Topic	Chairpersons
10:00 - 10:30	Dr. Akhoori S.S. Sinha presidential oration	Incretins Dr Sanjeevi Rao,	Dr T.K. Mishra Dr K. Shanti Naidu
10.30 - 11.00	Dr. R.C. Sitadevi Oration	Evolution of clinical chemistry laboratory Dr PVLN Srinivasa Rao	Dr Pragna Rao Dr. Gautam Sarkar
11:00 - 11:30	Guest lecture	Endocrine tumorigenesis Dr Thomas Paul,	Dr K.N.Subha Kumari Dr Shrabani Mohanty
12:00 - 12:30		Genomics Dr Ashwin Dalal,	
12:30 -13:00	Symposium -Omics	Metabolomics Dr Pramod Ingale	Dr Dinesh Puri, Dr KSS Saibaba
13:00 - 13:30		Transcriptomics Dr Sandeep Kumar Mathur	
13:30 - 13:45		Panel discussion	
14:15 - 14:30	Guest lecture	Effect of lifestyle on adrenal hormones Dr. T. Ranga Rao	Dr. Pramila Kumari Mishra
14:30 - 15:00	Guest lecture	Combating oxidative stress: The therapeutic potential of Nrf2 activation	Dr. Sanjeevi Rao Dr. PVLN Srinivasa Rao
15:30 - 16:00	Guest lecture	Factors affecting HbA1c levels Dr Pavai Sthaneshwar,	Dr Anju Jain Dr K.Madhavi
16:00 - 17:00	PG Debate		
		November 15th	
08:00 - 09:00	Platform presentations		Dr.V.S.Kalaiselvi Dr Thuti Mohan
09:00 - 09:30	Dr S. Gopal Krishnan Oration	Endocrine role of Skeleton and Heart - Dr N. Siva Mohan Das	Dr.Govindaraju Dr Basudev Bhattacharya
11:30 - 12:00		Pre-Analytical Quality: Bench-marks for Laboratory Quality Dr Adarsh Pal Singh	
12:00 - 12:15	Symposium - Quality management	Six sigma Dr Animesh Bardoli	Dr Barnali Das Dr. MV Bhaskar
12:15 - 12:45		NABL Accreditation Dr K. Shanti Naidu,	
12:45 - 13:15		Webinar : Dr Graham Jones,	
13:15 - 13:30		Panel discussion	

14:00 - 14:30	Symposium -Acute kidney injury	Biochemical aspects of AKI Dr Aparna R. Bitla, AKI-clinical aspects	Dr K. Shanti Naidu Dr V.Siva Kumar
14:30 - 15:00		Dr Chakravarthi,	
15:00 - 15:15		Panel discussion	
15:15 - 16:15	Debate: UG curriculum		Moderators: Dr NSV Chowdary Dr Jasbinder Kaur Dr Govinda Raju Dr. Sanjeevi Rao
16:45 - 17:45	Award papers session		

November 16th

08:00 - 09:00	PG Quiz		Dr V.K.Ramadesikan
09:00 - 09:30	Guest lecture	Teaching methods: UG & PG training - Dr Dinesh Puri	Dr D.S. Jaya Prakash Murthy Dr Shilpa Jain,
09:30 - 10:00	Dr. S. D. Mallikarajuna GL-Kodliwadhmath Oration	Role of Serological Markers in Celiac Disease Dr. Navjot Bajwa	Dr.Pragna Dolia Dr.Veena Singh Ghaulat
10:00 - 10:30	Dr A.S.Saini Oration	How does inflammation affect iron homeostasis? Dr Molly Jacob	Dr Jasbinder Kaur, Dr W Ebenezer William
10:30 - 11:00	Prof.Sadasivudu Oration	Vitamin D - one man army Dr C.V. Harinarayan	Dr Pramod Ingale Dr K.Shanthi Naidu
11:30 - 12:00	Guest lecture	Therapeutic drug monitoring Dr P.Usharani	Dr H.L.Vishwanath Dr Uday Kumar
12:00 - 12:30	Guest lecture	Biochemical diagnosis of infectious diseases Dr Senthil Kumaran	Dr Anju Jain Dr. A. D. Deepak
12:30 - 13:00	Guest lecture	Computational methods in Biochemistry - Dr MV Bhaskar	Dr.K.S.S. Sai Baba Dr.P.K.Mohanty
13:30 - 14:00	Platform presentations		Dr Santhi Silambanan Dr S Srivani

HALL - B

November 14th

Time	Session	Topic	Chairpersons
12:00 - 12:30	Corporate session Beckman Coulter	Dr. A. Manjula	
12:30 - 13:00	Corporate session Randox		
13:00 - 13:30	Corporate session Bio-Rad		
13:30 - 13:45	Guest Lecture	Dr Basudev Bhattacharya	Dr S.K.Vardey,
14:15 - 14:30	Guest lecture	Quiz Programmes in Get-together on Biochemistry Dr. W.Ebenezer William	Dr Bhishamber Dass Toora
14:30 - 15:00	Guest lecture	Serum electrolytes and osmolality Dr C. Shanmugapriya	Dr.D.M.M.Raj Kumari Dr Santi Silambanan

November 15th

08:00 - 09:00	Platform presentations		Dr. Vinodhini.V.M Dr Shivani Jaswal
11:30 - 11:45	Guest Lecture	Lung Cancer Markers Dr VS Saini	Dr.Veena Singh Ghaulat
11:45 - 12:00	Guest Lecture	Tryptase-New diagnostic and prognostic marker of AML AND CML Dr PS Ghalaut	Dr Pramod Ingale
12:00 - 12:15	Guest lecture	Vitamin B12 in Health and Diseases: A shifting paradigm Dr B.C. Kabi ,	Brig S Bandyopadhyay
14:00 - 14:15	Guest lecture	New horizons after M.D.Biochemistry Dr. Shilpa Balaji Asegaonkar	Dr. Vivian D Souza
14:15 - 14:30	Guest lecture	HLA typing and transplantation Dr. Anubhuti	Dr. Navjot Bajwa,
16:45 - 17:45	Platform presentations		Dr. Cariappa K B Dr P.Prabhakar Rao

November 16th

09:00 - 09:30	Guest lecture	Recent cardiac markers Dr Shaheena Banu	Dr.Gurupadappa K,
11:30 - 12:00	Platform presentations		Dr. D Suhasini, Dr Sunil Kumar Nanda
12:00 - 12:30	Platform presentations		Dr. Girish M Desai
12:30 -13:00	Guest lecture	Link between immunity and inflammation Dr V.S.Kiranmayi	Dr Senthil Kumaran Dr N. Madhavilatha

Hall-C

November 14th

Time	Session	Chairpersons
11:00 - 11:30	Platform presentations	Dr Medha Rajappa, Dr.Y.Ruth Lavanya
12:00 - 13:00	Platform presentations	Dr S.K.Gupta, Dr Anupama Hegde
13:00 - 13:45	Platform presentations	DR. Meera. S, Dr D.V.Krishna Veni
14:15 - 15:00	Platform presentations	Dr Keya Pal, Dr.Krishnamma. M
15:30 - 16:00	Platform presentations	Dr. Jothi Malar, Dr. Deepali M Vaishnav
November 15th		
08:00 - 09:00	Platform presentations	Dr Shruti Mohanty, Dr Subhosmito Chakraborty
11:30 - 12:00	Platform presentations	Dr J. Helena Rajakumari
12:00 - 12:45	Platform presentations	Dr.J.Rama Rao, Dr.A.Saseekala
14:00 - 14:30	Platform presentations	Dr J.N. Naidu
16:45 - 17:45	Platform presentations	Dr V Sreeramulu, Dr Prashanth Vishwanath
November 16th		
09:00 - 09:30	Platform presentations	Dr. Anubhuti
11:30 -12:00	Platform presentations	Dr J.Helena Rajakumari
12:30 -13:00	Platform presentations	Dr K. Pratibha

Abstracts of Awards session Platform Presentations (AMBICON – 2014)

Clinical utility of estimation of urinary nephrin levels as an early biomarker in diabetic nephropathy

D. Parveen, V. Prashant , P. Akila, D. Devananda , M.N. Suma
Department of Biochemistry, JSS Medical College, Mysore

Objectives: To estimate the urinary nephrin levels and to determine the sensitivity and specificity of this biomarker to predict diabetic nephropathy.

Materials and Methods: Fifteen normal individuals in the age group of 45 – 60 years (Group 1),fifteen diabetic subjects without any features of diabetic nephropathy (Group 2), Forty five diabetic patients who had suspected features of diabetic nephropathy were included (Group 3). Group 3 subjects were further divided into: 15 patients with CKD stage 2 (Group 3a), 15 patients with CKD stage 3 (Group 3b), 15 patients with CKD stage 4 (Group 3c). About 5-10ml midstream early morning urine sample was collected in sterile container for the estimation of the urinary nephrin level by ELISA method & spot urine protein creatinine ratio. The blood sample was collected for estimation of glucose, urea, creatinine and HbA1c levels.eGFR were calculated using the DaVita GFR Calculator which uses the MDRD4 revised equation.

Results: Urinary nephrin showed a positive correlation with fasting blood glucose levels (r =0.07), HbA1c levels (r = 0.194), serum urea (r = 0.075) and serum creatinine levels (r = 0.272) in the study group and control groups. Receiver operator characteristics curve plotted for urinary nephrin levels showed that at a cut off level of 1.317 ng/µL urinary nephrin showed 90.3% sensitivity and 75% specificity to detect chronic kidney disease stage 2 due to long standing diabetes mellitus.

Conclusion: Thus urinary nephrin estimation can be used for the early diagnosis of renal damage due to long standing diabetes mellitus.

Parveen D, Prashant V, Akila P, Devananda D, Suma MN. Clinical utility of estimation of urinary nephrin levels as an early biomarker in diabetic nephropathy. J Clin Sci Res 2014;3(Suppl 3):A1.

Urinary HPL: a monitoring marker for schizophrenia and its relation to oxidative stress and trace elements

Lipika Behera
Department of Biochemistry, M.K.C.G. Medical College, Berhampur

Objectives: Recent studies have implicated excess urinary HPL(previously known as kryptopyrrole) in psychiatric conditions such as schizophrenia. A few investigators have observed a decrease in antioxidant defense mechanisms, increase in the total oxidant load, copper toxicity and zinc deficiency inschizophrenia cases. Hence the objective and purpose of the study is to correlate oxidative stress, trace elementsconcentration and levels of urinary HPL with severity and duration of schizophrenia.

Material and Methods: It is a case-control study. The study includes equal number of patients and controls. The patients were selected as per PANSS Scoring. Early morning urine sample was collected in vitamin-C treated vials.Urinary HPL was estimated by Ehrlich's reaction and extraction in chloroform.Venous blood was collected under aseptic conditions after overnight fast. Serum total oxidant stress load by Ferric Xylenol Orange (FOX-2) assay, serum total antioxidant capacity by Ferric reducing ability of plasma (FRAP) assay and estimation of serum copper and serum zinc by colorimetric methods using commercial kits .

Results: Significantly high levels of urinary HPL, oxidant load, serum copper and low levels of antioxidant capacity, serum zinc were observed in schizophrenia patients as compared to controls. Increased levels of HPL correlated significantly with that of increased oxidant load and copper level, decreased antioxidant capacity and zinc level, duration,severity,age and smoking.

Conclusion: It can be concluded that there is increase in oxidative stress and trace elements imbalance in schizophrenia andestimation of urinary HPL can be used as a monitoring marker for severity of schizophrenia.

Behera L. Urinary HPL: a monitoring marker for schizophrenia and its relation to oxidative stress and trace elements. J Clin Sci Res 2014;3(Suppl 3):A2.

Abstracts of Awards session Platform Presentations (AMBICON – 2014)

Thyroid status in gestational impaired glucose tolerance (GIGT) and its association with parameters of neonatal growth

Suganya Shanmugam,[1]Pooja Dhiman,[1]Soundravally Rajendiren,[1] Prabhat,[1]Archana Nimesh,[1] Dilip Kumar Maurya[2]

Departments of [1]Biochemistry,[2]Obstetrics and Gynaecology, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry

Objectives: To study the thyroid function in the maternal and the cord blood of the subjects with gestational impaired glucose intolerance and to study their association with the new-born anthropometry.

Material and methods: The study included 30 women each of GIGT(Gestational impaired glucose tolerance) and normal glucose tolerance.Glycated haemoglobin and fructosamine were estimated by immunoturbidimetry, and dye binding method respectively.Thyroid profile was done by chemiluminescence. Fetal anthropometry was done.

Results: GIGT Mothers had significantly higher values of free and total T_4 than controls, with no differences in their T3 and TSH levels. Cord fructosamine levels were significantly higher in babies of GIGT mothers than controls. There was a positive correlation between the maternal glycatedhaemoglobin and cord blood fructosamine in the GIGT group.Significant low levels of Total T_3 and T_4 with high TSH levels were found in babies with GIGT mothers compared to control babies. Birth weight, head circumference and thigh circumference were significantly higher in babies born to mothers with GIGT than with normal glucose tolerance.

Conclusion: Cord Thyroid functions revealed higher TSH with lower T3 &T4 levels in GIGT group. Also, GIGT increased the neonatal anthropometric parameters, leading to a large baby.

Shanmugam S, Dhiman P, Rajendiren S, Prabhat, Nimesh A, Maurya DK. Thyroid status in gestational impaired glucose tolerance (GIGT) and its association with parameters of neonatal growth. J Clin Sci Res 2014;3(Suppl 3):A3.

Evaluation of serum pregnancy associated placental protein-A in acute coronary syndrome

N. Gautam, T. Vivian Samuel, Manjunath M. Tembad

Department of Biochemistry, JJM Medical College, Davanagere

Introduction: Acute coronary syndrome (ACS), a spectrum comprising unstable angina pectoris, ST Elevated Myocardial Infarction (STEMI) & Non ST Elevated Myocardial Infarction (NSTEMI) is the major cause of presentation in Emergency Department today. Though ECG and cardiac enzymes are used for diagnosis, sometimes they mislead the diagnosis. Pregnancy Associated placental Protein-A (PAPP-A) is secreted by various other cells apart by placenta which is a zinc metalloproteinase and plays a key role in atherosclerotic plaque formation and rupture. Hence it can be considered as an early marker of ongoing thrombosis in ACS.

Aim of the study: To evaluate the diagnostic competence of PAPP-A in acute coronary syndrome and to compare with the inflammatory marker High Sensitive C-Reactive Protein (HS-CRP).

Materials and Methods:50 patients presenting with acute onset of chest pain to Emergency Department with or without ECG changes served as cases and 50 healthy people served as controls. Serum PAPP-A is measured by Enzyme Linked ImmunosorbentAssay(ELISA) and CRP by using Latex Turbidimetry method.

Results:A statistical significant difference of PAPP-A was noted between the ACS and controls. Statistically significant positive correlation is noted between HS-CRP and PAPP-A.

Conclusion:PAPP-A marker of plaque instability is raised in acute coronary syndrome and thus can be considered as one of the marker in ACS for diagnosis.

Gautam N, Samuel TV, Tembad MM. Evaluation of serum pregnancy associated placental protein-A in acute coronary syndrome. J Clin Sci Res 2014;3(Suppl 3):A4.

Abstracts of Awards session Platform Presentations (AMBICON – 2014)

Influence of gestational diabetes mellitus and maternal anemia on cord blood TSH

M.R. Kulshrestha,[1] J. Bhadra,[1] B. Uppal,[2] S. Seth,[1] V.S. Ghalaut[1]

[1]Department of Biochemistry, Pt.B.D. Sharma PGIMS, Rohtak, and [2]Department of Biochemistry, CMC, Ludhiana

Objective: To study the effect of maternal gestational diabetes mellitus and anemia on cord blood TSH.

Materials and Methods: This cross sectional study included 713 term newborns. Excluded from the study were newborns who had major congenital malformations or whose mothers were on antithyroid drugs for thyroid disorders. Information about mothers' health status was noted from medical records.Depending upon the profiles of the newborns and their mothers, 3 groups were formed. The first group served as the control, the second and third groups had newborns whose mothers had gestational diabetes mellitus and anemia, respectively. Two ml blood sample was obtained and after serum separation,the sample was analyzed for TSH using sandwich immunoassay on Elecys 2020. Data analysis was performed using SPSS 16 software and the level of significance taken as $P < 0.05$.

Results: Out of 713 newborns, 306 fitted the criteria for group 1, 74 for group 2 and 333 for group 3. The mean cb TSH value was 8.44 ìIU/L with an SD of ± 7.37. The mean value of cbTSH for group 1, 2 and 3 were 6.72 ìIU/L(SD=± 2.65),9.76 ìIU/L(SD±10.87) and 9.73ìIU/l(SD=±8.90) respectively. cb TSH was significantly raised in newborns born of diabetic (P =0.030) and anemic mothers (P=0.000) in comparison to those born of normal mothers.

Conclusion: Our results show that cord blood TSH is significantly affected in presence of maternal anemia and gestational diabetes mellitus.This may be due to placental insufficiency and fetal hypoxia associated with these conditions, which results in intrauterine stress. Further studies are needed to understand this cb TSH variation and to formulate a link between cbTSH, maternal Hb and HbAC.

Kulshrestha MR, Bhadra J, Uppal B, Seth S, Ghalaut VS. Influence of gestational diabetes mellitus and maternal anemia on cord blood TSH. J ClinSci Res 2014;3(Suppl 3):A5.

Abstracts of Platform Presentations (AMBICON – 2014)

Study of circulating plasma levels of growth hormone and testosterone in adult males with sickle cell trait

Abhishek Roy, Gangadhar Chatterjee, Leela Gul Abichandani, Rittu Chandel

Department of Biochemistry, Grant Govt. Medical College and Sir J.J Group of Hospitals, Mumbai

Objective: The state of Maharashtra witnesses a high prevalencerate for Sickle cell trait (10%) and Sickle cell disease (0.5%) in the tribal population. Various literatures show the prevalence of growth retardation and hypogonadism among sickle cell disease individuals. The objective of this study was to see if the presence of a single allele for sickle cell gene causes any changes inrandom basal hormonal levels or not.

Material and methods: Adult males (n=50) with sickle cell trait (confirmed through HPLC), between the age group 18-35 years were included in the study. Simultaneously, age matched healthy controls (n=20) were also included. Growth hormone (GH) and Testosterone (TES) were measured using chemiluminescence principle. Unpaired t-test was done to analyze the data.

Results: The study showed that the basal hormonal levels in the sickle cell trait population was although within the normal range but for both GH (normal <5ng/mL) and TES (normal 216-1500 ng/dL), it was in the lower levels of the normal range (0.5424 ± 0.0741 for GH, 497.9 ± 48.6 for TES) against that of healthy controls (2.462 ± 0.2821 for GH, 768.5 ± 75.01 for TES) which is significant($P < 0.0001$ for GH, $P < 0.003$ for TES).

Conclusion: Our study didn't show any absence of GH or deficiency of testosterone as it happens with sickle cell disease. But itshows that the presence of the Sickle cell gene probably affects the secretion of growth hormone and testosterone.However, more studies are required to draw a definite conclusion.

Roy A, Chatterjee G, Abichandani LG, Chandel R. Study of circulating plasma levels of growth hormone and testosterone in adult males with sickle cell trait. J Clin Sci Res 2014;3(Suppl 3):A6.

Haemoglobinopathies-absolutely preventable dreadful genetic disorders

Rittu S Chandel, Leela G Abichandani

Department of Biochemistry, Grant Government Medical College, Mumbai

Back ground: Haemoglobinopathies consist of thalassaemias and variant haemoglobins. In India, they comprise of the largest number of genetic disorders and hence are of great public health importance. Clinically important thalassaemia in India is α-thalassaemia. Other variant includes Hb S, Hb E, Hb D and äâ-thalassaemia,

Objective: To determine the prevalence of hemoglobinopathies in antenatal cases.

Materials and Methods: Total 1000 antenatal cases, received from April'2013 to March'2014, were studied for thalassemias and hemoglobin variants on Biorad Variant HPLC hemoglobin analyzer.

Results: Of the 1000 antenatal cases studied,73 cases displayed abnormal hemoglobin fractions on HPLC .There were 44 cases of â thalassemia trait, 15 sickle cell trait, 4 double heterozygous â thalassemia–sickle cell trait, 3Hb D- Punjab heterozygous, 7Hb E heterozygous.Our study found a7.3%prevalence ofhemoglobinopathies in antenatal cases

Conclusion: Among the widely prevalent anaemias, problem of thalassaemia and abnormal haemoglobinsis hidden. There is little information about their prevalence. Poor facilities for diagnosis, inability to carry out genetic counseling and presence of only fewcentres for prenatal diagnosis have resulted in failure of control of birth of these absolutely preventable dreadful genetic disorders. Cure by transplantation is available only to a few. This study brings to noticethat unlike many other genetic disorders where couple at risk cannot be easily diagnosed, thalassaemia and abnormal haemoglobins give an opportunity for effective control of birth.

Chandel RS, Abichandani LG. Haemoglobinopathies-absolutely preventable dreadful genetic disorders. J Clin Sci Res 2014;3(Suppl 3):A7.

Abstracts of Platform Presentations (AMBICON – 2014)

Liver enzymes as biomarkers of severity in sickle cell disease

M.M. Raj Kumari, U.V.P.U. Sowjanya, C.Sridevi
Department of Biochemistry, Andhra Medical College, Visakhapatnam

Objectives: Sickle cell disease is associated with liver damage. Our aim is to evaluate the liver enzymes in sickle cell patients and their effect on severity

Materials and methods: Ten sickle cell patients attending the paediatric department of King George Hospital Visakhapatnam (group 1: sickle cell disease-5, group 2: sickle cell β thalassemia-5) and 20 age and sex matched healthy individuals (group 3) were included. Patients were diagnosed by haemoglobin electrophoresis. Liver enzymes were estimated by auto analyser BS 300.

Results: AST,ALT, ALP, toal bilurubin levels are increased in cases (P <0.001)

S.No.	Parameter	Mean ±SD	P value		
		HbSS (n=5)	HbSβ (n=5)	Control (n=20)	
1.	AST(I.U.)	69.6± 25.9	49.5± 19.6	37.1± 12.2	<0.001
2.	ALT(I.U.)	37.4±15.2	31.7±13.7	32.2±9.1	<0.001
3.	Alkaline Phosphatase(I.U.)	679.2±117.2	667.5±149.1	573.7±131.5	<0.001
4.	Total Bilirubin (mg %)	3.2±1.3	2.5±1.4	0.7±0.4	<0.001

ALT, AST and ALP levels in HbSS subjects in steady and crisis state

HbSS	AST(I.U.)	ALT(I.U.)	ALP(I.U.)
Steady state (n=5)	41.2±5.5	34.7 ±9.3	620.3 ±104.5
Crisis (n=5)	69.6± 25.9	37.4±15.2	679.2±117.2

Conclusion: Multiple factors may contribute to the raised liver enzymes. ALP elevation may be due to vasoocclusive crisis involving bones. Liver abnormalities release AST and ALT which makes these enzymes useful for detecting liver damage. Haemolysis may also raise AST and ALT levels in sickle cell disease. High levels of bilirubin are due to breakdown of haemoglobin. Hence AST: ALT ratio and ALP can be used as biomarkers.

RajKumari MM, Sowjanya UVPU, Sridevi C. Liver enzymes as biomarkers of severity in sickle cell disease. J Clin Sci Res 2014;3(Suppl 3):A8.

Thyroid status in patients with iron deficiency

T.V.K. Padmaja, K.S.S. Sai Baba, Priscilla Abraham Chandran
Department of Biochemistry, Nizam's Institute of Medical Sciences, Hyderabad

Objective: Thyroid dysfunction is a common endocrine disorder affecting about 300 million people worldwide**.** Iron deficiency is one of the most overlooked causes of thyroid dysfunction. Hence the present study was taken up to find out the effect of ferritin deficiency on thyroid hormonal activity.

Material and methods: In this study 186 subjects were included. Patients with S. ferritin <20ng/mL were grouped as cases (n=91) and persons with S.ferritin >20ng/mL (n=95) were grouped as controls. Along with S.ferritin, thyroid stimulating hormone (TSH) was measured in all study subjects. Values were expressed as mean ± SD. Unpaired 't' test & Pearson's correlation test performed to see the level of significance and p value <0.05 was taken as significant.

Results: Serum Ferritin levels in cases and controls were 10.54±5.5 ng/mL and 153.2±106.7ng/mL respectively (p<0.0001). Serum TSH levels in cases and controls were 5.23±3.5 µIU/mL and 3.27±2.25 µIU/mL respectively (p<0.0001). S.ferritin and S.TSH showed negative correlation in controls and cases which was not statistically significant.

Conclusion: Significant difference in thyroid hormone status in iron deficient people could be a reflection of disturbed activities of iron dependent enzyme, thyroid peroxidase. TPO initiates the first two steps in thyroid hormone synthesis**.** Iron deficiency lowers TPO activity. This will decrease circulating thyroid hormone concentrations and increase TSH levels as reflected by the negative correlation between ferritin and TSH levels. Based on our study results, we suggest thyroid hormone status evaluation in all patients with iron deficiency.

Padmaja TVK, Sai Baba KSS, Chandran PA. Thyroid status in patients with iron deficiency. J Clin Sci Res 2014;3(Suppl 3):A9.

Abstracts of Platform Presentations (AMBICON – 2014)

In vitro cytotoxicity assessment of vitamin-D3 using breast and cervical cancer cell lines

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Objective: To assess the in vitro cytotoxicity of Vitamin-D3 alone and in combination with a natural product diallyl disulfide (DADS), and to determine their combination index against MCF-7 and HeLa cell lines.

Material and Methods: Cytotoxicity of Vitamin-D3 and DADS against breast (MCF-7) and Cervical (HeLa) cancer cell lines was assessed using SRB assay

Results: A dose and time dependent cytotoxicity was observed when MCF-7 and HeLa cells were exposed to increasing concentration ofVitamin-D3 or DADS. At 24 h, the IC50 of Vitamin-D3 and DADS for MCF-7 is ~0.5 mM and 0.125 mM respectively. However, when both drugs were combined the IC50 is reduced to ~0.3 mM and 0.06 mM, respectively for Vitamin-D3 and DADS. Similarly, an increase in the efficacy of Vitamin-D3 and DADS was observed even when tested against HeLa cell line.

Conclusion: Our data demonstrates that combining DADS with Vitamin-D3 improves the efficacy of each drug thereby decreases the amount of each drug to be administered. Further studies are required to optimize the best combination dose and to elucidate how these drugs are working in combination to effectively inhibit cancer cell growth.

Swetha NK, Chandini R, Shruthi N, Sujatha P, Prashant V, Suma MN, SubbaRao MV. In vitro cytotoxicity assessment of vitamin-D3 using breast and cervical cancer cell lines. J Clin Sci Res 2014;3(Suppl 3): A10.

Diagnostic and prognostic significance of serum CA19-9 and CEA levels in hepatobiliary tract and pancreatic adenocarcinoma

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Objectives: 1. To estimate serum CA19-9 and CEA levels in patients of hepatobiliary tract and pancreatic adenocarcinoma.2. To find correlation between serum CA19-9 and CEA levels and stage of the disease.

Methodology: 50 patients with provisional diagnosis of hepatobiliary tract and pancreatic adenocarcinoma, who were undergoing treatment in PDU Medical College and Hospital, Rajkot, were enrolled in this study from March 2012 to March 2014. At the time of histopathological diagnosis, serum CA19-9 and CEA levels were analyzed. Out of 50 patients, 11 were excluded from the study as the hepatic secondaries were found to be from primary sites other than hepatobiliary tract. After diagnosis, staging work up was done using imaging and clinical tools. The patients were divided into two groups, Group A of early disease (Stage I, II and IIIA, resectable,n=20) and Group B of advanced disease (Stage IIIB and IV, unresectable, n=19).Serum CA19-9 and CEA levels were statistically compared in these two groups and correlated with stage of disease.

Results: Mean± SD of serum CA 19-9 levels in Group A was 26.1±17.35 U/mL and in Group B was 376.01± 154.63U/mL, p value < 0.0001(highly significant).Mean± SD of serum CEA levels in Group A was 9.45± 14.47 U/ml and in Group B was 62.33 ± 92.11U/mL, p value = 0.02 (significant).

Conclusion: In this study we found a significant correlation of serum CA 19-9 and CEA levels with the stage of disease. Further it was found that serum CA19-9 is a better marker than serum CEA in patients with primary malignancy of hepatobiliary tract and pancreas.

Jain S, Kamariya CP, Goel A. Diagnostic and prognostic significance of serum CA19-9 and CEA levels in hepatobiliary tract and pancreatic adenocarcinoma. J Clin Sci Res 2014;3(Suppl 3): A11.

Abstracts of Platform Presentations (AMBICON – 2014)

Robust reference intervals for tumor markers in cerebrospinal fluid

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Objective: To establish robust Reference intervals(RI) ofAlpha-fetoprotein(AFP), ß-Human chorionic gonadotropin(ßHCG)&Carcino embryonic antigen(CEA) whichserves as surrogate diagnostic markersinCerebrospinal fluid(CSF).

Material and methods: AFP, ßHCG and CEA were analyzed in 20 CSF and serum samples of patients sent for routine analysis using ECLIA method. Patients with SOL, Traumaand pregnancy were excluded.Robust method(CLSI:C28-A3) was used for determining upper(UL) and lower limit(LL).Outliersremoved by Tukey method. Statistical analysis was done usingMedcalc software.

Results: The Mean±SD of CSF AFP (ng/ml),ßHCG(mIU/ml)&CEA(ng/ml) were 0.82±0.53, 6.15±1.25 & 0.51±0.47 respectively. D'Agostino-Pearson test for Normal distribution accepted normality for all parameters. According to Robust method the LL for CSF ßHCG is 3.42(90% CI-2.78 to 4.33) and UL is 8.85(90% CI-8.04 to 9.55), similarly for CSF AFP LL 0(90% CI-0 to 0.06); UL 1.97(90%CI-1.61- 2.29) and CSF CEA LL-0; UL-1.50. The Mean±SD of serum AFP, ßHCG&CEA are 3.04±1.41, 0.90±0.83 &2.54 ±1.87 respectively. The LL for serum ßHCG is 0 and UL is 2.6. Similarly for serum AFP LL 0(90% CI 0 to 0.74) UL 6.08(90%CI 4.82 to 7.08) and serum CEA LL 0(90% CI0 to 0.15) UL 4.34 (90% CI 3.59 to 4.97). NormalCSF/Serum ratio of AFP,ßHCG&CEA are 0.27, 0.06 &0.20 respectively.

Conclusions: Normal RI in CSF and CSF/Serum ratio of tumor markerswill help the clinicians in making the prompt diagnosisand assists in monitoring the prognosis ofpatients facilely rather than going for invasive procedures.

Parveen S, Chandran PA, Noorjahan M, Sadasivudu G, Suchanda. Robust reference intervals for tumor markers in cerebrospinal fluid. J Clin Sci Res 2014;3(Suppl 3): A12.

A study of serum adiponectin and anthropometric measures of adiposity in women with breast cancer

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Objective: Primary objective: To analyse the levels of serum adiponectin and measure the anthropometric measures of Adiposity in cases of breast cancer and compare with normal healthy controls. **Secondary objective:** To correlate the levels of serum adiponectin with anthropometric measures of adiposity

Materials and methods: Sixty patients with newly diagnosed and histologically confirmed breast cancer, attending the Gauhati medical college and Hospital or Dr. B. Borooah Cancer Institute, Guwahati, Assam were recruited along with 60 age and ethnicity matched apparently healthy women were included. Serum samples collected after 12- 14 hours overnight fast were used to estimate serum adiponectin in all the subjects, using Orgenium Laboratories' AviBion Human Adiponectin (Acrp30) ELISA Kit and ELISA Microplate Reader (Biorad Model 680). The anthropometric parameters of adiposity were evaluated using standard techniques. Unpaired Student's t- test was used to compare the variables and Pearson correlation analysis were done. The level of significance was set at $P < 0.05$.

Results: The mean adiponectin levels in cases (9.591 ± 2.227µg/ mL) was found to be lower ($P = 0.0028$) than the control group (10.857 ± 2.315 µg/ mL). This significant difference was present in both pre-menopausal ($P = 0.0467$) and post- menopausal women ($P = 0.0283$). BMI, waist circumference and waist hip ratio were found to be significantly higher in the cases as compared to the controls ($P = 0.0456$, 0.0453, 0.0105 respectively). Significant negative correlation was found between serum adiponectin and BMI, waist circumference as well as waist hip ratio.

Conclusion: Women with breast cancer showed low serum adiponectin and increased BMI, waist circumference as well as waist hip ratio as compared to healthy controls. Decreased adiponectin levels might be associated with a risk of breast cancer and could be used as a predictor for the same.

Borkotokey M, Devi R, Das BK. A study of serum adiponectin and anthropometric measures of adiposity in women with breast cancer. J Clin Sci Res 2014;3(Suppl 3): A13.

Abstracts of Platform Presentations (AMBICON – 2014)

Assessment of tumour markers CEA and CA125 in lung cancer

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Introduction: Lung cancer accounts for 29 % of all cancer in the world.The use of tumour markers may be helpful in the diagnosis and pathologic classification of tumours. CEA is associated with the plasma membrane of tumour cells, from which it may be released into the blood.CA-125 is associated with 80 % of nonmucinous ovarian carcinomas and is elevated in other cancers including lung, endometrial, pancreas, breast, and colon etc.

Objective: To evaluate the possible role of CEA and CA125in serum of suspected cases in diagnosis of lung cancer.

Materials and Methods: Case control study consisting of 50 newly diagnosed lung cancer subjects and age and sex matched 100 control subjects. Levels of CEA and CA125 were estimated using ELISA kits. Data were analyzed using SPSS software version 17.

Results: Serum CEA and CA125 were higher in the cases (21.13±9.70, 43.17±20.49) compared to the controls (3.23±0.96, 22.34±3.58). Serum values for the tumour markers were compared with each other and the correlation was found to be statistically significant ($p<0.01$). The cut off values for maximum sensitivity and lowest false positivity for CEA and CA125 were 4.5ng/ml and 27.15U/ml respectively. The sensitivity and specificity of CEA and CA125 were 74%, 55% and 80%, 51% respectively.

Conclusion: Combined measurement of CEA and CA125 in serum is useful in diagnosis of lung cancer. These may be useful in patients in whom tumour cannot be visualized by bronchofibroscopy or to rule out false positive cases.

Omita Devi N, Singh WG, Singh YI. Assessment of tumour markers CEA and CA125 in lung cancer. J Clin Sci Res 2014;3(Suppl 3): A14.

A study of serum total anti-oxidant capacity and copper levels in patients of cervical cancers

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Objectives of the study: To study the serum levels of total antioxidant capacity and copper level in patients of cervical cancer.

Methodology: Present study was a case-control study which was carried out at Vydehi Institute of Medical Sciences & Research Centre, Bangaluru from December 2013 to June 2014. Fifty histologically proven cases of cervical cancer and 50 controls were selected , and their serum levels of total antioxidant capacity and copper level in patients of cervical cancer were estimated. Serum copper was estimated by modified spectrophotometric micromethod using Guanidine Hydrochloride and bathocuproinedisulphonate disodium salt and total antioxidant capacity was estimated by FRAP method using TPTZ and hexa hydrated ferric chloride. Statistical analysis was done by student t test and pearson correlation.

Results:TAC was statistically found to be reduced in patients of cervical cancer as compared to healthy individuals.Serum copper levels were statistically found to be elevated in these patients compared to healthy individuals.

Conclusion: Decreased serum total antioxidant capacity and increased copper levels are associated with patients of cervical cancers. It may be helpful that females who consumed diet comprising more of antioxidants have less frequency of cervical cancers.

Shah SR, Mohanty S, Raghavendra DS. A study of serum total anti-oxidant capacity and copper levels in patients of cervical cancers. J Clin Sci Res 2014;3(Suppl 3): A15.

Abstracts of Platform Presentations (AMBICON – 2014)

Status of CA-125 as a diagnostic marker in patients with Hodgkin's lymphoma

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Objective: To assess status of CA-125 in patients of Hodgkin's lymphoma as a diagnostic marker and to find out the relationship between the level of CA-125 and stage of the disease.

Methodology: 30 newly diagnosed patients of Hodgkin's Lymphoma were selected such that 20 of them were in Stage I, 5 were in Stage II and 5 were in stage III. Venous blood was collected from these patients and tested for CA-125 levels by using two-site sandwich immunoassay using direct chemiluminometric technology in ADVIA- CENTUAR CP. Age and sex matched controls were also selected and their CA-125 levels were also measured similarly. This study was conducted in the Department of Biochemistry in collaboration with the Department of Oncology, PGIMS, Rohtak

Summary of results: CA-125 was found to be raised in all the patients; whereas the levels of CA-125 in controls were within normal range .The CA-125 levels in controls was 15±8 U/L. The CA-125 in Stage I patients was 533±179 U/L, that in Stage II patients was 816±46 U/L, and those in Stage III was 948 ± 60 U/L. All the results were found to be statistically significant ($p<0.05$).

Conclusion: CA-125 was found to be uniformly raised in all patients and more so in patients with a more advanced stage of Hodgkin's Lymphoma. Thus CA-125 has a potential role as both a diagnostic and prognostic marker in Hodgkin's Lymphoma.

Lokanathan V, Ghalaut VS, Gupta G, Mahor DS, Kaushik S, Sarkar M, Roy PS. Status of CA-125 as a diagnostic marker in patients with Hodgkin's lymphoma. J Clin Sci Res 2014;3(Suppl 3): A16.

Effect of chemotherapy on ALP and PRL levels in breast cancer

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[2]Lady Hardinge Medical College, New Delhi

Objective: To ascertain the effect of chemotherapy in females with breast cancer by serum ALP (alkaline phosphatase) and serum PRL (prolactin) levels.

Materials and methods: This study was conducted in the Department of Biochemistry in collaboration with the Department of Oncology, PGIMS, Rohtak. The study group comprised of 25 female patients with breast cancer confirmed by biopsy and receiving chemotherapy for the same. 25 age matched healthy females were taken as control group. Venous blood was collected , serum ALP and serum PRL levels were estimated in study and control group. Serum ALP and serum PRL were estimated by PNP AMP colorimetric assay on Randox Rx Suzuka autoanalyser and two-site sandwich immunoassay using direct chemiluminiscence technique on ADVIA-CENTAUR CP respectively.

Results: The mean levels of ALP and PRL were significantly higher (191±160.54 U/L; $p<0.01$ and 29±16.00 ng/mL; $p<0.01$) in cases (before chemotherapy) than controls (91.08±13.28 U/L and 9.9±5.11 ng/mL) respectively. Also, ALP and PRL levels were significantly decreased after chemotherapy (127.72±54.89 U/L; $p=0.012$ and 15.82±11.94 ng/mL; $p=0.001$) respectively.

Conclusion: These findings suggest that biochemical markers like ALP and PRL levels to be helpful to evaluate the effect of chemotherapy and remission of disease during and after treatment. Women with breast cancer have ALP activities generally higher than normal healthy women. The progressive increase in the serum ALP activities with breast cancer is an indication of metastasis. Some studies show that PRL is synthesized by human breast cancer cells.

Mahor DS, Seth S, Ghalaut VS, Lokanathan V, Kulshrestha MR, Mahor A, Gupta G. Effect of chemotherapy on ALP and PRL levels in breast cancer. J Clin Sci Res 2014;3(Suppl 3): A17.

Abstracts of Platform Presentations (AMBICON – 2014)

Estrogen receptor alpha gene polymorphism in breast cancer and its correlation with estrogen receptor status

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Introduction: Breast cancer is the most prevalent cancer among women .Estrogen plays a crucial role in the pathogenesis and progression of breast cancer, whose effects are mediated primarily through Estrogen receptors. Several common polymorphisms of the ER α gene have been reported to be associated with alterations in receptor expression in breast cancer.

Aim: To determine whether the polymorphism in ER α gene are associated with the risk of breast cancer.

Materials and methods: This is a case-control study consisting ofbreast cancer patients in Group I and 150 healthy women in Group II. The frequency distribution of PvuII polymorphism in the ERá gene was assessed by PCR-RFLP method.

Results: Distribution of PP genotype was more frequent among cases (34%) when compared to controls (21.3%), with x^2 value of 6.07 and $p< 0.05$. Premenopausal women had elevated frequency of PP genotype (41.8%) as compared to postmenopausal women (25.7%) with x^2- 8.69, $p< 0.05$. Also the frequency of PP genotype was elevated in patients with positive ER status (40.2%) as compared to ER negative patients(23.7%) with $x^2 – 6.18$, $p< 0.05$. pp genotype frequency was found to be significantly elevated in advanced stage and the patients with early stage had increased frequency of PP genotype with $x^2 – 16.74$, $p< 0.01$.

Conclusion: From this study, it can be concluded that the PP genotype may be an independent risk factor for the development of breast cancer. Also this PvuII polymorphism of ER α gene may have influence on the ER status and the stage of tumour.

Rekha K, Lalitha R. Estrogen receptor alpha gene polymorphism in breast cancer and its correlation with estrogen receptor status. J ClinSci Res 2014;3(Suppl 3): A18.

Study of serum folic acid and vitamin B_{12} levels in patients of stroke in young

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Objectives: To determine the association of levels of serum folic acid and vitamin B12 in patients of stroke in young with age and sex matched controls.

Materials and methods: In this case control study, 30 cases of stroke in young who were free from conventional vascular risk factors like diabetes mellitus, hypertension, hypercholesterolemia and cigarette smoking with thirty age and sex matched controls were selected. Their fasting serum folic acid and vitamin B12 levels were determined by chemiluminescence method.

Results: In this study the levels of serum folic acid and vitamin B12 was significantly decreased in patients of stroke in young compared to controls with p-value of <0.0307 and <0.0232 respectively. Of 12 vegetarians of 30 cases, eight [66.7%] patients had serum vitamin B12 deficiency.

Conclusion: Hence it is concluded that serum folic acid and/or serum vitamin B12 deficiency play as an important independent risk factor for stroke in young patients in the absence of conventional risk factor. The serum MDA was significantly raised in all the patients of stroke in young, hence it is an indicator of lipid peroxidation in the pathophysiology of stroke.

Varunkumar D, Asha S, Vishwanath HL. Study of serum folic acid and vitamin B12 levels in patients of stroke in young. J Clin Sci Res 2014;3(Suppl 3): A19.

Abstracts of Platform Presentations (AMBICON – 2014)

Assessment of hsCRP and uric acid levels in cerebrovascular accident patients

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Introduction: Cerebrovascular accidents (CVA) or stroke is one of the leading causes of mortality and morbidity worldwide. The pathophysiology of stroke is complex and involves inflammatory pathways as well as oxidative damage. The acute phase protein hsCRP is associated with atherosclerosis. The role of uric acid as a risk factor for stroke is controversial and there is little information about it.

Aims and Objects: To estimate serum hsCRP and uric acid levels in CVA patients and to find its correlation with lipid profile

Material and method: Case control study consisting 60 cases of acute stroke admitted in Medicine ward RIMS, Imphal and 60 age and sex matched healthy controls. Serum hsCRP, uric acid level and lipid profile was investigated by ELISA, colorimetric method and autoanalyser respectively. Data were analyzed using SPSS software Ver 16.

Results: It was observed that mean value of hsCRP (6.56±2.59 mg%) and serum uric acid (7.64±2.01 mg%) level in CVA patients were significantly higher than that of control group (1.77± 0.88mg% and 5.06±0.9 mg% respectively) (p <0.001).hsCRP and serum uric acid levels shows positive correlation with significantly elevated total cholesterol(TC), triglyceride(TG),very low density lipoprotein (VLDL), low density lipoprotein(LDL) whereas it shows negative correlation with high density lipoprotein (HDL) levels which were significantly lower in CVA patients.

Conclusion: Due to elevated hsCRP and uric acid in CVA patients and its accompanying increase in TC, TG, LDL, VLDL and decreased in HDL levels, it can be considered that it is associated with increased risk factor for stroke.

Devi HL, Devi TI, Singh MA, Singh TP. Assessment of hsCRP and uric acid levels in cerebrovascular accident patients. J Clin Sci Res 2014;3(Suppl 3): A20.

Interpretation of serum aminotransferases in CKD patients

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Objective: Chronic kidney disease results in loss of kidney function and may also lead to serious complications like hypertension, cardiac, liver and bone abnormalities etc. This results in abnormal blood parameters and difficulty in their interpretation. In this background we evaluatedserum aminotransferase levels in CKD patients.

Materials and Methods:Fifteen CKD patients in Stage V and 15 normal healthy subjects are included in the study. AST, ALT, Urea, Creatinine were estimated in Auto analyzer. The eGFR is calculated using MDRD 6-variable formula. Unpaired t-test and Pearson's correlation are used to assess the changes in the aminotransferase levels.

Results: Stage V CKD patients showed significantly low AST (mean±SD= 17.2±4.3 IU/L) and ALT (mean±SD= 17.3±5.6 IU/L) levels when compared with controls (mean±SD= 22.7±6.2IU/L&25.6±9.9IU/ Lrespectively) (p=0.0082 for AST, p=0.0088 for ALT). The AST and ALT values are directly related with eGFR ('r'=0.210, 0.171) and inversely related with creatinine ('r'= -0.259, -0.435) in diseased group, but this is not statistically significant.

Conclusion: The low values of AST and ALT in CKD patients could be because of pyridoxine deficiency or due to the effect of uremic toxins on liver. The low serum hepatic enzyme levels may pose problems in assessing hepatitis infections and in evaluating the hepato-toxicity of drugs in these patients. However these results have to be confirmed with large sample size and in other stages of CKD.

Pavani Kiranmai T, Sai Baba KSS, Chandran PA. Interpretation of serum aminotransferases in CKD patients. J Clin Sci Res 2014;3(Suppl 3): A21.

Abstracts of Platform Presentations (AMBICON – 2014)

Evaluation of mineral status in chronic kidney disease patients without and with dialysis

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Objectives: 1. To evaluate and compare serum zinc, copper, calcium, phosphorus, magnesium and ferritin in CKD patients without dialysis and controls. 2.To evaluate and compare serum zinc, copper, calcium, phosphorus, magnesium and ferritin in CKD patients with dialysis and controls.3.To compare serum zinc, copper, calcium, phosphorus, magnesium and ferritin in CKD patients without and with dialysis.

Material and Methods: The study group included totally 60 patients; among them 30 patients were CKD without dialysis and 30 were CKD with dialysis selected from Medicine department of S.N. Medical college and HSK Hospital Bagalkot and 30 healthy controls matched for age and sex were selected.

Results: In CKD patients without dialysis there was statistically significant decrease in serum zinc compared to controls ($p < 0.05$) and statistically significant increase in copper, calcium, phosphorus, magnesium and ferritin ($p<0.05$) compared to controls. Whereas CKD patients with dialysis there was statistically significant increase in serum zinc ($p<0.05$), calcium, phosphorus and ferritin ($p<0.05$) compared to controls. When CKD patients without dialysis were compared with those who were on dialysis there was statistically significant increase in serum copper and magnesium and significant decrease in serum zinc and ferritin ($p<0.05$). But no changes were seen with serum calcium and phosphorus.

Conclusion: The study revealed significant mineral abnormalities in CKD patients with and without dialysis compared to controls. Hence estimation of these minerals is very important in CKD patients both with and without dialysis to prevent future complications and for better management.

Mannangi N, Kashinakunti S, Pujar S, Kavitha MM, Ganiger A, Bhutal M. Evaluation of mineral status in chronic kidney disease patients without and with dialysis. J Clin Sci Res 2014;3(Suppl 3): A22.

Study of sialic acid and microalbuminuria in diabetic nephropathy

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Objective: The prevalence of diabetes mellitus is increasing worldwide. Recent studies showed that India has got large number of diabetic patients. Diabetic nephropathy (DN) develops in 30% to 40% of patients with type 1 diabetes mellitus and in 10% to 20% of patients with type 2 diabetes mellitus. Diabetic nephropathy is the leading cause of end-stage renal disease (ESRD) worldwide.

Material and methods: An early sign of impending nephropathy is microalbuminuria. A total number of 90 samples were analyzed to study the levels of microalbumin and serum sialic acid levels in 30 diabetic nephropathy patients, 30 diabetic patients without nephropathy and 30 healthy controls.

Results: The significance between the groups was determined using Student t- test for Equality of means. The results show increase in mean concentration of microalbumin in diabetic nephropathy cases when compared to controls and was statistically highly significant ($p< 0.001$). Serum sialic acid levels between the two groups was statistically highly significant ($p<0.0001$).

Conclusion: Our study concludes, estimation of micro-albuminuria levels in diabetes mellitus patients with and without Nephropathy is helpful in assessing the diabetic process and identifying the risk category for complications which are the main causes for mortality and morbidity among diabetes mellitus patients. Such investigations can not only improve the quality of life but also reduce mortality in diabetic patients.

Krishnamma M, Shivakumar, Naidu JN, Naidu MP. Study of sialic acid and micro-albuminuria in diabetic nephropathy. J Clin Sci Res 2014;3(Suppl 3): A23 .

Abstracts of Platform Presentations (AMBICON – 2014)

Cystatin-C and gonadotropins as markers in end-stage renal disease

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Objectives: Creatinine clearance, though widely used biomarker of kidney function, varies with muscle mass and age. Thus, we tried to find out cystatin-C levels in patients with end stage renal disease (ESRD; grade 5 CRF) in comparison to healthy population and its co-relation with creatinine clearance and 24-hour urinary protein excretion.

Material and methods: This was a cross sectional observational study carried out at PGIMS, Rohtak. Blood samples of fifty known males (eGFR<15) of diabetic ESRD, not on hemodialysis and 30 males (controls; eGFR>90) were collected after an informed verbal consent. Serum marker Cystatin-C was measured using particle enhanced immunoturbidimetry method by kit from Accurax, LH and FSH by chemiluminescence sandwich assay by kit from Siemens Diagnostics on Advia Centaur while creatinine by Modified Jaffe's method and urea with urease kinetic method by kit from Randox on Randox Rx Suzuka. Creatinine clearance and eGFR were calculated by standard formula (UV/P) and MDRD study equation respectively.

Results: The mean levels of serum cystatin-C (5.93±1.89mg/L), urea (208.23±60.6 mg/dl), creatinine (8.31±2.6 mg/dl), LH (8.55±2.7 mIU/L) were significantly high (p=0.000) in patients of ESRD when compared to controls. FSH (7.87±4.59mg/dL) was also mildly but not significantly elevated in ESRD patients. Serum Cystatin-c has been found to be significantly co-related to urinary albumin to creatinine ratio (r=0.633; p=0.03).

Conclusion: Serum cystatin-C may be labeled as important progression marker of ESRD. Unlike creatinine, it is not affected by muscle mass. Also, LH is persistenly increased and FSH mildly elevated in ESRD. This may be cause of gonadal dysfunction in CKD patients.

Dhupper V, Ghalaut VS, Kulshreshtha MR, Bhadra J. Cystatin-C and gonadotropins as markers in end-stage renal disease. J Clin Sci Res 2014;3(Suppl 3): A24.

Serum lipid profile in patients with chronic kidney disease

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Aims and Objectives: 1) To assess alteration in lipid profile in CKD patients compared to controls 2) To assess the difference in lipid profile of CKD patients on conservative management and on hemodialysis

Material and methods: 50 cases with CKD were included in this study,out of which 25patients in predialysis state and 25patients had undergone hemodialysis.The controls were 50normal healhy individuals and they were age matched.Estimation of Total cholesterol,triglycerides,HDL ware carried out by Semiautoanalyzer but LDL&VLDL was indirectly calculated using Friedwald's formula LDL= total cholesterol-(HDL+VLDL) mg/dl; VLDL=TG/5 mg/dl

Results: There was significant elevation in serumTG in CKD patients (mean=165mg/dl)compared to controls(mean=98mg/dl) (pvalue<0.01).MeanserumVLDL was 30.6mg/dl in CKDpatients &in controls 19.6mg/dl(pvalue <0.01).Mean HDL was significantly decreased in CKDpatients(30.3mg/dl)than incontrol(46.6mg/dl) (pvalue<0.01).Alteration in mean Total cholesterol in CKDpatients(158mg/dl) and in controls(164mg/dl)was not significant(pvalue<0.05).SerumLDL in CKDpatients & controls were 94mg/dl& 97mg/dl respectively(pvalue 0.3),the difference was not significant.There was no significant variation in lipidprofile values between conservatively managed &hemodialysed CKDpatients.

Conclusion: Progressive deterioration of renal function results in altered composition of blood lipids which predisposes to vascular diseases.Renal dyslipidemia is due to accumulation of uremic toxins.Secondary hyperparathyroidism reduces the level of lipoprotein lipase which results in impaired catabolism of Triglyceride rich lipoproteins.Increased synthesis of APO-CIII,a competitive inhibitor of lipoprotein lipase and insulin resisance leads to elevated levels of VLDL-C levels. Hepatic apo-A1 synthesis is decreased and lecithin Cholesterol Acyl Transferase activity is reduced which leads to decreased HDL-C levels.

Viji Shalini C, Beegum MS. Serum lipid profile in patients with chronic kidney disease. J Clin Sci Res 2014;3(Suppl 3): A25.

Abstracts of Platform Presentations (AMBICON – 2014)

Assessing proteinuria in chronic kidney disease: protein-creatinine ratio vs albumin-creatinine ratio

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Objectives: Quantification of proteinuria is important in the assessment of chronic kidney disease (CKD).Early detection and treatment for CKD can reduce the progression of kidney disease and its complications like cardiovascular disease. Excessive amounts of proteins mainly albumin in the urine is a key marker of kidney damage. Protein to creatinine ratio (PCR) has been estimated to find out the extent of proteinuria but it overestimates proteinuria mainly in conditions where proteins other than albumin are present.The aim of this study was to find out a better parameter to identify proteinuria (albuminuria) in CKD patients.

Methods: The study design is case control study with 50 controls (apparently healthy) with normal urine protein to creatinine ratio (uPCR→0.0-0.3) and normal eGFR and 50 chronic kidney disease(CKD) patients as cases with increased uPCR and decreased eGFR (GFR < 60 mL/min/1.73m^2).Urine protein is measured by pyrogallal red method. Urine albumin is measured by immunoturbidimetric assay and urine albumin to creatinine ratio (uACR) is calculated.

Results: Results were analysed using SPSS software version 22.0 and uACR is found to correlate better than uPCR with eGFR values & uACR has p value <0.005 and significant uPCR has p value >0.005 and is not significant.

Conclusions: Urine albumin to creatinine ratio (uACR) is found to be superior than urine protein to creatinine ratio (uPCR) to identify proteinuria mainly albuminuria in CKD patients.

Divya Dharshini B, Ganesh M, Malar J. Assessing proteinuria in chronic kidney disease: protein-creatinine ratio vs albumin-creatinine ratio. J Clin Sci Res 2014;3(Suppl 3): A26.

Prothrombin time and activated partial thromboplastin time alterations in CKD patients on haemodialysis

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Objective: Chronic kidney disease (CKD) patients who are on regular haemodialysis are susceptible to coagulativeabnormalities. Increased bleeding tendency is due to platelet abnormalities and defective adhesion. Our aim is to know the possible effect of duration of dialysison PT and APTT. This will help us to determine whether precautions has to be taken in patients receiving haemodialysis, to avoid any life threatening complications caused by regular HD sessions.

Material and Methods: We have included 67 patients with CKD on haemodialysis who attended nephrology clinic of our institute.Based on the duration of haemodialysis they were divided into two groups. Group 1included 47 patients (M=40 and F=7, mean age - 41ys),receiving haemodialysis for a duration of 6-8 months, Group 2 included 20 patients(M=17 and F=3, mean age-46yrs),receiving haemodialysis for a duration of 12-36months.Prothrombintime (PT) and activated partial thromboplastin time (APTT) were measured using nephelometric method. Descriptive statistics were analysed by using unpaired t test.

Results: The mean PT was higher in group 2 when compared with group 1 (13.4±2.2 sec Vs.11.8±1.6 sec,p=0.0020)and the mean APTT was also higher in group 2 when compared with group 1 (38.9±28.8sec versus 28.9±5.3 sec, p=0.0241).

Conclusion: The results of our study have shown an increase in PT and APTT values in chronic HD patients which may contribute to bleeding complications. Thus, it is essential to evaluate the PT and APTT and also other coagulative parameters to find any haemostatic abnormalities in patients on chronic hemodialysis so that adequate therapy could be implemented.

Vani T, Chandran PA, Noorjahan M, Sreedevi NN, Shivalaxmi M, Parveen S, Neeraja K. Prothrombin time and activated partial thromboplastin time alterations in CKD patients on haemodialysis. J Clin Sci Res 2014;3(Suppl 3): A27.

Abstracts of Platform Presentations (AMBICON – 2014)

Serum adiponectin in diabetic nephropathy

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Objectives: Study of variation of serum adiponectin in diabetes mellitus in context with nephropathy.

Material and methods: This case-control study was conducted on 50 controls and 110 cases of known diabetes mellitus type 2. Overnight fasting sampling was done followed by centrifugation and storage at -40^{o}C till assay. The biochemical parameters included were fasting blood glucose (FBG), serum adiponectin and urine protein to creatinine ratio. Adiponectin was measured using 'Assay Max Human adiponectin Elisa Kit'. FBG was measured by hexokinase-glucose-6-phosphate dehydrogenase method in Dade Behring RXL Max. Fasting urine samples were subjected to protein dipstick test; if positive run for protein creatinine ratio and negative result for albumin to creatinine. Based on urine findings the cases were divided into 3 groups as normoalbuminuria, microalbuminuria and macroalbuminuria.

Results: Statistical analysis by SPSS 15.0 showed adiponectin was low in type 2 diabetic patients compared to control ($p< 0.000$). Adiponectin was significantly low in patients of microalbuminuria compared to normoalbuminuria ($p<0.002$). Although adiponectin was more in macroalbuminuria than normoalbuminuria it was not statistically significant. But on comparing adiponectin in microalbuminuria to macroalbuminuria a significantly higher level was observed in cases of macroalbuminuria subgroup ($p<0.000$).

Conclusion: The adiponectin level decreases in diabetes mellitus. At the initial stage of diabetic nephropathy adiponectin is reduced further than those with diabetes mellitus without nephropathy. But paradoxically the serum concentration of adiponectin is increased with advanced diabetic nephropathy.

Chand L, Silambanan S, Malar J. Serum adiponectin in diabetic nephropathy. J Clin Sci Res 2014;3(Suppl 3): A28.

Plasma neutrophil gelatinase associated lipocalin (NGAL) as an early biomarker to predict acute kidney injury in patients undergoing cardiac surgery

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Objective: To determine that plasma NGAL is an early biomarker for AKI in patients undergoing cardiac surgery compared to serum creatinine.

Material and methods: Single centre, case control study. 50 controls (normal healthy individuals) and 53 cases (adults who underwent major cardiac surgeries) were chosen. Plasma NGAL and serum creatinine were estimated in random samples for controls. NGAL was estimated preoperatively and at 4 hours post operatively for patients. Creatinine was estimated preoperatively and at 4 hours, 24 hours, 48 hours and 72 hours post operatively for patients. Plasma NGAL was measured using ELISA and creatinine using modified kinetic Jaffe method.

Results: Stata /SE version 11.0 was used for statistical analyses. NGAL post-op values at 4 hours was statistically higher than the NGAL pre-op values ($p=0.00$). Creatinine post-op values at 4 hours ($p=0.28$), 24 hours ($p=0.30$) were not statistically higher andat 48 hours ($p=0.04$), 72 hours ($p=0.01$) were statistically higher than the pre-op values. Among the 53 patients, 13 were classified as AKI based on AKIN criteria. Creatinine levels were elevated at 48 hours and NGAL levels were elevated at 4 hours in patients with AKI.

Conclusion: NGAL was increased at 4 hours and creatinine at 48 hours in patients with AKI, indicating NGAL as an early biomarker for AKI compared to creatinine.

Anusha R, Silambanan S. Plasma neutrophil gelatinase associated lipocalin (NGAL) as an early biomarker to predict acute kidney injury in patients undergoing cardiac surgery. J Clin Sci Res 2014;3(Suppl 3): A29.

Abstracts of Platform Presentations (AMBICON – 2014)

Oxidative stress and paraoxonase-1 status in diabetic nephropathy

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Background: Hyperglycemia in DM can increase oxidative stress through several known pathways. Oxidative stress have also been hypothesized to play a role in the development of diabetic complications like diabetic nephropathy.Therefore we aimed to investigate the process of lipid peroxidation and activity of antioxidant enzymes in patients with diabetic nephropathy.

Objectives:

1. To measure the ratio of microalbumin/creatinine ratio to identify nephropathic patients.

2. To estimate malondialdehyde (MDA) levels as an indicator of lipid peroxidation and paraoxonase-1 (PON-1) as an antioxidant enzyme.3.To corelates MDA and PON-1 levels in pathophysiology of nephropathy.

Material and methods: The study was a prospectivecase control study done on 149participants divided into following groups ,Group A: Control; Nondiabetic (n=40) ,B: DM without nephropathy (n=69), C: DM with nephropathy (n=40). Nephropathy was diagnosed based on urinary microalbumin/creatinine ratio. Estimation of MDA levels: Wilbur K M et al. method and PON-1 levels : Eckerson et al. method .The data analysed by student " t" test .

Results: Statistically significant rise in the levels of MDA (p=<0.001),) and fall in PON-1 in group C and B compared with A.

Conclusion: High serum MDA levels and low serum PON-1 levels are associated with pathophysiology of diabetic nephropathy.

Gawade G, Melinkeri RR. Oxidative stress and paraoxonase-1 status in diabetic nephropathy. J Clin Sci Res 2014;3(Suppl 3): A30.

Establishment of modified Jaffe's method for salivary creatinine estimation by automation

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Background: Renal failure is one of the most common non communicable diseases. Serum creatinine is widely used to assess renal function. Jaffe's method is commonly used for estimation of serum creatinine. Creatinine occurs in saliva though in much lower quantities. However, saliva has been suggested as an alternate diagnostic fluid

Aim of the Study: Present study was taken up to assess suitability Jaffe's method for determination of salivary creatinine.

Material and methods: Salivary creatinine concentrations were measured on autoanalyzer (synchron Cx5; Beckman) by Jaffe rate reaction method using modified concentrations of picric acid and sodium hydroxide to improve the detection limit. Performance characteristics of the assay were assessed using linearity, precision and recovery experiments.

Results: The method was linear at 6.15 µmol/L. Intra-assay imprecision was 7% and 6% at mean creatinine of 12.05 µmol/L and 50.28 µmol/L respectively, while inter-assay imprecision was 14% and 6% respectively.Mean recovery of creatinine was found to be 96.7% and 90.46% when 1.10 and 4.42 ìmol/L creatinine were added.Regression analysis showed a significant correlation between serum and salivary creatinine levels.

Conclusions: The present study shows that Jaffe's method used for serum, when modified, can detect low creatinine levels in saliva and saliva can be considered as an alternate to serum in assessing renal function.

Naresh Y, Bitla AR, Sivakumar V, Srinivasa Rao PVLN. Establishment of modified Jaffe's method for salivary creatinine estimation by automation. J Clin Sci Res 2014;3(Suppl 3): A31.

Abstracts of Platform Presentations (AMBICON – 2014)

Diagnostic performance of immunofluroscence assay and enzyme immunoassay for screening antinuclear antibody

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Objective: To evaluate the diagnostic performance of Immunofluroscence Assay (IFA) and Enzyme Immune Assay (EIA) for screening Anti Nuclear Antibodies (ANA) in sera of patients suspected with connective tissue disease.

Material and methods: 86 samples were collected from patients with clinical features suggestive of connective tissue disease from rheumatology clinic. Positive control samples collected from 20 patients suffering from SLE. Negative controls were collected from 20 healthy young individuals. All the samples were analyzed for ANA by IFA (Euroimmune Medizinische Labordiagnostika) and ELISA (Biosystems).

Results: Of the 86 samples 39 were positive (45.3%) and 47 were negative (54.7%) by IFA. 22 of the above 86 were positive (25.6%) and 64 were negative (74.8%) by EIA. Of the 39 positive by IFA only 10 were also positive by EIA. Of the 47 negative by IFA 13 showed false positives by EIA. Comparing the sensitivity (100%), specificity (98%) of gold standard method IFA, sensitivity and specificity of EIA obtained is 25.64% and 72.3% respectively. The sensitivities of both diagnostic tests were compared by Mc Nemer's test. The sensitivity of EIA was significantly low (p- 0.02).

Conclusion: Screening of ANA by EIA though easier, less expensive and widely available is less sensitive and specific compared to IFA owing to the less number of antigens available in EIA. Therefore we recommend IFA for screening ANA in patients suspected with connective tissue disease.

Prasanthi, Ratnamani, Ambika Devi K, Apparao S. Diagnostic performance of immunofluroscence assay and enzyme imunnoassay for screening antinuclear antibody. J Clin Sci Res 2014;3(Suppl 3): A32.

Effect of NABL accreditation on external quality assurance scheme in clinical chemistry laboratory

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Objective : 1)To collect proficiency testing data of various analytes tested in our laboratory. 2)To compare the proficiency results before NABL accreditation and after NABL accreditation in term of running mean standard deviation index, running mean target score and running mean percentage deviation.

Methodology: In Clinical Chemistry laboratory of S.S. G. Hospital & Medical College, Baroda we perform EQAS of Randox Laboratories Ltd (RIQAS) every month . We monitored RIQAS results of various analytes in term of running mean standard deviation index (RMSDI) , running mean target score (RMTS) and running mean percentage deviation (RMDEV) before NABL accreditation (October 2010 to October 2012) and after NABL accreditation (October 2012 to July 2014) .

Results: In present study, we found significant improvement in our RIQAS results after NABL accreditation. We found decrease in running mean standard deviation index (RMSDI), increase in running mean target score (RMTS) and decrease in running mean percentage deviation (RMDEV) after NABL accreditation (October 2012 to July 2014) as compared to before NABL accreditation (October 2010 to October 2012) in most of our analytes and further improvement in subsequent years i.e. 2012-13 & 2013-14.

Conclusion: NABL accreditation has substantial favorable impact on outcome of RIQAS result implying improved quality of test results after NABL accreditation. An NABL accreditated laboratory has to follow all criteria for quality and competence as per ISO 15189: 2012 and once a laboratory starts practicing all these quality policy and procedures, the quality of test results is improved as shown by continuous improvement in RIQAS results.

Agravatt A, Jain S, Sirajwala HB. Effect of NABL accreditation on external quality assurance scheme in clinical chemistry laboratory. J Clin Sci Res 2014;3(Suppl 3): A33.

Abstracts of Platform Presentations (AMBICON – 2014)

Alcohol induced hypertriglyceridemia - a confounding or causal factor?

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Hypertriglyceridemia results from genetically determined disturbances in lipid metabolism but may also be secondary to conditions like obesity, diabetes mellitus, hypothyroidism, nephrotic syndrome, alcohol, drugs etc. Familial-type 4 hyperlipoproteinemia is due to unknown etiology due to defect in Apo A-V.

Case report: A 22yr male presented to the emergency department with abdominal pain for 10 days increasing with food intake. H/o chronic alcoholism. O/E: BMI: 18.16kg/m^2,no stigmata of hyperlipidemia. P/A: tenderness in epigastrium, no organomegaly.provisionally diagnosed as pancreatitis.

Investigations done: Serum was lipemic,TC:490mg/dL, TAG:630mg/dL, HDL:23mg/dL. Lipoprotein electrophoresis: increased pre â band(VLDL).USG abd: fatty liver, pancreas-normal. Lipid profile of family members: normal.

Patient was advised strict alcohol abstinence, treated conservatively. A week later serum sample was clear, showed TC: 124 mg/dl, TAG:437mg/dl, HDL:16mg/dl,other parameters within normal limits.

Patient was reviewed a month later. He started alcohol abuse again, repeat investigations showed, serum was lipemic, TC: 214 mg/dl, TAG: 1248mg/dl, HDL:17mg/dl, LDL:90mg/dl, VLDL:107mg/dl, Apo A & Apo B normal. He was started on fibrates.

Conclusion: In this case hypertriglyceridemia was detected and alcohol was the confounding factor after ruling out other causes. In some individuals with pre-existing alterations of lipid metabolism, small ethanol dose provoke marked hyperlipemia which responds to alcohol withdrawal. The capacity of lipoprotein production and hyperlipemia development increases during chronic alcohol consumption. Most patients with hypertriglyceridemia have one secondary factor nevertheless not everyone with equivalent exposure to those develops equally severe dyslipidemia which suggests a role for polygenic susceptibility.

Uma Lakshmi V, Arifuddin N, Raghavendra S, Manohar C. Alcohol induced hypertriglyceridemia - a confounding or causal factor?. J Clin Sci Res 2014;3 (Suppl 3): A34.

Pleural fluid cholesterol to differentiate transudates from exudates

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Objective: Pleural effusion is classified as exudate or transudate, based on the etiology and underlying pathology.Differentiatingthe two types of effusion is helpful for guiding the treatment. Pleural cholesterol is thought to be derived from degenerating cells and vascular leakage from increased permeability.So this studyaimed to assess whether measurement of total cholesterol in pleural fluid is helpful indiscriminating transudate and exudate pleural effusions.

Materials andmethods: This study is a prospective cross-sectional study which was performed on 32 patients with pleural effusion admitted in NIMS. Of the total n= 32 pleural fluids,n=23 were exudates and n=9 were transudates. Total cholesterol, protein and LDH were estimated in the pleural fluids. Statistical analysis was done by pearson's correlation and unpaired student t test.

Results: Pleural fluid cholesterol, proteins and LDH were significantly lower in the transudategroup when compared to exudate (13.8±7.0Vs61.8±21.4, 1.4±0.6Vs4.4±0.8, 119±127Vs884±831) respectively. The difference in values of cholesterol and protein between the transudate and the exudate groups were statistically significant ($p<0.001$), and difference of LDH values also were significant (p value=0.017). Significant positive correlation was found between pleural protein and cholesterol($r=0.786$).

Conclusion: Our study showed an association between elevated pleural cholesterol and protein levels. This avoids the estimation of serum proteins, serum LDH, and pleural LDH in discriminating transudates from exudates.Therefore pleural cholesterol levels may significantly help in the diagnosis.

Sreedevi NN, Chandran PA, Vani T. Pleural fluid cholesterol to differentiate transudates from exudates. J Clin Sci Res 2014;3(Suppl 3): A35.

Abstracts of Platform Presentations (AMBICON – 2014)

Design of a graphene oxide-based nano-biosensor for thrombus risk identification

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Objectives: Graphene is a one-atomic layer thick 2-dimensional nanomaterial with unique properties. Graphene is widely projected to have extensive biomedical applications. We have designed of a graphene oxide-based electrochemical biosensor for detection of platelet-derived microparticles (PMPs), a major risk factor for arterial pro-thrombotic pathologies like acute myocardial infarction and stroke.

Material and methods: Platelets were isolated from fresh human blood and induced to shed microparticles by treatment with ionophore A23187.PMPs were counted by flow cytometry.Electrodes were fabricated with immobilized layers of graphene oxide and a specific antibody targeted against active conformation of integrin $\alpha IIb\beta 3$ on PMP surface. Microparticle suspension (15 μL) was dropped on fabricated electrode. Analysis was carried out using Metrohmpotentiostat-galvanostat.

Results: Results showed progressive rise in impedance in Nyquist plots with increasing number of PMPs in analyte ($p=0.006$). The sensor is highly specific for PMPs and does not identify microparticles originating from other cells. Blood obtained from patients diagnosed with acute myocardial infarction exhibited significantly higher values of impedance, consistent with larger number of circulating PMPs in these patients, as compared to samples from healthy individuals ($p=0.006$), thus validating biosensor as a specific, sensitive, label-free and cost-effective tool for rapid point-of-caredetection of PMPs at bedside.

Conclusion: Our biosensor (patent filed) is ideal for mass population screening programs at periphery-level healthcare units with limited resources.It is aimed at early detection of individuals having higher imminent cardiovascular risk, as well as routine analysis, which in turn would contribute to better management and survival of screened 'high-risk' subjects.

Kailashiya J, Singh N, Dash D. Design of a graphene oxide-based nano-biosensor for thrombus risk identification. J Clin Sci Res 2014;3(Suppl 3):P A36.

Evaluating the merits and demerits of different separative procedures for haemoglobin: electrophoresis subtypes over HPLC method

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Haemoglobin Subtypes identification is the hallmark for diagnosis of spectra of Haemoglobin related disorders -from Thalessemia to Sickle Cell Anaemia. We evaluated the three subtypes of Electrophoresis and compared them amongst themselves and with High Pressure Liquid Chromatography (Variant II from BioRad International).

Three Types of electrophoresis, Submarine electrophoresis on Agar Gel, Cellulose Acetate Electrophoresis and Paper Electrophoresis were run. All were horizontal type. The haemoglobin extraction procedure was standardized as per the protocol for each and the run was carried out immediately after separation of Hb.Submarine type had a inherent difficulty of sample staying in the well when the separating buffer was poured on top of the agar plate. Paper electrophoresis had blurred bands and in one hour of separation time, the margins were not sharply delineated. All were quantified using a scanner

HPLC used was Variant II from BioRad International. The procedure was blind though very fast as compared to all three subtypes of electrophoresis. Although the separation by HPLC was standardized easily ,procedure very fast , peaks obtained were neat ,each returning to the baseline, it was a blind procedure, incurred high cost and therefore had to be run in batches. When emergency diagnosis is required one cannot wait for a batch of samples to be run. Cellulose Acetate Electrophoresis (GmBH,Germany) needed only careful Hb extraction for a neat run .Compared to Agar Gel there was no need for any preparation as Cellulose Acetate paper were already sized for the electrophoretic tank. The run could be visualized, sharp and easily delineated and therefore obtained sharp peaks after scan. It was very cost effective and can be easily done for a single sample also. Therefore it can be concluded that HPLC sensitivity is no doubt incomparable but Cellulose Acetate Electrophoresis still has a place in screening as well as in a isolated case where diagnosis cannot wait.

Lal V, Sinha KK, Sharma P. Evaluating the merits and demerits of different separative procedures for haemoglobin: electrophoresis subtypes over HPLC method. J Clin Sci Res 2014;3(Suppl 3): A37.

Abstracts of Platform Presentations (AMBICON – 2014)

Role of gamma glutamyl transferase as an atherogenic risk marker in acute coronary syndrome

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Objectives: To estimate the level of Gamma glutamyl transferase (GGT) in patients diagnosed of acute coronary syndrome (ACS) and compare with controls.

To study the association between GGT levels and conventional risk factors of coronary artery disease such as diabetes mellitus, dyslipidemia and hypertension.

Materials and Method: Case control study comprised of 100 patients presenting with ACS, and 51 age and sex matched controls. ACS was diagnosed and divided into subgroups based on typical ischaemic symptoms, ECG changes and cardiac marker (Troponin-I). Patients with liver disease and alcoholism were excluded from the study. GGT level was estimated by Kinetic colour test (OLYMPUS analyser) and Troponin-I by chemiluminescence method (ARCHITECT analyser).

Results: Multiple comparison of GGT levels by Games-Howell test showed a significant difference when ST segment elevation Myocardial Infarction (STEMI) group was compared with Unstable Angina Pectoris (UAP) group ($p=0.011$) and controls ($p=0.001$). Significant difference was also found when Non-ST segment elevation MI (NSTEMI) group was compared with UAP ($p=0.015$) and controls ($p=0.002$), but no significant difference when UAP was compared with controls ($p=0.083$). Among controls, significant difference was observed in the GGT levels between diabetic and non-diabetic ($p<0.001$), dyslipidemic and non-dyslipidemic ($p<0.001$) patients.

Conclusion: Serum GGT was higher in acute coronary syndrome patients. The higher difference with STEMI and NSTEMI groups than UAP group proposes a relationship between GGT and vulnerability of atherosclerotic plaque. As an atherogenic risk indicator, GGT activity is higher in patients with risk factors such as diabetes mellitus and dyslipidemia, therefore GGT estimation helps in identifying patients who are at risk of developing an acute coronary event.

Sujesh Kumar N, Sajithakrishnan, Subhakumari KN. Role of gamma glutamyl transferase as an atherogenic risk marker in acute coronary syndrome. J Clin Sci Res 2014;3(Suppl 3): A38.

Effect of supplementation of water soluble vitamins on lipid profile in prehypertension

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Background: JNC VII introduced the term 'Prehypertension' to denote blood pressure in the range of Systolic 120-139mmHg and Diastolic 80-89mmHg, which are higher risk of developing cardiovascular complications. Several studies have documented beneficial effect of vitamins on serum lipid profile in various cardiovascular disorders. But till date there is no study about the effect of supplementation of water soluble vitamins on lipid profile in prehypertension.

Aim: To evaluate the effect of supplementation of water soluble vitamins on lipid profile in prehypertension.

Methodology: Sixty Prehypertensive subjects were enrolled in the study. Prehypertensive subjects were categorized into two groups (30 in each). One group received water soluble vitamins and other group, placebo for a period of four months. Serum lipid profile was measured before, at the end of 2^{nd} and 4^{th} month of treatment in both groups. Statistical analysis was done by Two-way repeated measures ANOVA.

Result: Triacylglycerol and VLDL-C were significantly low in subjects on water soluble vitamins at the end of two and four months when compared to subjects on placebo at the end of two and four months ($p<0.001$). Within the group, no statistical significant difference was observed after two and four months with treatment of water soluble vitamins and placebo ($p>0.05$). There was no statistically significant difference in the levels of HDL-C and LDL-C when compared between two groups and within the groups at different time intervals ($p>0.05$).

Conclusion: Supplementation of water soluble vitamins reduces Triacylglycerol and very low density cholesterol in subjects with prehypertension.

Talikoti P, Bobby Z, Hamide A. Effect of supplementation of water soluble vitamins on lipid profile in prehypertension. J Clin Sci Res 2014;3(Suppl 3): A39.

Study of hsCRP and lipid profile as risk markers for cardiovascular diseases in smokers and non-smokers

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Objectives: Smoking causes oxidative stress and release free radicals which may damage the vascular endothelium leading to cardiovascular diseases. hsCRP is an inflammatory marker. It is a strong independent predictor in assessing the risk of future myocardial infarction, stroke and vascular death among individuals without known cardiovascular diseases. High cholesterol and triglycerides is also risk marker for cardiovascular diseases. In this study we are estimating and comparing 1. hsCRP levels and 2. Lipid profile in smokers and non smokers.

Material and methods: This study includes 30 healthy adult males aged 20-50years who were nonsmokers as controls and 30 males aged 20-50years who were smokers for more than one year are taken as cases. Fasting blood samples were collected with all precautions. Total cholesterol, triglycerides and HDL were estimated by fully automated humastar 600 analyzer. Estimation of hsCRP by immunoturbidimetric method and estimation of LDL was done by friedwalds formulae.

Results: Mean and standard deviation were calculated and compared between cases and controls. hsCRP levels in smokers (6.03 ± 0.70)and non smokers(1.26± 0.33)$p<0.05$.Total cholesterol in smokers (206.75±9.44) and non smokers(147± 2.83) $p<0.05$,Triglycerides in smokers(146.3±4.38) and non smokers(118±2.12) $p<0.05$,HDL in smokers(35.15±4.03) and nonsmokers(46±2.83)$p<0.005$, LDL in smokers(142.34±13.97)and nonsmokers(77.4±4.24) $p<0.05$.

Conclusion: From this study it is concluded that hsCRP and lipid profile were statistically significant increase in smokers when compared to non smokers. The mean value of hsCRP more than 6mg/l in smokers as it is one of the risk marker for cardiovascular disease. So hsCRP may provide as an adjunctive method for global assessment in primary prevention of cardiovascular diseases.

Balakrishnan R, Krishnamma M, Ramalingam K, Sowjanya B, Naidu J. Study of hsCRP and lipid profile as risk markers for cardiovascular diseases in smokers and non-smokers. J Clin Sci Res 2014;3(Suppl 3): A40.

Study of albumin creatinine ratio, a risk marker for cardiovascular disease in essential hypertension patients

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Objectives of the study: 1) To estimate the albumin creatinine ratio in spot urine sample of hypertensive patients and compare with normal individuals. 2) To determine whether the relation between albuminuria and cardiovascular risk can be used to predict cardiovascular morbidity and mortality in hypertensive patients.

Material & Methods: A total of 50 cases of hypertensive patients were taken for the study after satisfying the inclusion and exclusion criteria. Fifty cases of normal age and sex matched individuals were included in the study under the control group. All patients were evaluated in detail and microalbuminuria is defined as the albumin/creatinine ratio higher than 30mg/day and lowers than 300 mg/day. The spot morning urine sample was measured for Microalbumin by immunoturbidimetric method and for creatinine by Jaffe's method.

Results: Mean value of ACR ratio in cases is 35.0188mg/g of creatinine and of subjects in control is 17.332mg/g of creatinine. The difference was evaluated by Student's unpaired t-test and was found to be statistically signiûcant.(P value is 0.0001)

Conclusion: Microalbuminuria confers increased Ischemic heart disease (IHD) among hypertensive patients. A rigorous control of blood pressure and prevention of other atherosclerotic risk factors is recommended in hypertensive patients with microalbuminuria to prevent cardiovascular complications.

Manjula HS, Shetty HV. Study of albumin creatinine ratio, a risk marker for cardiovascular disease in essential hypertension patients. J Clin Sci Res 2014;3(Suppl 3): A41.

Abstracts of Platform Presentations (AMBICON – 2014)

Study of serum paraoxonase 1 and oxidative stress in hypertensive patients

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Objective : To correlate the oxidant load to the severity of hypertension. Correlate paraoxonase 1(PON 1) activity with oxidative stress and with severity of hypertension.

Materials and methods: The study was carried out in the department of Biochemistry of M.K.C.G Medical College, Berhampur. Forty hypertensive patients and forty age and sex matched healthy controls were included in the study. Serum paraoxonase 1 level was estimated by ELISA using commercial kits (Aviscera Bioscience). Total oxidant load in plasma was evaluated by FOX2 assay and total antioxidant capacity was evaluated by FRAP assay. Statistical calculation was done by SPSS version 16.

Results: Mean serum PON 1 level was 24.64 ng/ml in hypertensive cases and 41.36 ng/ml in controls. The difference of PON 1 level was significantly lower in cases ($p<0.01$). Total oxidant load was significantly higher in cases in comparison to controls ($p<0.01$).Serum PON 1 level decreases as oxidative stress increases.Serum PON 1 level was also decreases as the severity of hypertension increases.

ConclusionThere was increase in the oxidant load in hypertensive patients. Serum PON 1 level was inversely correlated with the total oxidant load and degree of hypertension among patient.

Jena D, Devi N, Mahapatra S, Swain S, Padhy RK, Rattan R. Study of serum paraoxonase 1 and oxidative stress in hypertensive patients. J Clin Sci Res 2014;3(Suppl 3): A42.

Diagnostic value of heart-type fatty acid binding protein in the early diagnosis of myocardial infarction

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Objective: To compare the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and diagnostic efficiency of heart-type fatty acid binding protein (H-FABP) with the conventional cardiac biomarkers (CK-MB, Troponin I and Myoglobin) in acute myocardial infarction (AMI) patients presenting within 3 hrs and between 3 – 6 hrs after the onset of chest pain.

Materials and methods: The study included 40 AMI patients and 40 non cardiac chest pain but otherwise healthy controls. The patients and controls were further divided into 2 groups depending on the time since chest pain, those patients presenting within 3 hours and between 3-6 hours of onset of chest pain. Serum H-FABP levels were estimated by Automated Immuno-turbidimetric method, serum Troponin I and Myoglobin were measured by Chemiluminescence Immunoassay and serum CK-MB by Immuno-inhibition method.

Results: The sensitivity, specificity, PPV, NPV of H-FABP were much greater than CK-MB and myoglobin and were slightly lesser than Troponin I in patients with suspected AMI both within 3 hrs and 3 – 6hrs after the onset of chest pain. Receiver operating characteristic curves demonstrated that Troponin I (AUC = 0.99 & $p<0.001$) had the greatest diagnostic ability followed by H-FABP(AUC=0.906 & $p<0.001$) with in first 6 hours after the onset of chest pain.

Conclusion: H-FABP is more sensitive and specific cardiac marker than CK-MB and myoglobin but slightly less sensitive and specific than troponin I for the early diagnosis of myocardial infarction within 6 hours of chest pain. H-FABP can be used as an additional diagnostic tool for the early diagnosis of myocardial infarction along with troponin I.

Pyati A, Rathi DB, Sajjannar S, Devaranavadagi BB. Diagnostic value of heart-type fatty acid binding protein in the early diagnosis of myocardial infarction. J Clin Sci Res 2014;3(Suppl 3): A43.

Iron status and serum lipids in prehypertension and hypertension

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Free iron is involved in free radical production which is linked to vascular endothelial dysfunction leading to hypertension and its associated risk.Similarly, association between lipids and hypertension is well established.

Objectives: To measure iron status, lipids and Malondialdehyde (MDA) in serum of patients with essential hypertension and prehypertension and compare with healthy volunteers.

Materials And Methods:Iron,TIBC (Total iron binding capacity) andFerritin,Total cholesterol, Triglyceride, HDL cholesterol, LDL cholesterol, MDA , were measured in serum of 50 subjects with prehypertension, 60 with essential hypertension and 50 healthy volunteers.

Results : Mean serum levels of iron and ferritin were significantly increased in hypertensives (p=0.02 & 0.001 respectively) and prehypertensives (p=0.03 & 0.01 respectively) when compared to healthy volunteers. Mean serum levels of Total Cholesterol, Triglycerides, LDLc and MDA were significantly increased (p=0.0001for all) and HDLc was significantly decreased (p=0.0001) in hypertensives when compared to healthy subjects. Mean serum levels of Triglycerides (p=0.003) and MDA (p=0.0001) were significantly increased and HDLc (p=0.018) was significantly decreased in prehypertensives when compared to healthy subjects. Non significant increase of mean serum levels were observed inTotalCholesterol (p=0.272) and LDLc (p=0.635) in prehypertensives when compared to healthy subjects.

Conclusion: Our results revealed that hypertension and prehypertension are associated with increased serum iron and ferritin, dyslipidemia and increased MDA.Our study suggests need for early detection and intervention of prehypertension and hypertension to reduce adverse health consequences of hypertension and its impact.

Suma Preethi A, Vijaya Bhaskar M. Iron status and serum lipids in prehypertension and hypertension. J Clin Sci Res 2014;3(Suppl 3): A44.

A study of association of serum estrogenic and androgenic profile with lipid profile for assessment of cardiovascular risk in premenopausal women

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Objectives: Cardiovascular disease (CVD)s are the number one leading cause of death globally. Women continue to have a high cardiovascular mortality than men in the past 20 years which is underestimated. The female sex hormone milieu has cyclic change that can influencethe cardiovascular risk factors. As CVD death strikes in middle age of life itself the association of androgen and estrogen multiple cardiovascular risk factors status in premenopausal women becomes a need with the objectives: 1) To study the association of serum Estrogen, Testosterone, SHBG, Free Estrogenic Index (FEI) and Free Androgenic Index (FAI) with lipid profile in premenopausal women. 2) To assess the cardiovascular risk in premenopausal women with respect to their androgenic status.

Material and methods: The blood from 120 volunteered premenopausal women of age between 20-40years collected for biochemical assay of serum Estradiol, Testosterone, SHBG, DHEA and lipid profile by standard methods.

Results: Testosterone levels even in normal range showed a significant positive association withLDL-CC ($r=0.202$, $p<0.05$), Atherogenic index of plasma (AIP) ($r=193$, $p<0.05$) and negative association with HDL-C($r= -0.114$, p=NS).31.6% (38/120) were obese with (BMI >23 kg/m^2). The correlation of Estradiol, DHEA, SHBG, FEI and FAI with lipid parameters was not significantly made in this study.

Conclusion: Thus in premenopausal period androgen levels influences dyslipidemia and cardiovascular risk as age advances to menopause transition.

Suganthy K, Mohanty PK, Rajagopal V, Vijayabanu N. A study of association of serum estrogenic and androgenic profile with lipid profile for assessment of cardiovascular risk in premenopausal women. J ClinSci Res 2014;3(Suppl 3): A45.

The biomarkers of subclinical atherogenesis in healthy adult male smokers

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Introduction: Cigarettesmoking isone of the major healthhazards of the world population as it is contributing to the cardiovascular diseases and tothe increasing proportion of the sudden deaths. hsCRP and Fibrinogen are independent &significant markers of cardiovascular mortality.

Objectives:The aim of the study isto identify the earlier markers of atherogenesis in healthy adult male smokers for better riskprediction and screening purpose.

Material and methods: 60 adult healthy men of age group 19-49 years were enrolled. 30smokers &30 non- smokers. Smokers were compared with the non-smokers by doing the blood tests which included blood glucose, lipidprofile, hsCRP and Fibrinogen**.**

Results: Smokers had significantly higher levels of total serum cholesterol [245.03±72.82 vs160.07±21.39 p<0.000], LDL levels [149.17±48.87vs.98.67±14.93p<0.001] and triglyceride levels[152.43±52.40vs. 94.83±17.75p<0.000]. HDL levels were low in smokers. hsCRP & Fibrinogen levels were higher in smokers [6.8±3.04 vs 1.38±0.67; p<0.001 & 644.20±231.38 vs 300.20 ± 49.91; p<0.001] respectively. There is a positive correlation between hsCRP &Fibrinogen levels (r=0.882; p<0.000).There is a positive correlation between the duration of smoking and hsCRP& Fibrinogen levels [r=0.871,p<0.000 & r=0.917p<0.000] .

Conclusion: This case control study shows significantlyhigherhsCRP& Fibrinogen levels in smokers in proportion to the duration & amount of cigarettes smoked pre day , as compared to the non-smokers. ThushsCRP&Fibrinogen can be used as thebio markers of sub-clinical atherogenesis screening in healthy adult male smokers.

Thivyah Prabha AG, Ramalingam K, Naidu JN, Krishnamma M, Deepthi SK. The biomarkers of subclinical atherogenesis in healthy adult male smokers. J Clin Sci Res 2014;3(Suppl 3): A46.

A study of biomarkers for early diagnosis of diabetic kidney disease

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Objectives: To compare various biomarkers for early detection of diabetic kidney disease.

Material and Methods: Newly diagnosed patients of type 2 diabetes mellitus attending diabetic OPD of a tertiary care centre were screened for proteinuria. Patients having frank proteinuria were excluded. Patients without frank proteinuria were tested for microalbuminuria. Microalbuminuria positive patients were further investigated for kidney function. 50 such patients were compared with age matched diabetics without microalbuminuria.Following investigations were carried out: Serum Urea Nitrogen, S.Creatinine, S.Cystatin C, Urine albumin to creatinine ratio.

Results: Serum Urea Nitrogen ($p = 0.14$) and S.Creatinine ($p = 0.06$) were within reference range in both groups. S. Cystatin C ($p = 0.0072$, $p < 0.01$) and urine albumin to creatinine ratio ($p = 0.0089$, $p < 0.01$) were significantly raised in microalbuminuric diabetic patients.

Conclusion: Diabetic kidney disease is the leading cause of chronic kidney disease and end stage renal disease. Early recognition is vital for further management. Commonly used parameters for diagnosing kidney disease like Serum Urea Nitrogen and S.Creatinine were within normal limits. S.Cystatin C was found to be raised in microalbuminuric patients suggesting early nephropathy. Thus, it is concluded that S.Cystatin C can be used as early independent marker of diabetic kidney disease, as routine biochemical parameters like Serum Urea Nitrogen & S. Creatinine fail to recognize early diabetic kidney disease. We also observed increase in urine albumin to creatinine ratio in microalbuminuric patients, which needs further evaluation.

Shelke SN, Ingale P, Sundharan S. A study of biomarkers for early diagnosis of diabetic kidney disease. J Clin Sci Res 2014;3(Suppl 3): A47.

Abstracts of Platform Presentations (AMBICON – 2014)

Association of serum uric acid with pancreatic beta cell mass and plasma insulin in type 2 diabetes mellitus

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Objective: Several studies in recent past have postulated the role of high serum uric acid (UA) levels in the pathophysiology of the insulin resistance, metabolic syndrome, and type 2 diabetes mellitus (T2DM). We aimed to study the association of UA with plasma insulin, pancreatic beta cell mass, HOMA-IR, and glycosylated hemoglobin (HbA1c) in patients with T2DM.

Material and methods: In a prospective case control study, serum UA, fasting plasma glucose (FPG), plasma insulin, glycosylated hemoglobin (HbA1c), HOMA-IR and HOMA- B were measured among 70 T2DM patients (both males and females, age group; 30-80 years); and compared with 50 healthy age matched controls.

Results: Compared to controls, patients with T2DM had higher FPG (90.62 ± 6.84 vs. 165.81 ± 61.96 mg/dl, respectively, $p<0.001$), HOMA-IR (2.29 ± 1.44 vs. 5.16 ± 4.41, $p<0.001$), plasma insulin (10.04 ± 6.03 vs. 12.71 ± 10.77 ìIU/ml, $p=0.420$), serum UA levels (4.77 ± 1.51 vs. 5.33 ± 1.94 mg/dl, $p=0.126$); but lower beta cell function (131.10 ± 75.76 vs. 59.92 ± 57.13%, $p<0.001$). Serum UA showed a negative correlation with FPG ($r = - 0.255$; $p=0.033$) and HbA1c ($r = - 0.067$, $p>0.05$); but had a positive correlation with plasma insulin ($r = 0.164$; $p=0.174$), HOMA-IR ($r = 0.104$; $p=0.392$) and HOMA-B ($r = 0.171$; $p=0.156$). In multivariate logistic regression analysis, serum UA did not attain statistical significance [odds ratio (OR): 1.2, 95% confidence interval (CI): 0.83-1.74, $p=0.333$] after adjustment for age, gender, insulin resistance, and beta cell function.

Conclusion: Hyperuricemia may augment insulin secretion by stimulating pancreatic beta cells; especially in early stage of T2DM.

John J, Sarangi RL, Asha D, Umadevi SV, Padhi S, John NA. Association of serum uric acid with pancreatic beta cell mass and plasma insulin in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3): A48.

Enzymatic markers in diabetes with periodontitis

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Objective: Diabetes mellitus is a risk factor for progressive periodontal destruction. Diagnosis of periodontitis is hitherto done clinically. Components of salivary proteome, enzymes, are gaining importance because of their simple and non-invasive nature. The objective of this study was to estimate the levels of aspartate aminotransferase (AST), alkaline phosphatase (ALP), lactate dehydrogenase (LDH), β glucuronidase and neutrophil elastase (NE) in saliva and serum so as to identify the appropriate biological fluid and a biomarker as a chair-side test for periodontitis.

Methods: 40 subjects were categorized into four groups: Group-I (10 Healthy individuals), Group-II (10 Type-2 Diabetes without Periodontitis), Group-III (10 Periodontitiswithout Type-2 Diabetes) and Group-IV (10 Type-2 Diabetes with Periodontitis). Periodontal involvement was confirmed by presence of hard deposits or inflammation or bleeding on probing. Clinical parameters like Probing Pocket Depth (PPD), Plaque Index (PI) and Gingival Index (GI) were recorded. Saliva and blood samples were collected. AST, ALP and LDH were analyzed on Autoanalyser. β Glucuronidase activity was determined using Fishman's method, NE activity was determined spectrophotometrically.

Results: All salivary and serum enzymes were raised maximally in group IV ($p \leq 0.01$). Serum β Glucuronidase correlated fairly with all the clinical parameters ($p<0.05$). Salivary AST correlated strongly with PPD and GI ($p < 0.01$); Salivary β Glucuronidase correlated fairly with PPD ($p \leq 0.05$).

Conclusion: Salivary AST can be used as screening biomarker for periodontitis in Diabetes mellitus as an economic and non invasive test with less turn around time.

Gawali S, Chavan P, Deepak AD. Enzymatic markers in diabetes with periodontitis. J Clin Sci Res 2014;3(Suppl 3): A49.

Abstracts of Platform Presentations (AMBICON – 2014)

Mitochondrial mass and oxidative stress parameters in diabetic patients with poor glycemic control

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Introduction: Mitochondria are the major endogenous source of reactive oxygen species (ROS). ROS are considered to be causal link between increased glucose levels and the other metabolic abnormalities important in the development of diabetic complications. Oxidative stress and changes in nitric oxide (NO) formation or action play major role in the onset of diabetic complications.

Aim & Objective: To evaluate the effect of glycemic control and oxidative stress on mitochondrial content of leukocytes in diabetic patients.

Material and Methods: Fifty diabetic patients were selected and 2 groups were done based on their HbA1c values (Group A – HbA1c < 7% and Group B – HbA1c > 7%). Plasma glucose, HbA1c, NO, Malondialdehyde (MDA), Citrate synthase activity and Superoxide dismutase (SOD) were estimated. Mitochondrial mass was measured using Becton Dickson FAC Scan flow cytometer.

Results: MDA ($p=0.033$), NO($p<0.001$), SOD($p=0.045$), Citrate synthase($p<0.001$) activity and mitochondrial mass were significantly increased in poor glycemic control diabetic patients. HbA1c showed strong positive correlation with MDA($r=0.659$), NO($r=0.546$) and citrate synthase($r=0.649$) activity.

Conclusion: Oxidative stress plays a major role in mitochondrial content of leukocytes. Poor glycemic control causes increase in mitochondrial content resulting in increased free radicals which might be due to alteration in nitric oxide biology. Increased NO and SOD might be due to overproduction by mitochondrial induction of eNOS and MnSOD.

Renuka P, Vasantha M. Mitochondrial mass and oxidative stress parameters in diabetic patients with poor glycemic control. J Clin Sci Res 2014;3(Suppl 3): A50.

The role of vitamin D as a causative of insulin resistance and prediabetes

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Objective: Vitamin D has become a molecule of importance in the recent past. It shows varied areas of action influencing various metabolic processes. Present study focused on Vitamin D levels in relation to Insulin Resistance (IR) in prediabetic stage as compared to normal people. IR is markedly increased in people in prediabetic state and vitamin D showed a deficiency or severe insufficiency in such people.

Materials and Methods: 70 normal people of age group 35-55 were chosen for study. In this, 35 were males and 35 were females. For all the people, Fasting plasma insulin, Fasting blood glucose, HbA1C and vitamin D levels were done and HOMA IR was calculated.

Results: On calculation of HOMA IR, out of 35 males, 20 were having high IR and 15 had normal or slightly higher IR, Their FBG levels were above 100 mg/dL but below 120 mg/dL. HbA1C was above 6% but below 6.8%. Fasting insulin levels were higher and vitamin D levels for the same people were lower. These were grouped under prediabetes. Similarly, out of 35 females, 22 were in prediabetic stage as compared to the other 13 people.

Conclusion: Vitamin D is found to be deficient in all the people in prediabetic stage. The IR was also reciprocally high indicating a correlation of vitamin D levels, IR and prediabetic stage. Thus Vitamin D can be chosen as a marker for pre diabetes and can be used both diagnostically and theraupeutically to prevent the conversion of prediabetes to frank diabetes.

Danurthy LL, Baratam SB, Kumar SS, Dantuluri R. The role of vitamin D as a causative of insulin resistance and prediabetes. J Clin Sci Res 2014;3(Suppl 3): A51.

Abstracts of Platform Presentations (AMBICON – 2014)

The Association of rs7903146 (C/T) and rs 12255372(G/T) polymorphisms of the TCF7L2 gene with type 2 diabetes mellitus in Chennai sub-urban population

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Objective: To evaluate the association of T allele in the single nucleotide polymorphism (SNP) of TCF7L2 at rs7903146 and rs12255372 with the occurance of type2DM and its association with GLP-1 level in Chennai suburban population.

Materials and methods: The SNP rs7903146(C/T) of TCF7L2 was genotyped by RFLP using Hpy CH4III enzyme and rs12255372(G/T) of TCF7L2 was genotyped by allele-specific PCR in 44 known type 2 diabetic cases and in 44 healthy controls , which was confirmed by gene sequencing. GLP-1 was assayed using RayBiotechELISA kit.

Results: The distributions of alleles were in accordance with hardy-weinburg equilibrium. The "T'' allele frequency at rs7903146 (C/T) is significantly higher in type2DM (30.7% & 2.3%: p <0.001) as compared to C allele (69.3% & 97.7 %: p<0.001) which is common in controls . The "T & G" alleles frequency at rs12255372 (G/T) is not significant in the study population (T = 23.9% & 15.8%:p=0.112, G = 76.1% & 84.1%:p=0.112). The circulating levels of GLP-1 correlates with the polymorphism at rs7903146 being significantly high in CC genotype as compared to CT genotype.(CC: cases =0.395 pg/ml, controls=3.714pg/ml , p=0.001, CT : cases= -0.413 pg/ml ,controls =0.935 pg/ml, p=0.001).

Conclusion: The T allele at rs7903146(C/T) in TCF7L2 gene shows higher incidence as compared to the rs12255372(G/T) in cases. CT genotype shows lower levels of GLP-1 as compared to CC genotype . T allele for rs 7903146 of TCF7L2 with an odds ratio of 19.03 (95% CI , 4.36 to 83.05;p<0.001), predicts the risk of developing Type2 DM in chennai suburban population. The polymorphism at rs12255372(G/T) does not show significant susceptibility to diabetes which is not in accordance with other studies in various populations.

Lavanya Devi B, Meera V, Komala G. The association of rs7903146 (C/T) and rs 12255372(G/T) polymorphisms of the TCF7L2 gene with type 2 diabetes mellitus in Chennai sub-urban population. J Clin Sci Res 2014;3(Suppl 3): A52.

Serum magnesium and zinc concentrations in diabetic retinopathy in a tertiary care centre in Assam

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Objectives: To determine serum magnesium and serum zinc concentrations in patients with and without diabetic retinopathy; any association, thereof.

Materials and methods: **Inclusion criteria**: Patients with Diabetes mellitus, diagnosed clinically (supported by earlier Blood Glucose concentration, HbA1c%, wherever available); attending Retina clinic in the Department of Ophthalmology, AMCH. Direct, Indirect Ophthalmoscopy, Fundus Fluorescein Angiography (FFA) used to diagnose Diabetic Retinopathy. **Exclusion criteria:** Refusal of consent, serum creatinine >1.5mg/dl, retinopathy other than diabetic retinopathy, on drugs or having conditions, altering parameters under study. Serum Magnesium was estimated by Calmagite Method, Serum Zinc by Colorimetric Method,Plasma Glucose by Glucose Oxidase/Peroxidase Method, Blood Urea by Mod. Berthelot Method, and Serum Creatinine by Alkaline Picrate Method.

Reults: In diabetics without retinopathy and diabetics with non-proliferative retinopathy, serum magnesium (in mg/dl) of 2.52$\pm$0.15, 2.32$\pm$0.11, respectively (p<0.001) and serum zinc (in ìg/dl) of 95.18$\pm$ 13.95, 68.07$\pm$ 9.41, respectively (p<0.001) observed.

Conclusion: Lower seum magnesium and zinc concentrations in diabetic retinopathy could be an effect rather than cause. Reduced peripheral glucose uptake, increased oxidative stress, prostacyclin -thromboxane imbalance have been suggested under lower serum magnesium state. Perturbations in plasma glucose levels, altered retinal concentration of Thiobarbituric Acid Rreactants (TBARS) and reduced Glutathione; have been reported in animal model under lower plasma zinc concentrations.

Gupta P, Goswami RK, Kuli JJ. Serum magnesium and zinc concentrations in diabetic retinopathy in a tertiary care centre in Assam. J Clin Sci Res 2014;3(Suppl 3): A53.

Abstracts of Platform Presentations (AMBICON – 2014)

Leptin levels and insulin resistance in newly diagnosed cases of type 2 diabetes mellitus

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Objective: To estimate the levels of Leptin and Insulin resistance in newly diagnosed type-2 diabetes patients.

Material and methods: 60 of our hospital OPD patients diagnosed as type-2 diabetes mellitus for the first time by Medicine Department were selected. Appropriate history and routine investigation reports of Fasting, Postprandial blood sugar and HbA1C were collected. Their fasting serum Leptin and Insulin levels were estimated. Insulin Resistance (IR) was calculated using HOMA-IR (Homeostatic model assessment) formula [Fasting blood sugar (mg/dl) X Fasting plasma insulin (μIU/mL)]/405

Results: Leptin levels were significantly high in our study population in both males (mean 21.34 ng/ml [95% CI 7.58-27.59]) (P<0.001) and females (mean 44.95 ng/ml [95% CI 22.89-52.19]) (P<0.001). Similarly, their HOMA-IR was significantly increased (mean 7.76 [95% CI 6.77-10.78]) (P<0.001). Though, Leptin levels showed significant rise with increasing age (P< 0.05) and BMI (P< 0.001), HOMA-IR did not show any such significant variation with respect to age, sex and BMI.

Conclusion: Leptin-adipokine is a key regulator of energy homeostasis. High levels of leptin reflecting leptin resistance plays an important role in development of Diabetes Mellitus.

Moonishaa TM, Nanda SK, Shamraj M. Leptin levels and insulin resistance in newly diagnosed cases of type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3): A54.

Correlation of plasma omentin -1with insulin resistance in type-2 diabetes mellitus

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Aim and Objective: Omentin –I is a novel adipokine expressed in visceral adipose tissue and has been reported to be negatively associated with insulin resistance (IR). The present study aimed at assessing the correlation of plasma Omentin –I with IR in type-2 diabetes mellitus patients as measured by Homeostasis Model Assessment (HOMA-IR). There have been very few reports (if any) from Indian subcontinent on the role of Omentin in IR.

Material and methods: It is a case control study. Forty-five cases of Type-2 DM patients and equal number of age and sex matched controls were included in the study. Fasting insulin, fasting Omentin-I and Glucose levels were estimated by ELISA methods using a commercial ELISA kit and GOD –POD method respectively.

Results: HOMA-IR score was calculated. HOMA-IR = [Fasting Glucose (mg/dl) x Fasting Insulin (mU/ml)] / 405. This was correlated with levels of serum Omentin-I. Diabetic group had significantly lower Plasma Omentin-I levels than the control group (p<0.01).

Conclusion: Omentin-I levels were significantly low in diabetic patients. The negative correlation signifies that when IR worsens the level of Plasma Omentin-I decreases. Thus this adipokine holds promise as a therapeutic target in future.

Nanda B, Mahapatra S, Swain S, Devi N, Padhy RK, Rattan R. Correlation of plasma omentin-1 with insulin resistance in type-2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3): A55.

Abstracts of Platform Presentations (AMBICON – 2014)

Does vitamin D supplementation affect telomere length in post menopausal women suffering from metabolic syndrome?

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Objectives: To study the effect of vitamin D supplement on telomere length, in post menopausal women, with metabolic syndrome.

Methodology: The study included 80 post menopausal women between ages 45-65 years with metabolic syndrome. The patients were recruited sequentially into two groups. Group I received placebo and group II received 60,000 IU of oral cholecalciferol capsule for once a week for 8 weeks followed by once every 4 weeks for 8 weeks.

Relative telomere length was measured in leucocytes at base line and after 16 weeks by multiplex real time PCR using two pairs of primers, one specific for telomere repeats and another for a single copy gene. The ratio of signals from telomere and single copy gene (T: S) were used to estimate the relative telomere length (RTL) of a particular sample in comparison to an arbitrarily chosen standard DNA.

Results: The mean relative telomere length (RTL) at baseline for Group I and II were 1.75±0.84 and 1.39±0.80 respectively. After completion of therapy the RTL in Group I and II increased to 2.03±0.67 and 1.90±0.69 respectively. The increase in RTL in group treated with Vitamin D was statistically significant ($P< 0.001$).

Conclusion: Vitamin D supplementation may have a positive effect on telomere length. A follow up study on large number of sample needs to be done to arrive at a definite conclusion.

Kar R, Bhagwat NP, Giri S, Singh S, Goel A, Mehndiratta M. Does vitamin D supplementation affect telomere length in post menopausal women suffering from metabolic syndrome? J Clin Sci Res 2014;3(Suppl 3): A56.

Serum gamma-glutamyl transferase levels in metabolic syndrome in south Indian population

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Objectives: Obesity has reached epidemic proportions in India with morbid obesity affecting 5% of Indian population. High waist circumference, reflecting central obesity is associated with an increased risk of type -2 Diabetes, dyslipidemia, hypertension and coronary vascular disease. Generation of free radicals in central obesity depletes intracellular glutathione, thereby induces production and release of Gamma Glutamyl Transferase(GGT) into circulation.Metabolic syndrome , also known as syndrome X is associated with increased cardiovascular risk. Hence the aim of this study is to explore the association of GGT levels with components of metabolic syndrome in obese South Indian population.

Material and methods: This study conducted at MHC dept, Sri Ramachandra medical college included 60 obese and 60 non obese,non- smoker and non- alcoholics, age and gender matched cases and controls between the age of 30-50 years.

Waist circumference, blood pressure, fasting plasma glucose, lipid profile, lipid ratios and GGT measured in both the groups. Data compared with unpaired student t-test. Pearson's correlation used to find the association of serum GGT levels with other variables in obese individuals.

Results: Atherogenic dyslipidemia and increase in BP are documented in obese individuals which is associated with elevated serum GGT levels ($p<0.05$).

Conclusion: Elevated serum GGT levels are associated with components of metabolic syndrome in obese South Indian population.

Fernando ML, Silambanan S, Malar J. Serum gamma-glutamyl transferase levels in metabolic syndrome in south Indian population. J Clin Sci Res 2014;3(Suppl 3): A57.

Abstracts of Platform Presentations (AMBICON – 2014)

Vitamin D status in type 2 diabetes mellitus

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Objective: Type 2 Diabetes Mellitus (T2DM) is a progressive disease characterized by both insulin resistance and â-cell dysfunction. Several studies have revealed the inverse relationship between vitamin D deficiency and T2DM. Vitamin D deficiency is thought to influence insulin resistance and the pathogenesis of T2DM by affecting either insulin sensitivity or â-cell function or both. It has been shown that vitamin D replenishment improves insulin sensitivity in patients with T2DM and also decreases the progression of diabetic neuropathy. The presence of vitamin D receptors (VDR) and vitamin D binding proteins (DBP) in pancreatic tissue and the relationship between certain allelic variation in the VDR and DBP genes with glucose tolerance and insulin secretion have further supported this hypothesis. Therefore the aim of the study is to examine the association between vitamin D deficiency andT2DM.

Material and methods: Study design is a case-control study. 50 non-diabetic individuals were taken as controls and 50 patients with known DM were taken as cases. Serum levels of 25(OH)-vitamin D level were measured in both groups. The data were collected and analyzed.

Results: Vitamin D level was found to be significantly low in diabetic patients compared with controls (p value<0.05).

Conclusion: The results show that Vitamin D deficiency plays a significant role in pathogenesis of T2DM and supplementation of vitamin D will help to improve the insulin sensitivity and â-cell function in these patients.

Lakshmi G, Jothi Malar. Vitamin D status in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3): A58.

Does HbA1c affects oxygen saturation (SpO_2) in ambulatory diabetic individuals?

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Objectives: Hemoglobin is the principal carrier of oxygen in the body. Any modification of its structure appears to alter its function also. It is reported that glycation of Hb increases affinity for oxygen and reduces of oxygen delivery to the tissues in patients on mechanical ventilation. We thus evaluated the effect of glycation of Hb on O_2 saturation in a wide range of HbA1c levels from ambulatory.

Material and methods: A cohort of 50 subjects irrespective of age and sex and diabetic status were recruited in the study and were later grouped in diabetic and non-diabetic group according to ADA criteria. Apart from anthropometry and routine biochemical investigations, serum insulin, Hb and HbA1c levels were estimated in fasting blood samples and pulse oximetry was also carried out.

Results: A total of 29 participants were diabetic and 21 were normal individuals. SpO2 was low in diabetes group but difference was not significant. No statistically significant correlation was observed between HbA1c values and SpO2 (r= 0.035, p=0.818). However, SpO2 correlated significantly with BMI (r=-0.364, p=0.048) and waist circumference (r=-0.387, p=0.035) in diabetes group.

Conclusion: Though a few previous studies indicated that there is positive correlation between HbA1c and oxygen saturation, we did not observe any such relation. It is thus concluded that in ambulatory individuals, rather than glycation of Hb, obesity significantly affects O2.carrying capacity of Hb. However, larger sample size is required to confirm the findings.

Garg S, Madhu SV, Gupta S, Mobeen MS. Does HbA1c affects oxygen saturation (SpO2) in ambulatory diabetic individuals?. J Clin Sci Res 2014;3(Suppl 3): A59.

Abstracts of Platform Presentations (AMBICON – 2014)

Urinary vanillylmandelic acid excretion in metabolic syndrome: a hospital based study

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Objective: To explore the relationship between urinary VMA and obesity/metabolic syndrome (MetS) related factors in Adult population aged 16-60 attending a Medical college in Western U.P.

Material and methods: Height, weight, waist circumference, blood pressure (BP), triglyceride (TG), total cholesterol (TC), fasting plasma glucose (FPG), high lipoprotein cholesterol (HDL-C) were observed among these adult.

Results: A total of 161 subjects were included in the study. 71 cases of MetS patient were diagnosed according to IDF 2006 criteria and 90 controls (Normal, Overweight or Obese but not MetS) were randomly selected. UVCR (urinary VMA adjusted for creatinine ratio) was transformed with base 10 logarithm (logUVCR). Associations between MetS related components and UVCR were tested usingPartial correlation analysis, Factorial ANOVA and linear regression models.

Conclusion: 1) UVCR was positively correlated with BMI (r=0.406, P=0.000, n=161), waist circumference, Fasting TG and FPG while negatively correlated with HDL-C. With BMI under control, the relationships disappeared. 2) Through linear regression models, factors as waist circumference, BMI were the strongest factors related to VMA (UVCR), followed by fasting plasma sugar, HDL-C. With BMI under control, the relationships disappeared. VMA was strongly correlated with BMI, Waist Circumference and FPG in obesity and MetS. Obesity was the strongest and the independent influencing factor of VMA.

Opendro TS, Sonali C, Haren B, Sarkar G. Urinary vanillylmandelic acid excretion in metabolic syndrome: a hospital based study. J Clin Sci Res 2014;3(Suppl 3): A60.

A comparative study of serum amylase, estimated glomerular filtration rate and serum insulin levels in metabolic syndrome and diabetes mellitus (type 1 and type 2)

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Aims and Objective: Animal and cellular studies proved an interrelationship between endocrine and exocrine function of pancreas via the islet – acinar axis. Several studies identified low serum amylase levels in metabolic syndrome and diabetes mellitus (type 1 and type 2).To measure and compare serum amylase and insulin levels in metabolic syndrome and in type 1 diabetes mellitus and type 2 diabetes mellitus and to calculate eGFR by measuring serum creatinine to assess renal dysfunction and correlate with serum amylase levels.

Material and methods:In 30 Metabolic syndrome patients aged ≥ 40 yrs , 30 DM Type 1 patients aged ≤ 25 yrs and 30 patients of DM Type 2 aged ≥ 40 yrs , possible exocrine-endocrine relationship of the pancreas was assessed by measuring serum insulin and amylase using autoanalyser and eGFR was calculated by measuring serum creatinine manually.

R**esults**: Mean amylase (40.53±16.58) is significantly less in DM Type I (P<0.001) compared to DM Type II (75.13±44.81) and metabolic syndrome (58.77±17.45). In DM type I the serum amylase is lowest (35.79 ± 17.26) with serum insulin levels of 0 – 4 µIU/ml. In DM Type II, the serum amylase (74.13 ± 41.67) is lowest with higher insulin levels of e" 20 µIU/ml than with moderate insulin resistance 10-20 µIU/ml. The amylase levels were lowest with high insulin resistance in metabolic syndrome. There was no significant correlation of eGFR with serum amylase among the groups.

Conclusion: Low serum amylase is associated with decreased basal insulin levels and insulin secretion, as well as high insulin resistance than with moderate resistance. Low serum amylase indicates exocrine pancreatic insuffiency suggesting pancreatic enzyme replacement therapy may improve the nutritional status. Also, serum amylase could be an additional parameter for the assessment of chronicity, progress of the illness and response to therapy.

Chandana G, Raghavendra DS, Veigas NM. A comparative study of serum amylase, estimated glomerular filtration rate and serum insulin levels in metabolic syndrome and diabetes mellitus (type 1 and type 2). J Clin Sci Res 2014;3(Suppl 3): A61.

Abstracts of Platform Presentations (AMBICON – 2014)

Serum total and ionized magnesium levels in type 2 diabetes mellitus patients

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Background: Magnesium ion has an important role in carbohydrate metabolism and plays a key role in insulin secretion and activity.

Objective: Therefore, the aim of this study was to evaluate circulating serum total magnesium (t-Mg) and ionized magnesium (i-Mg) concentrations in patients with type 2 diabetes mellitus, and to compare with the non-diabetic healthy control subjects.

Material and methods: This case-control study involving 30 patients with type 2 diabetes mellitus and 30 age and gender matched controls was conducted by theBiochemistry department and Medicine's outpatient service at the BPS Government Medical College-Hospital, Haryana, India.We measured fasting plasma glucose (FPG), glycated hemoglobin (HbA1C), t-Mg and serum i-Mg.

Results: In independent samples t-test, FPG (197.4±87.9 vs. 95.0±10.9 mg/dL, p<0.001) and HbA1C (9.59±2.44 vs. 5.32±0.55 %, p<0.001) were found to be significantly high in diabetic group versus control group. Serum t-Mg (0.86± 0.10 vs. 1.17± 0.50 mg/dL, p=0.002) and i-Mg (0.52± 0.04 vs. 0.55± 0.06 mmol/ L, p=0.028) levels were significantly reduced in diabetic patients when compared to control subjects. However, there were no significant correlations between study variables in the patient group which is attributable to less sample size.

Conclusions: Magnesium disturbances are evident in the form of decrease in both t-Mg and i-Mg in diabetic patients. Therefore, measurement of serum magnesium (total and ionized) is a useful biochemical tool for the study of hypomagnesemia associated with diabetes. Further studies need to be done with a larger sample size.

Madaan H, Aggarwal P, Reddy VS, Garg R, Trehan AS, Sachdeva A. Serum total and ionized magnesium levels in type 2 diabetes mellitus patients. J Clin Sci Res 2014;3(Suppl 3): A62.

Study of acute phase reactants in pre-diabetics

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Objective: Prediabetes, an early stage in the hyperglycaemiccontinuum and a pro inflammatory state, increases the future risk of developingdiabetes and cardiovascular disease (CVD). The aim of the present study was to see whether the inflammatory mediators are increased in prediabetes and whether any correlation existed between systemic pro-inflammatory marker levels and dysglycemia.

Materials and Methods: We analyzed positive acute phase reactants Serum ferritin, High sensitive C-Reactive protein (HsCRP),Uric acid and albumin, a negative phase reactant in 47 prediabetic subjects, 37 subjects with Type 2 Diabetes mellitus(T2DM) and in 23 age matched healthy controls.American Diabetic Association criteria was employed to identify subjects with prediabetes and T2DM who were recruited in this study**.**

Results: The positive acute phase reactants HsCRP was significantly higher in prediabetics (5.36±5.39: p=0.0110) and negative phase reactant albumin was significantly lower (4.02±0.42: P<0.0001) in prediabetics when compared with normoglycemic healthy controls (HsCRP: 2.01±2.25; Albumin: 4.72±0.30). The mean values of Serum ferritin was more in prediabetics (94.67± 71.74) than in normo-glycemics (71.28±63.98), but was not statistically significant. The mean values of positive acute phase reactants were higher in T2DM patients than in prediabetics, but were not statistically significant either. Similarly serum Albumin was lower in diabetic group when compared to prediabetics with no statistical significant difference.

Conclusion: The pro-inflammatory markers are increased in prediabetics and our findings reinforce the importance of periodical monitoring of this vulnerable group who are at risk of developing cardiovascular disease.

Chandrika N, Usha SMR, Shetty HV. Study of acute phase reactants in pre-diabetics. J Clin Sci Res 2014;3(Suppl 3): A63.

Abstracts of Platform Presentations (AMBICON – 2014)

Correlation of lipid levels with severity of retinopathy in patients with type 2 diabetes mellitus among residents of rural Puducherry

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Background: Diabetic retinopathy is a leading cause of visual morbidity. Duration of diabetes, hypertension and poor glycemic control are known risk factors for retinopathy. However the role of dyslipidemia is less clear as various studies give conflicting results.

Aim: To determine the correlation of serum lipids with retinopathy in patients with type 2 diabetes mellitus

Material and methods: This study was conducted in Sri Manakula Vinayagar Medical College and Hospital, Pondicherry. 100 patients with type 2 diabetes with a normal BMI were examined for retinopathy and graded according to ETDRS guidelines. The patients were divided into diabetics without NPDR, mild NPDR, moderate NPDR and severe NPDR. HbA1c, fasting blood glucose and fasting lipid profile were evaluated.

Results: Age, duration of diabetes, systolic and diastolic blood pressure correlated significantly with increasing severity of retinopathy with r= 0.253 (p= 0.011), r= 0.401 (p< 0.001), r= 0.373 (p< 0.001) and r= 0.465 (p< 0.01) respectively. Laboratory parameters showing a significant positive correlation with severity of retinopathy were fasting blood sugar r= 0.480 (p <0.001), glycated hemoglobin r= 0.460 (p<0.001), triglycerides r= 0.279 (p= 0.005), total cholesterol r= 0.246 (p=0.014), LDL, r= 0.238 (p=0.017) and VLDL, r= 0.292 (p= 0.003). HDL cholesterol correlated negatively with retinopathy (r= -0.038) but was not significant (p= 0.706).

Conclusion: Serum lipids excepting HDL were found to have a significant correlation with the presence of and severity of diabetic retinopathy.

Srivastava M. Correlation of lipid levels with severity of retinopathy in patients with type 2 diabetes mellitus among residents of rural Puducherry. J Clin Sci Res 2014;3(Suppl 3): A64.

Study of serum ferritin and glycated haemoglobin in type 2 diabetes mellitus

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Background: Type 2 diabetes mellitus is a common metabolic disorder of multiple etiologies. Increased levels of serum ferritin have been indicated to be associated with the etiology of the diabetic process, as well as in pathogenesis of various diabetic complications. The study aims to understand the relationship between the serum ferritin and glycated hemoglobin in type 2 diabetes mellitus by comparing the levels of serum ferritin in patients with type 2 diabetesmellitus and healthy individuals.

Materials &methods: The study was conducted at Rajarajeswari Medical College and Hospital, Bengaluru from January 2012 to December 2012. A total of 50 cases of type2 diabetes mellitus of the age group 30 – 70 years were taken for the study after satisfying the inclusion and exclusion criteria. Fifty healthy volunteers in the age group 30 – 70 years during the same period were included in the study under the control group. All patients were evaluated in detail and serum ferritin level was estimated by microplateimmuno enzyme metric assay and glycated hemoglobin (HbA1C) by particle enhanced immunoturbidimetric test.

Result: Serum ferritin level wassignificantly high in cases compared to controls. There was moderate correlation between serum ferritin and glycated hemoglobin.

Conclusion: This study explores the possibility of finding serum ferritin as a marker to explain the oxidative stress process in type 2 diabetes mellitus. This valuable information would be helpful in proper medical intervention.

Manjula KS, Shetty HV, Krishna MN. Study of serum ferritin and glycated haemoglobin in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3): A65.

Abstracts of Platform Presentations (AMBICON – 2014)

Adiponectin levels in first-degree relatives of type 2 diabetics: association with insulin resistance, oxidative stress and low-grade inflammation

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Background and Objectives: Type 2 Diabetes is a complex metabolic diseasecaused by aninterplay between various environmental andgeneticfactors.Variousfactorssuch as oxidative stress, glucolipotoxicity, low-gradeinflammationand endoplasmic reticulum stresshavebeenimplicated in theaetiogenesis of â-cell failure. In thisstudy, weexploredthevarious pathogenic processes that lead to thedevelopment of type 2 diabetes amongst lean normoglycemic first-degree relatives of type 2 diabetics.

Materials and Methods: 35 lean normoglycemic first-degree relatives of type 2 diabetics and 35 age, sex and BMI-matched controls were included in this cross-sectional study. Body fat percentage was measured using bioelectric impedance analysis. Blood glucose, insulin, adiponectin, C-reactive protein, interleukin-6, tumor necrosis factor-α, malondialdehyde and total antioxidant status was evaluated in all study subjects.

Results: First-degree relatives of type 2 diabetics had significantly more body fat than controls. They also significantly lower levels of adiponectin and higher levels of insulin, oxidative stress and low-grade inflammation as compared to controls. Adiponectin levels showed significant negative correlation with insulin and C-reactive protein.

Conclusion: Our results indicate first-degree relatives of type 2 diabetics have significantly increased levels of insulin, oxidative stress and low-grade inflammation and decreased levels of plasma adiponectin. This may be a reflection of the increased lifetime risk of diabetes seen in them.

Nandeesha H, Sharma V K, Kumar S S, Joseph M. Adiponectin levels in first-degree relatives of type 2 diabetics: association with insulin resistance, oxidative stress and low-grade inflammation. J Clin Sci Res 2014;3(Suppl 3): A66.

Oxidative stress and antioxidant levels in patients developing Anti-tubercular treatment (ATT) induced hepatitis

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Objective: To compare the oxidative stress level and antioxidant status in patients on Category I & II ATT developing hepatotoxicity and those on the same regimen not developing it.

Material and methods: 30 patients on ATT developing hepatotoxicity were considered as subjects for the study. The oxidative stress level marker, malondialdehyde and Antioxidants Glutathione peroxidase, superoxide dismutase, vitamin C were estimated and compared with same age and sex matched controls, after eliminating the history of confounding factors like Acute alcoholic hepatitis, Acute viral hepatitis, cirrhosis of liver before start of the study.

Results: Hepatotoxicity due to Category I & II ATT were found both amongst male and females. Clinical symptoms ranged from early satiety, nausea to frank jaundice, and biochemically shown many fold rise in Liver enzymes with incidence of alanine transaminase (ALT) more than that of Aspartate Transaminase (AST). The results showed a significant increase ($p<0.05$) in the level of oxidative stress and reduced ($p<0.05$) level of antioxidants which may be accounted for the molecular mechanism of hepatotoxicity.

Conclusion: Antitubercular regimen has its own domain of deleterious effect on normal body functions of which liver is hampered most. There are studies suggesting a role of free radicals in development of this hepatotoxicity.ATT induced liver damage was found considerably amongst the patients on treatment. It leads to rise of liver enzymes ALT in most of the cases. Hepatotoxicity due to ATT may be attributed due to imbalance of oxidants and antioxidants leading to free radical mediated damage to liver.

Basu I, Ingale P, Awad NT, Raul N. Oxidative stress and antioxidant levels in patients developing Anti tubercular treatment (ATT) induced hepatitis. J Clin Sci Res 2014;3(Suppl 3): A67.

Abstracts of Platform Presentations (AMBICON – 2014)

Serum copper, zinc and insulin status between untreated patients with pulmonary tuberculosis versus matched controls

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Objectives: To estimate serum zinc (Zn), copper (Cu) and insulin levels in untreated pulmonary tuberculosis patients. To compare serum copper (Cu), zinc (Zn) and insulin levels in both untreated adult pulmonary tuberculosis patients with age and sex matched controls.

Materials and methods: The study included 50 untreated patients of pulmonary tuberculosis, selected from OPD patients in the Dept. of Pulmonary Medicine of Assam Medical College and Hospital, Dibrugarh. clinical diagnosis was based on as per RNTCP guidelines. Estimation of the serum Zinc and Copper by Colorimetric method and Insulin by Radioimmunoassay was done. Estimation of FBS was done by GOD-POD, total protein by Biuret and albumin by Bromocresolgreen methods.

Results: There was an significant increase in serum copper and copper/zinc ratio in tubercular patients when compared with healthy controls ($p<0.01$). Serum zinc was found to be decreased in tubercular patients than controls ($p<0.01$).However no significant difference was noticed in plasma insulin levels when compared patients with control. A significant positive correlation of copper and negative correlation of zinc to Cu/Zn ratio was found ($p<0.05$).

Conclusion: The early and effective diagnosis of TB is influenced by increased serum copper, Cu/Zn ratio and decreased level of serum zinc. So estimation of serum copper and zinc can be of good help in early diagnosis and hence decreases the mortality and morbidity associated; by early and prompt treatment.

Chanda S, Bhattacharyya K. Serum copper, zinc and insulin status between untreated patients with pulmonary tuberculosis versus matched control. J Clin Sci Res 2014;3(Suppl 3): A68.

Study of various biochemical parameters in Chandipura related viral encephalitis

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Intoduction: Chandipura (CHP) virus, an rhobdovirus is transmitted to human by sandflies. Objective of our study was to perform biochemical LFT and RFT. 2) To test IgM antibodies against CHP virus and RT PCR for confirmation of chandipura virus. 3) To compare the LFT and RFT in Chandipur positive and negative patients.

Material and methods: 30 cases of clinically diagnosed as Chandipura related acute viral encephalitis admitted till 8/10/2014 were included. Serum LFT,RFT were analyzed. Serum samples were sent to National Institute of Virology (NIV), Pune for IgM antibodies against CHP virus and RT PCR. Comparison of the LFT and RFT done in two groups; Group 1: IgM antibodies against CHP virus and RT PCR found positive and Group 2: IgM antibodies against CHP virus and RT PCR found negative with symptoms related to viral encephalitis

Results: Out of the total 30 cases included in study, 8 cases were IgM antibodies against CHP virus and RT PCR positive(Group 1) and other 22 cases were IgM antibodies against CHP virus and RT PCR negative(Group 2).Mortality rate in Group 1 was 88% (7 died out of 8) and in group 2 was 73% (16 died out of 22). The results of LFT and RFT (Mean±SD) in 2 groups are as follows:

Parameter	Urea	Creatinine	SGPT	SGOT	ALP
Group 1(n=8)	84.5± 50.7	2.2±1.78	1072 ±1658	1149±2277	192±70.9
Group2(n=22)	62.1± 50.7	1.56± 0.78	452±1235	222 ± 423	132.2 ±144.8
P value	p≥0.05	p>0.05	p>0.05	p>0.05	p>0.05

Conclusions: 1) Acute viral encephalitis is associated with high mortality. 2) LFT and RFT were deranged in all patients of acute viral encephalitis irrespective of etiological agent. 3) High mortality associated with Chandipura related acute viral encephalitis can be attributed to hepatic and renal failure in these cases.

Gajjar M, Ayeir S, Mehta M, Jain S. Study of various biochemical parameters in Chandipura related viral encephalitis. J Clin Sci Res 2014;3(Suppl 3): A69.

Abstracts of Platform Presentations (AMBICON – 2014)

Utility of procalcitonin in the evaluation of sepsis

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Objective: Sepsis, which is one of the important causes of mortality in critically ill patients, can be prevented by early diagnosis and treatment. The aim of this study was to evaluate the clinical utility of serum Procalcitonin (PCT) as a marker of sepsis over other conventional markers.

Material and methods: The study was carried out at Amrita Institute of Medical Sciences and Research Center involving 76 patients. PCT levels were estimated by electrochemiluminisence in Roche Cobas E411 and hsCRP by the immunoturibidimetry in Beckman Coulter AU 2700. Blood culture results were obtained from the Dept of Microbiology. Serum concentrations of PCT and hsCRP in septic and non septic groups were compared using Mann- Whitney test and the areas under the curve using Receiver Operator Charectoristics curve (ROC). Positive culture results of both groups were compared using Chi-Square test. p value <0.05 was considered statistically significant.

Results: Median PCT and hsCRP of the sepsis group was 1.2ng/ml (IQR#=5.806ng/ml) and 48.20mg/L (IQR= 161.8) and non sepsis group was 0.21ng/ml (IQR= 0.17ng/ml) and 7.6mg/L (IQR= 45.1mg/L) respectively and statistically significant. Culture positivity in sepsis and non sepsis patients were 54.7% and 33.3% respectively; but no statistical significance (p=0.297). The area under ROC curve was high for PCT than hsCRP (0.798; 95% CI, 0.694-0.902; p=0.002) and 0.723 (95% CI, 0.579-0.868;p=0.02). The sensitivity and specificity of PCT and hsCRP were 71.9%, 72.7% (cutoff- 0.282ng/ml) and 57.9%, 54.5% respectively (cutoff-26.035mg/L).

Conclusion: PCT shows better prediction for sepsis when compared to hsCRP and hence a better marker of sepsis.

Unni CSN, Sajitha Krishnan PP, Subhakumari KN, Sheejamol VS. Utility of procalcitonin in the evaluation of sepsis. J Clin Sci Res 2014;3(Suppl 3): A70.

Serum prolactin in rheumatoid arthritis

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Objectives: The role of prolactin in autoimmune diseases and use of anti prolactin drugs in disease remission has been described and investigated in several studies. The role of anti- prolactin drugs in remission of disease activity has been investigated. The present study was carried out to correlate serum Prolactin levels with disease severity in recently diagnosed Rheumatoid Arthritis patients.

Materials and Methods:A case-control study was carried out in 55 recently diagnosed untreated Rheumatoid factor positive & RF negative Rheumatoid Arthritis patients and 27 age and sex matched apparently healthy individuals. The diagnosis of RA was made using ACR criteria 2010. Serum Prolactin(ELISA) , RF (Latex agglutination method), Serum anti CCP (ELISA), TSH(ELISA),ESR(Westergrens method),Serum urea &creatinine were assayed. Disease severity was assessed by DAS(28) formula. Statistical evaluation was done by independent t-test.

Results: Serum prolactin levels in RA patients was significantly higher (33.53±17.9 ng/mL) compoared to controls (14.4±5.9) with p value of Â 0.001. A fair correlation was found between disease activity and serum prolactin levels (r = 0.345 ; p = 0.01).

Conclusion: Elevated levels of serum prolactin indicate the immunomodulatory role of PRL and its relationship to diseases activity. Use of anti prolactin drugs may be of use in patients with hyperprolactinemia.

Karthiga M , Karpaghavalli VG, Ramadesikan VK, Ramadevi K. Serum prolactin in rheumatoid arthritis. J Clin Sci Res 2014;3(Suppl 3): A71.

Abstracts of Platform Presentations (AMBICON – 2014)

Role of hepatic markers in predicting outcome in critically ill systemic inflammatory response syndrome patients

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Objective: To find a simple, inexpensive, accurate diagnostic tool comprising of hepatic markers in predicting mortality outcome among critically ill Systemic Inflammatory Response Syndrome (SIRS) patients on par with the APACHE II scoring system.

Material and methods: Cross-sectional study comprising of 80 clinically confirmed SIRS patients of which 11 patients were excluded. Relevant investigations were done for selected patients and were followed up to death or discharge for a maximum of 28 days.

Results: 17% patients died in ICU. Correlation analyses of hepatic markers with mortality and APACHE II have revealed a significant positive association for ALT, AST and PT-INR with statistically significant differences among survivors and non survivors. For the entire population of patients, ROC curve for mortality had revealed AUC highest for APACHE II (0.879) followed by INR (0.800), AST (0.799) and ALT (0.756). Specific cut-off values for each parameter were calculated and combined to form new ROC curve which had an AUC of 0.748 for combined predictors with a high specificity of 91.2% for predicting mortality. The overall predictive accuracy of the first day combined predictor was such that, within 24 h of ICU admission, 86% of ICU admissions could be given a risk estimate for hospital death. Regression analysis had revealed no significant confounding effect on combined predictor due to age, sex, diabetes, hypertension, smoking and alcohol.

Conclusion: Combined hepatic and renal predictors can be used for outcome prediction among critically ill SIRS patients.

Srivatsan R, Asmathulla S, Girija S. Role of hepatic markers in predicting outcome in critically ill systemic inflammatory response syndrome patients J Clin Sci Res 2014;3(Suppl 3): A72.

Serum adenosine deaminase activity as inflammatory marker in patients with rheumatoid arthritis

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Introduction: Rheumatoid arthritis (RA) is a chronic inflammatory joint disease. C-reactive protein (CRP), is used as an indicator of inflammation in RA. Adenosine deaminase (ADA), an enzyme catalyzing irreversible deamination of adenosine is a marker of cell mediated immunity. Increased ADA activity is also found in inflammation.

Aim and objectives: Evaluation of ADA as a marker of inflammation in RA by comparing with hsCRP, an established inflammatory marker.

Material and methods: Two groups of 46 each (group-I: patients diagnosed with RA; group-II: age and sex matched healthy controls) were included. hsCRP and ADA activity were measured in serum by Immunotrubidometry and end point colorimetry respectively. Statistical analysis was done using Medcalc version 11.5.

Results: ADA and hsCRP levels were higher ($p < 0.001$) in patients with RA compared to controls. Significant positive correlation was observed between ADA and hsCRP ($r = 0.316$, $p = 0.032$) in RA patients. ROC analysis showed significant AUC for ADA (0.776, $p = <0.0001$), comparable to hsCRP (0.726, $p =0.0001$). Comparison of ROC curves showed no significant difference between the diagnostic capabilities of hsCRP and ADA ($p=0.4766$).

Conclusion: The simplicity of measuring ADA activity combined with its cost effectiveness provides an advantage to consider ADA as a marker of inflammation in Rheumatoid Arthritis.

Manda P, Kiranmayi VS, Suchitra MM, Bitla AR, Siddhartha Kumar B, Mohan A, Srinivasa Rao PVLN. Serum adenosine deaminase activity as inflammatory marker in patients with rheumatoid arthritis. J Clin Sci Res 2014;3(Suppl 3): A73.

Abstracts of Platform Presentations (AMBICON – 2014)

Serum lipid profile and zinc status in rheumatoid arthritis – a hospital based case control study

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Objective: To study the serum lipid profile and zinc status in patients with rheumatoid arthritis (RA) and any association thereof.

Material and methods: Study group comprising of 50 cases and 50 age and sex matched healthy controls were taken. Fasting lipid profile (Total cholesterol, HDL-C, LDL-C, and Triglyceride) and serum zinc concentration were estimated in semiautoanalyser using specific kits.

Results: Serum total cholesterol (TC) and HDL-C were significantly lower in cases than controls ($p<0.05$ and $p<0.01$ respectively). Patients with active disease had significantly lower level of TC and HDL-C than those in remission.Triglyceride levels was significantly higher in cases than controls ($p<0.05$). Serum zinc level was significantly decreased in cases than controls ($p<0.01$).

Conclusion: Our study reveals that the lipid profile is altered in Rheumatoid arthritis characterised by low TC, HDL and elevated triglycerides. Serum zinc level is also decreased, thus indicating two different independent risk factors associated with the disease state.

RA is associated with cardiovascular morbidity and mortality. Dyslipidemia is a known risk factor for cardiovascular disease. Zinc deficiency may potentiate the cytokine mediated inflammatory response and endothelial cell dysfunction. Inflammation in RA is likely to alter the lipid profile and zinc status. Hence monitoring of the lipid and zinc levels may be beneficial in minimising and preventing long term cardiovascular complications by suitable modification of therapy.

Yadav S, Goswami RK, Kakati S. Serum lipid profile and zinc status in rheumatoid arthritis – a hospital based case control study. J Clin Sci Res 2014;3(Suppl 3): A74.

Serum protein bound sialic acid as a useful marker for alcoholic liver disease along with amylase and calcium/phoshorous

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Objective: Alcoholic liver disease is the most commonly occurring problem all over the world.The main aim of the study is to evaluate the protein bound sialic acid along with amylase and calcium/phosphorous in alcoholic liver disease and to assess the utility of these parameter as diagnostic and prognostic indicators of liver function.

Aim: Comparative Assessment of diagnostic accuracy of Serum protein bound sialic acid and several conventional biomarkers Amylase and Calcium/Phosphorous in Alcoholic liver disease

Material and methods:A total of 30 clinicaly and ultrasonically confirmed cases of Alcoholic liver disease were enrolled for studyand were matched with 30 healthy controls.Total duration of study was two years.Sialic acid was determined by Aminoff's method.Amylase and calcium/phosphorous was determined by autoanalyser.

Results: The mean value of protein bound sialic for cases was 6.3±0.17 mg/L and for control was 5.8±0.08mg/L ($p < 0.001$) .Similarly mean value for Amylase cases was 114±14U/L and for control was 51±2.2U/L ($p<0.001$). Mean for calcium/phosphorous cases were 7.7±.72 / 3.3±.11mg/dl and control was 9.1±.08/ 3.4±.10 mg/dl.

Conclusion: This study shows serum protein bound sialic acid and amylase levels were significantly elevated in alcoholic liver disease patients.Serum calcium shows significant correlation but no correlation was found with phosphorous. Serum protein bound sialic acid was potentially useful markers and can be used for diagnosis and monitoring of alcoholic groups, along with serum amylase and serum calcium/phosphorous.

Malik K, Chugh K, Singh V, Gupta G, Kumari A. Serum protein bound sialic acid as a useful marker for alcoholic liver disease along with amylase and calcium/phoshorous. J Clin Sci Res 2014;3(Suppl 3): A75.

Abstracts of Platform Presentations (AMBICON – 2014)

Serum gamma-glutamyl transferase as an oxidative stress marker in non-alcoholic fatty liver disease (NAFLD)

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Objectives: NAFLD characterized by elevated Alanine amino transferase (ALT) and GGT is a consequence of hepatic expression of insulin resistance (IR). IR and oxidative stress are involved in the pathogenesis of NAFLD which has a risk of progression to advanced fibrosis. The current study is undertaken to assess the role of serum GGT levels as an early marker of oxidative stress in Type 2 DM with NAFLD. We also aim to study and compare other liver enzymes AST, ALT, AST/ALT ratio between Type 2 DM with NAFLD and normal healthy individuals.

Material and methods: Fifty Type 2 DM patients with ultrasound diagnosed NAFLD between 30-70 years and fifty age and sex matched healthy individuals attending medicine OPD at RRMCH were taken as cases and controls respectively. Serum GGT, AST, ALT was estimated by IFCC method on ERBA EM 360 auto analyser.

Results: The mean ± SD of serum GGT was 36.64 ± 24.82mg/dl in cases and 16.06 ± 7.786 mg/dl in controls. The mean ± SD of serum ALT level was 44.06± 25.93mg/dl in cases and 21.14 ± 8.30 mg/dl in controls.The mean ± SD of serum AST in cases was 40.56 ± 36.87 mg/dl and in controls was 20.54 ± 6.63 mg/dl. The mean ± SD of serum AST to ALT ratio levels in cases was 0.884 ± 0.275 mg/dl and in controls was 1.06 ± 0.417 mg/dl.There was a significant increase in GGT, ALT, AST ($p<0.0001$) and decrease in AST /ALT in cases as compared to controls ($p<0.01$).

Conclusions: In our study we found significant increase in the levels of GGT, ALT, AST and decrease in AST/ALT ratio in cases compared to controls. We conclude that GGT is a useful oxidative stress marker in patients with NAFLD.

Deepa M, Priyadarshini KS, Mamatha V. Serum gamma-glutamyl transferase as an oxidative stress marker in non alcoholic fatty liver disease (NAFLD). J Clin Sci Res 2014;3(Suppl 3): A76.

Adiponectin: a newer marker of inflammation in COPD

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Objective: The study was undertaken to estimate the levels of Adiponectin in patients with COPD during acute exacerbation (AECOPD) and at stable stage of the disease. The study also investigated the role of adiponectin as a marker of inflammation in the pathogenesis of COPD.

Material and methods: 60 patients of COPD were diagnosed according to the GOLD criteria forms the study group, which includes 30 males admitted with AECOPD and 30 males with stable COPD. The study groups were compared with 20 healthy age and sex matched controls. Adiponectin was measured by commercially available ELISA kits. Pulmonary function tests were performed in all cases and controls using standardized protocols on SPIROLAB III. Statistical analysis was done using student's t test and Pearson's correlation coefficient.

Result: Levels of adiponectin were found to be significantly higher in the study group when compared with controls ($p<0.001$). The levels were also found to be significantly higher in patients with AECOPD as compared to patients with stable disease (12.73±2.12 ng/ml, 8.68±2.71 ng/ml respectively). A significant inverse relationship was found between the levels of adiponectin and FEV1%.

Conclusion: The study indicates that adiponectin is associated with the inflammatory process of COPD as suggested by its significant inverse relationship with the marker of lung function ie, FEV1%. It can thus, be used as a marker of disease severity in COPD.

Jaswal S, Saini V, Kaur J, Kaur H, Seema. Adiponectin: A newer marker of inflammation in COPD. J Clin Sci Res 2014;3(Suppl 3): A77.

Abstracts of Platform Presentations (AMBICON – 2014)

Cut-off values of surrogate measures of insulin resistance for metabolic syndrome in Indian non-diabeti adults

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Objectives: Thisstudy was carried out to determine the cutoff values of surrogate measures of insulin resistance for diagnosing metabolic syndrome in Indian adults andto study the importance of fasting serum insulin, HOMA-IR and QUICKI as a diagnostic test for insulin resistance in Indian non-diabetic adults.

Material and methods: The data from156non-diabetic individuals (78 Men and 78 women) aged 30-60 years were analyzed.We determined the odds ratios for the prevalence of metabolic syndrome according to the quartiles of fasting insulin, homeostasis model for insulin resistance (HOMA-IR) and Quantitative insulin sensitivity check index (QUICKI) as independent variables, while adjusting for age, sex and body mass index. The cutoff values of fasting insulin, HOMA-IR and QUICKI were estimated by the areas under the receiver-operating characteristic (ROC) curves.

Results: The cut-off values for defining insulin resistanceas determined by the ROC analysis were:17µU/ mL for fasting insulin(sensitivity-74.6%; specificity-68.8%), 3.06 for HOMA-IR (sensitivity-62.4%; specificity-75.2%), and 0.32 for QUICKI (sensitivity-64.8%; specificity-78.2%), Linear regression analysis showed a significant linear relationship between HOMA-IR and the following parameters: waist circumference, BMI,serum triglycerides, TG/HDLc ratio and fasting insulin ($p<0.001$).

Conclusions: Fasting insulin, HOMA-IR and QUICKI can be used as surrogate measures of insulin resistance in Indian non-diabetic adults.In the absence of a standardized insulin assay, we suggest that the most practical approach to identify overweight individuals who are insulin resistant is to use the cut-off values for either triglyceride concentration or the TG/HDLc ratio.

Sreenivasa Murthy MD, Tembad MM, Jayaprakash Murthy DS. Cut-off values of surrogate measures of insulin resistance for metabolic syndrome in Indian non-diabetic Adults. J Clin Sci Res 2014;3(Suppl 3): A78.

Serum cystatin C: biomarker for metabolic syndrome

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Objective: Cystatin C is a newer marker of coronary heart disease (CVD). In this study we retrospectively investigated whether serum levels of cystatin C has relation with metabolic syndrome. Studies have shown that both serum cystatin C and metabolic syndrome are associated with inflammatory process.

Material and methods: Metabolic Syndrome was defined according to the NCEP-ATP-III guidelines. We investigated whether Cystatin C concentration is associated with the metabolic syndrome and with other cardiovascular risk factors like hypertension and obesity. This case control study was conducted at Government Medical College, Aurangabad (MH) in 200 elderly individuals (age group 40-60yrs), including 120 patients with Metabolic Syndrome and 80 healthy age matched individuals (control group). Waist circumference,Waist–hip ratio, body mass index (BMI), fasting plasma glucose (FPG), Serum uric acid, total cholesterol, low-density lipoprotein cholesterol (LDL-C), triglycerides (TG), high-density lipoprotein (HDL-C), systolic (SBP) and diastolic blood pressure (DBP), andSerum Cystatin C were measured and their mutual relations were analysed.

Results: Cystatin C concentration was measured by PETIA (Particle enhanced Immunoturbidometric Assay). Cystatin C was significantly higher in patients with the metabolic syndrome than in those without ($P <$ .0001). Pearson partial correlation analysis showed a significant correlation between cystatin C and body mass index; waist circumference; triglycerides ; uric acid; age; and glomerular filtration rate (GFR). Serum cystatin C concentration was positively related with blood pressure, not related to LDL-C levels, and negatively correlated with HDL-C levels.

Conclusion: Cystatin C was significantly associated with Metabolic Syndrome in the elderly coronary artery disease.These findings suggest that cystatin C may adversely affect metabolic factors, particularly abdominal obesity, thus contributing to development of the Metabolic Syndrome. Our study results may help to explain the link between cystatin C and development of CVD.

Pagdhune AR, Hardas VM, Thorat AP. Serum cystatin C: biomarker for metabolic syndrome. J Clin Sci Res 2014;3(Suppl 3): A79.

Abstracts of Platform Presentations (AMBICON – 2014)

A prospective study on insulin status and anthropometric measurements in medical students of S.V.Medical college

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Objective: A prospective study on fasting Insulin levels and its correlation with selected anthropometric measurements in 1st year M.B.B.S students of S.V.Medical College.

Materials and methods: Fasting blood sample was collected after measuring their weight (kgs), Height(cms) and waist and hip circumference (cms) from 150 students after getting a written informed consent. Serum insulin was estimated by radioimmunoassay in a gamma counter (ECIL).The results were tabulated and analysed using linear regression and correlation with SPSS software version 16.0.

Result: The mean insulin level (n=150) was 11.25µIU/ml. There was a positive correlation between serum insulin levels and Body mass index(BMI) (r value-0.68) (p value <0.01), serum insulin and waistcircumference (r value- 0.73) (p value <0.01), serum insulin and waist-hip ratio (r value-0.63) (p value <0.01).

Conclusion: This study shows that there is strong evidence that with increasing BMI, waist circumference and waist-hip ratio, there is a significant increase in serum insulin levels, indicating insulin resistance, which is an early risk factor for metabolic syndrome. Screening, especially in adolescents, is needed to implement early lifestyle changes to decrease the risk of developing metabolic syndrome.

Gurupavankumar G, Madhavi K, Divya D, Prabhakar Rao P. A prospective study on insulin status and anthropometric measurements in medical students of S.V.Medical College. J Clin Sci Res 2014;3(Suppl 3): A80.

A comparative study of lipid profile, atherogenic index and Vitamin C levels is newly diagnosed patients with psoriasis

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Objectives: Psoriasis is a common, chronic and recurrent inflammatory skin disorder that has been associated with dyslipidemia and high risk of cardiovascular events. Atherogenic Index of Plasma (AIP) is an easily available predictor and determinant of cardiovascular risk in Psoriasis and it is less susceptible to disease activity. Vitamin C has demonstrated a protective role against Reactive oxygen species mediated Ultraviolet injury, an exacerbating factor in Psoriasis. In this study we have estimated serum lipid profile, atherogenic index and vitamin C levels in newly diagnosed Psoriasis.

Materials and methods: The study was conducted at Sri Venkateswara Medical College, Tirupati, 40 newly diagnosed Psoriasis patients with age group of 30-60 years were considered as cases. 40 healthy subjects of comparable age and sex were chosen as controls. Blood samples were collected and serum lipid profile was estimated by enzymatic kit methods. Serum vitamin C assay was done by 2, 4-Dinitrophenyl hydrazine method. Atherogenic index of plasma (AIP) was calculated by formula AIP = log triglycerides/high density lipoprotein.

Results: Serum total cholesterol, total triglycerides, low density lipoprotein, very low density lipoprotein, atherogenic index of plasma were significantly higher ($p < 0.001$) in Psoriasis patients when compared with controls. Psoriasis patients showed significantly lower serum ascorbic acid levels than controls ($p < 0.001$).

Conclusion: Psoriasis patients even in the early stages must be considered as a high risk group for cardiovascular disease as it is associated with abnormalities in lipid profile, increased oxidative stress and decreased levels of antioxidants.

Sangamithra M, Madhavi K. A comparative study of lipid profile, atherogenic index and vitamin C levels is newly diagnosed patients with psoriasis. J Clin Sci Res 2014;3(Supl 3): A81.

Abstracts of Platform Presentations (AMBICON – 2014)

A study of serum lipid profile and serum zinc concentration in clinically diagnosed cases of depression

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Objective: To study the serum lipid profile and zinc concentration in cases of depression and their differences in different age groups and gender.

Material and methods: A total of 50 cases of depression and 50 age sex matched healthy controls were taken in the study and serum lipid profile, zinc , total protein and albumin were estimated in semiautomated analyser.

Results: Serum total cholesterol (TC), HDL and zinc were significantly lower in the cases ($p<0.05$). Significant decreased levels of Serum HDL ($p<0.01$) and Zinc ($p<0.001$) were found in cases. Serum zinc and LDL were significantly lower in the age group 26-30 years whereas, low level of zinc ($p<0.05$) was found in 46-50 years. In moderate depression, TC ($p<0.0001$), LDL ($p<0.01$) and zinc ($p<0.05$) were significantly lower than the controls. In severe cases TC, LDL and HDL were significantly ($p<0.05$) lower. Serum TC and LDL were found to have a strong negative correlation with Hamilton score and was statistically highly significant ($p<0.0001$). Inter group comparison of depression cases showed significantly ($p<0.0001$) lower values of TC and LDL.Total protein and albumin were lower in cases compared to the controls but not significant ($p>0.05$)

Conclusion: Depression is associated with lower levels of serum lipids and serum zinc. TC and LDL can be considered as important predictors of the severity of the disease.

Baruah J, Teli AB, Goswami HK. A study of serum lipid profile and serum zinc concentration in clinically diagnosed cases of depression. J Clin Sci Res 2014;3(Suppl 3): A82.

Altered prolactin and thyroid hormone levels in drug free schizophrenia. Are they linked with suicidal risk and disease severity?

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Objectives: Hormonal deregulation is known to be involved in the pathophysiology of schizophrenia. Thyroid hormones and prolactin are reported to be associated with suicidal risk in various psychiatric disorders. The present study was designed to evaluate thyroid hormones and prolactin levels in patients with schizophrenia and to correlate it with the severity of the disease, as well as with the suicide risk.

Material and methods: 36 schizophrenia cases and 36 apparently healthy controls were included in the study. Thyroid hormones and prolactin were estimated in both the groups.

Results: Free T3, Free T4 and prolactin were significantly increased in schizophrenia cases when compared with controls. Prolactin was positively correlated with free T3 ($r = 0.511$, $p = 0.001$), positive ($r = 0.353$, $p = 0.035$) and negative syndrome score ($r = 0.383$, $p = 0.021$) in schizophrenia cases.

Conclusion: we conclude that thyroid hormones and prolactin are increased in drug naïve schizophrenia cases and their association with positive and negative syndrome score indicates that these hormones are involved in the severity of the disease.

Nandeesha H, Jose J, Kattimani S, Kavitha M, Devanarayanan S. Altered prolactin and thyroid hormone levels in drug free schizophrenia. Are they linked with suicidal risk and disease severity? J Clin Sci Res 2014;3(Suppl 3): A83.

Abstracts of Platform Presentations (AMBICON – 2014)

Profile of umbilical cord blood TSH, T4 and influence of gestational age on thyroid function in newborn

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introduction: Congenital Hypothyroidism, if not treated well in time, may be disastrous for growth and development of child, therefore early detection of congenital hypothyroidism is important, either by TSH or T4, or both by newborn screening. Influence of several perinatal factors has to be considered while interpreting values of thyroid functions in newborns. The present study is to determine Umbilical cord blood TSH and T4 profile in Newborns and to study influence of gestational age on Umbilical cord blood TSH and T4.

Methods: Umbilical cord blood samples were collected for assessment of TSH and T4 in 90 newborns. The influence of perinatal factors such as gestational age, birth weight, sex, on the newborns TSH, T4 was analyzed.

Results: Instat statistical software is used to analyze data**.** Mean TSH level between Pre term (7.4±6.17) and Term (8.529±4.689) was statistically significant with p value of <0.0352. Mean T4 level, when compared in babies with low birth weight (7.706±1.373) and normal birth weight (9.18±3442) was also statistically significant with p value 0.0334.

Conclusion: Perinatal factors (gestational age, birth weight) have influence over values of Cord blood TSH and T4 levels and a caution in their interpretation should be considered.

Sahithya CS, Jayaram S, Meera S. Profile of umbilical cord blood TSH, T4 and influence of gestational age on thyroid function in newborn. J Clin Sci Res 2014;3(Suppl 3): A84.

Evaluation of selected biochemical parameters in post mortem vitreous fluid: scope for the future in thanatochemistry

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Objectives: 1)To estimate Electrolytes (Na, KCl), Urea,Uric acid and creatinine levels in post mortem Vitreous humor sample. 2) To Correlate vitreous potassium levels with post mortem interval. 3)To evaluate the importance of these parameters in thanatochemistry.

Materials and methods: The study samples included 30 postmortem vitreous samples collected from Road traffic accident cases from Forensic Medicine Department of Mysore Medical College and research institute (MMC&RI,Mysore).Vitreous samples were analysed for ,Electrolytes(Na ,K,Cl), Urea,Creatinine and Uric acid levels using fully automated biochemistry analyzer.

Results: There was no statistically significant changes in mean K+ values of Right (8.2$\pm$1.26) and Left (8.25$\pm$1.19) vitreous samples. Mean K+ values showed statistically significant linearly increased values with post mortem interval.(0-6 hrs – 6.325$\pm$0.43), 6-12 hrs–(8.03$\pm$0.44), >12 hrs (9.26$\pm$0.416), Na+(146.88$\pm$9.03), Cl-(121.75$\pm$9.74), Urea (48.66$\pm$36.5), Uric acid ((1.94$\pm$0.49), and Creatinine levels were (0.65$\pm$0.26) .These values almost reflected their Serum concentrationsand were similar to the Normal Vitreous humour values as given in literature.

Conclusion: Vitreous humor is a unique body fluid, unique in its anatomic location and stability which reflects serum concentrations of many elements in the immediate pre-mortem period. Vitreous K+ values can predict post mortem interval satisfactorily.It is easily retrievable and simple to analyze. Tremendous, Unexplored potential for various professional streams is present in this field of thanatochemistry.

Jagannath S, Jayaram S, Meera S, Muruga. Evaluation of selected biochemical parameters in post mortem vitreous fluid: Scope for the future in thanatochemistry. J Clin Sci Res 2014;3(Suppl 3): A85.

Abstracts of Platform Presentations (AMBICON – 2014)

Role of IL-6 in the causation of meningocoele

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Objective: To identify the role of IL-6 in the causation of meningocele,by separately measuring the levels of IL-6 in neonates with meningocele and age, sex matched normal neonates.

Material and methods: This case–control study included 40 participants: 20 newborns with the congenital anomaly i.e. meningocele and 20 healthy newborns. The level of IL-6 was determined by the Human IL-6 High Sensitivity ELISA Kit (instructions are followed as given in the kit instruction booklet).

Results: The level of IL-6 was found to be much higher in the patients with meningocele as compared to the normal healthy neonates (p value <0.0001).

Conclusions: Interleukin6 (IL-6) act as a pro-inflammatory cytokine, being secreted by T cells and macrophages. High level of IL-6 in neonates with meningocele shows that a probable cause of this disorder may be inflammation.

Mukhopadhyay B, Gongopadhyay AN, Rani A, Gavel R, Mishra SP. Role of IL-6 in the causation of meningocoele. J Clin Sci Res 2014;3(Suppl 3): A86.

Biochemical changes and fatigueness in albino rats after oral and intraperitoneal admission of ATP

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Objectives: The present study was undertaken to evaluate the biochemical changes and fatiugeness in albino rats after oral and intraperitoneal administration of ATP.

Material and methods: After obtaining approval from Institutional animal ethics committee, Swiss albino rats of either gender weighing between 200 to 300 gm were taken. Animals were grouped randomly divided into three groups consisting 6 in each. Gp-I control group- will be receiving distilled water, Gp-II test- ATP orally at the dose of 60mg/kg body wt orally and Gp-III- test ATP intraperitoneal at the dose of 60mg/kg body wt for 10 days.

On 10th day of experiment, all animals were evaluated for extent of physical fatigue by using exhaustive swimming test. The improvement of exercise endurance is an important indicator of anti-fatigue enhancement activity. Then each animal's blood sample was be collected and biochemical parameters blood sugar, urea, LFT, KFTwere measured and results will be compared.

Results: There was a significant ($p<0.05$)increase in serum uric acid in GroupIII as compared to GroupI and II and there was decreased bioavailability for oral ATP compared to intraperitoneal route.

Conclusion: By administration of ATP especially by parenteral route we may land up gout

Kashinakunti SV, Gurupadappa K, Bannale SG, Manjula R. Biochemical changes and fatigueness in albino rats after oral and intraperitoneal admission of ATP. J Clin Sci Res 2014;3(Suppl 3): A87.

Abstracts of Platform Presentations (AMBICON – 2014)

Role of lactate dehydrogenase (LDH), as a predictor of hypoxic ischaemic encephalopathy in newborns with perinatal asphyxia

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Introduction: Perinatal asphyxia is defined as "impairment of exchange of respiratory gases during the perinatal period resulting in hypoxic and/or ischemic injuries to various organs in the newborn". The major targeted organs are kidneys, heart, lungs, liver and brain.One of the main endogenous defence mechanisms of the foetus exposed to such hypoxia-ischemia is based on its ability to channelise cardiac outputto prioritized organs like thebrain, heart and adrenals, at the expense of other organs like the liver, lungs, skin and muscles leading to their cell injury thus leaking intra-cellular enzymes, some of which are easily measured. One such enzyme is lactate dehydrogenase (LDH).

Aim: To investigate whether serum LDH predicts HIE during the 12 h to 24hr period after birth.

Methodology: A comparative case control study was done where 25 term newborns admitted to NICU (Neonatal Intensive Care Unit) with perinatal asphyxia were included as cases. 25 non asphyxiated newborns were taken as controls.Serum.LDH was measured between 12 h to 24hr of birth.

Result: Levels of LDH were increased in asphyxiated newborns when compared to controls & was found that they correlated well with the severity of HIE. ($p<0.001$).

Conclusion: Based on this study increase in serum LDHvalues indicate that it is a good predictor of HIE during the first 12 h to 24h after birth. As a result estimating LDH can be of use as a potential inexpensive and safe diagnostic tool for predicting and grading of HIE in newborns infantswith perinatal asphyxia.

Swamy PN, Shailaja A, Prithviraj D, Natikar JA. Role of lactate dehydrogenase (LDH), as a predictor of hypoxic ischaemic encephalopathy in newborns with perinatal asphyxia. J Clin Sci Res 2014;3(Suppl 3): A88.

Assessment of feedback from MBBS students on the role problem based learning as a teaching tool for Biochemistry

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Objective: To understand and analyse students' perception about the application of problem based learning (PBL) as a teaching methodology for undergraduate MBBS students for teaching biochemistry.

Material and methods: A feedback form was prepared to take students' view point regarding PBL as a teaching methodology. A PBL session was scheduled and the students (n=137) were divided in a group of 12 students each. They selected their group leader. A teacher was designated for each group as a moderator. His/her role was to direct the students in the right direction without interfering or participating in the discussion. The same clinical case was given to all students as PBL, divided in parts (triggers). After the students discussed one trigger, the next trigger was then given to them for discussion. They identified learning needs i.e. the topics/terminologies etc. that were not clear to them. They were given a week to read about their learning needs. In a subsequent class they gave a presentation on their learning needs. Feedback was taken at the end of the class. The following points were evaluated: interesting, thought provoking, highly motivating, gives holistic view of the subject and useful enjoyable learning experience. The responses were graded as excellent, good, satisfactory and poor where excellent means it is helpful and poor means it is not helpful.

Results: The responses were as follows:interesting (excellent – 50.38%, good-38.35%, satisfactory-7.52% and poor-3.76%, Total responses =133), thought provoking (excellent – 48.12%, good-42.86%, satisfactory-5.26% and poor-3.76%, Total responses =133), highly motivating (excellent – 45.99%, good-35.04%, satisfactory-16.79% and poor-2.19%,Total responses =137), gives holistic view of the subject (excellent – 32.06%, good-48.09%, satisfactory-12.21% and poor-7.63%,Total responses =131) and useful enjoyable learning experience.(excellent – 43.18%, good-43.18%, satisfactory-12.12% and poor-1.52%,Total responses =132).

Conclusions: Our study suggests that the MBBS students find PBL beneficial and thus must be the part of teaching methodology in biochemistry and must be done regularly and more frequently. It must be used as a supplementary tool to the lectures.

Mehndiratta M, Garg S, Kar R, Sen S, Singh A, Puri D. Assessment of feedback from MBBS students on the role problem based learning as a teaching tool for Biochemistry. J Clin Sci Res 2014;3(Suppl 3): A89.

Abstracts of Platform Presentations (AMBICON – 2014)

Hyperinsulinaemia and acne vulgaris

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Introduction: Acne vulgaris is a pleomorphic disorder of the pilosebaceous unit. Sebum production plays a major role in the pathogenesis of acne, which is stimulated by androgens. Recent studies support the role of diet in acne.High glycaemic diet elevates the plasma insulin concentration which regulates the androgen levels.

Objective of the study: To study serum insulin level in acne vulgaris.

Material and methods: The study group involved 20 patients with acne vulgaris and 20 healthy age matched controls of age between 18yrs to 30yrs, attending the out patient department of SRM Medical College Hospital & Research Center. Fasting plasma glucose and serum insulin levels were measured by glucose oxidase - peroxidase method and ELISA method respectively. Statistical analysis was done using Students unpaired't' test.

Results: The mean level of insulin was found to be significantly elevated in patients with acne vulgaris (12.09±1.8µIU/ml) when compared with the control subjects (6.7±3.0µIU/ml) (p=0.024). Mean fasting plasma glucose level did not show any significant difference (96.80± 9.61mg/dl vs 94.63 ± 33.30 mg/dl) (p = 0.73) between the two groups.

Discussion: The study group with acne showed a comparative increase of serum insulin level with their mean level within the normal range. The patients were in the age group of 18 to 25 yrs only and they represent the urban population group consuming a high glycaemic diet. These data suggest the endocrine cascade induced by hyperinsulinaemia enhancing sebum synthesis and the development of acne.

Conclusion: Treatment of acne depends on its multifactorial causes. Hence the evaluations of the serum level of insulin and lifestyle modifications are more important in clinical practice to avoid endocrine abnormalities at an early stage.

Varalakshmi S, Vinodhini VM, Vasantha M. Hyperinsulinaemia and acne vulgaris. J Clin Sci Res 2014;3(Suppl 3): A90.

Study of volume distribution and calcium signalling in human platelets

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Objective: To study volume distribution in platelets from healthy adults and neonates and correlate with intracellular calcium flux.

Material and methods: (i) Platelets were isolated from adult human/cord blood by differential centrifugation. (ii) Calcium was mobilized into adult platelets by treatment with calcium ionophore A23187 in presence of Ca^{2+}. (iii) Platelet size distribution was analyzed using Coulter Counter Multisizer 4 and phase contrast microscopy. (iv) Following signalling parameters were studied: intracellular Ca^{2+} measurement (using Fura-2/AM by fluorescence spectrophotometry), assay of Ca^{2+}-dependent thiol protease calpain (using fluorogenic substrate *t*-butoxycarbonyl-Leu-Metchloromethylcoumarin in fluorescence microplate reader), platelet-derived microparticles (using FACSCalibur flow cytometry) and expression of cytoskeletal protein talin (by Western immunoblotting).

Results: Platelets from neonates were found have smaller size compared to their adult counterparts. When adult platelets were treated with A23187 in presence of Ca^{2+}, two cell populations (<2 µm, and between 2-4 µm) were noted. In majority of experiments the mean of second cell population was found to be higher than that in untreated resting platelets. Ionophore-treated platelets released microparticles and had increased calpain activity, associated with talin degradation. These events were inhibited by calpeptin (specific calpain inhibitor).

Conclusion: Neonatal platelets are of smaller size than adult platelets. Calcium influx causes degradation of talin by calpain activity. Breakdown of this cytoskeletal protein leads to relative swelling of cells reflected by increase in platelet volume.

Biswas K, Mallick RL, Dash D. Study of volume distribution and calcium signalling in human platelets. J Clin Sci Res 2014;3(Suppl 3): A91.

Abstracts of Platform Presentations (AMBICON – 2014)

Utility of desmoglein antibodies for monitoring disease activity in pemphigus

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Objectives: Pemphigus is a rare group of autoimmune blistering disorders of skin and mucous membranes caused by the formation of antibodies against desmoglein (Dsg). Various studies have reported conflicting associations of anti-Dsg 1 and 3 antibodies with disease activity. Hence we undertook to estimate the levels of anti-Dsg 1 and 3 antibodies in pemphigus for monitoring disease activity.

Methodology: This was a cohort involving patients with pemphigus. Disease activity was assessed using Pemphigus Disease Area Index (PDAI) at baseline, 3 and 9 months. Anti-Dsg1 and 3 titres were performed by conventional and conformational ELISA (pathogenic antibodies).

Results: There were 10 cases of mucosal pemphigus vulgaris, 8 cases of cutaneous pemphigus and 20 cases of mucocutaneous pemphigus. In mucosal pemphigus, both the antibodies were present in 2 patients and one had only anti-Dsg3 antibody. In cutaneous pemphigus, 12.5% had only anti-Dsg1 antibody while 87.5% had both the antibodies. Among patients with mucocutaneous pemphigus, 90% had both the antibodies and 10% had only anti-Dsg1. There was significant positive correlation of PDAI with anti-Dsg1, total and pathogenic anti-Dsg3 antibody titres.

24 patients attained remission, 4 patients relapsed and 6 patients failed to attain remission. Between the relapse and remission groups, there was a significant difference in anti-Dsg3 at both baseline ($p=0.01$) and at 9 months ($p<0.001$) and in anti-Dsg1 at 9 months ($p=0.04$). By ROC analysis, baseline anti-Dsg3 titres above 240.9 U/ml could predict a relapse with a likelihood ratio of 18.

Conclusion: Desmoglein antibodies are highly sensitive for the diagnosis of pemphigus. There was a good correlation between anti-Dsg titres and disease activity. There was no advantage of conformational Dsg3 ELISA.

Prabhakaran P, Chandrashekar L, Rajappa M, Rajendiran KS, Shanmugam R, Thappa DM. Utility of desmoglein antibodies for monitoring disease activity in pemphigus. J Clin Sci Res 2014;3(Suppl 3): A92.

Biochemical Markers for early detection of coronary heart disease

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Objective: Coronary heart disease (CHD) has increased prevalence in urban areas and rural areas in India during the last decade due to habit of adopting smoking. Tobacco smoking alone is currently ranked fourth in the world to contributing mortality. The increased risk of atherothrombotic vascular events seen in smokers for which one of the pathology could be due to increasedserum homocysteine and lipids, So in present study smokers with CHD and non smokers below the 40 years age group individuals were undertaken .

Material and methods: 90 men were undertaken for study of below 40 years age group, 45 were smoking with CHD who are considered as experimental group and remaining 45 were taken as controls. Serum of experimental and control group was estimated for homocysteine, lipid profile also other routine investigations were done.

Results: Study indicates a significant rise in serum homocysteine in smokers with CHD as compared to the non smokers. There was no significant change in lipid profile in smokers as compared with non smokers. Study indicates a significant (p-value=0.04) rise in serum homocysteine in smokers with CHD as compared to the non smokers. Total cholesterol (p value=0.95), HDL (p value=0.78) and triglycerides (p value=0.56) has no significance.

Conclusion: Tobacco smoking interferes with synthesis of Pyridoxal Phosphate decreased PLP concentration in serum causing disturbance in methionine metabolism lead to increased serum homocysteine levels which cause atherothrombotic vascular disease. So as hyperhomocysteinaemia is an independent risk factor for CHD inferring that serum homocysteine levels can act as **"**Potential Biochemical Markers**"** for early detection of CHD.

Pasula S, Praveeena S, Ganesh B. Biochemical Markers for early detection of coronary heart disease. J Clin Sci Res 2014;3(Suppl 3): A93.

Abstracts of Platform Presentations (AMBICON – 2014)

Vitamin D deficiency and depression

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Objective: Vitamin D receptors and metabolizing enzymes are present in the central nervous system. Vitamin D receptors have been mapped throughout the brain suggesting a role for this Vitamin in psychiatric disorders. It has been recently speculated that Vitamin D deficiency plays a significant role in the development of depression. Based on these facts our objective is to study the prevalence of Vitamin D deficiency in depression.

Material and Methods: The study was carried out at Amrita Institute of Medical Science and Research Centre ,Kochi during the period Jan 2013 to June 2013. Participants (Age group:15-70yrs) included 50 known cases of depression and50 age matched healthy controls. Vitamin D was estimated bychemiluminescence immunoassay in the ARCHITECT. Inclusion criteria - Known cases of depression who were not taking Vitamin D supplements and normal LFT, RFT and TFT.Exclusion criteria - Patients with renal disease, liver disease, thyroid dysfunction and those on vitamin D therapy. Statistical analysis was done using Chi square test. p value <0.05 was considered statistically significant.

Results: Persons with depression had higher prevalence of vitamin D deficiency (58%) compared with controls (26%). Odds Ratio---3.93, p value=0.001.

Conclusions: This case control study shows high prevalence of Vitamin D deficiency in patients with depression compared with controls. Early detection and intervention of Vitamin D deficiency can thus decrease the morbidity associated with this disease as it is a leading cause of disability world wide.

Abraham A, Krishnan S, Subhakumari KN, Sheejamol VS. Vitamin D deficiency and depression. J Clin Sci Res 2014;3(Suppl 3): A94.

Acute respiratory markers in acute (type1) respiratory failure

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Background and Objectives: To know the significance of acute respiratory markers in acute respiratory failure (type 1).

Materials and methods: In GGH, Guntur Biochemistry lab 35 different cases of 14 – 60 yrs. ages both males and females cases of acute respiratory failure (Type I) and normal range is taken as control. The epoc blood analysis system is a portable blood analyzer. With epoc test cards with blood gas electrolyte and metabolites (BGEM) test card. pH, pO2, pCO2, HCO^{3-}, CSO2, glucose, lactic Acid taken as parameters.

Results: Control. pH Mean 7.4 ± 0.05,test pH mean 7.330 ± 0.1797, p<0.05; pO2 control mean 95 ± 13, test mean 59.44, ± 15.311, p<0.001; pCO2 control mean 41 ± 6.5, test mean 33.8, ± 11.342, P<0.01; HCO^{3-} control mean 25 ± 3,test mean 27.9, ± 3.222, P <0.01; CSO2 control mean 96 ± 2, test mean 90.644 ± 7.523, P <0.01. Glucose control mean 90 ± 15, test mean 147.777 ± 50.026, p<0.001; and L .A. control mean 0.9, ± 0.45, test mean 2.145, ± 1.416, P <0.01

Conclusion : In acute respiratory failure type I the pH values are lowered and it is significant. pO2 is lowered very much and it is most significant. pCO2 is also lowered slightly and is significant. HCO^{3-} is increased slightly and is significant. CSO2 is also decreased slightly and it is significant. Glucose values are increased and it is most significant. Lactic acid values are increased and it is significant.

Sreeramulu V. Acute respiratory markers in acute (type1) respiratory failure. J Clin Sci Res 2014;3(Suppl 3): A95.

Study to correlate the cardiovascular risk factors with severity and duration of psoriasis

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Objective: Psoriasis is a common inflammatory skin disorder. Due to sharing of a common inflammatory pathway psoriasis is associated with various cardiovascular risk factors such as obesity, diabetes mellitus, hypertension and dyslipidemia. This study is to determine the correlation between the cardiovascular risk factors with the severity and duration of psoriasis in the patients.

Material and methods: 40 patients with psoriasis were enrolled in this cross sectional study. Parameters like age, sex, duration of disease, drug history along with family, past and behavioural history noted. Severity of psoriasis was measured by Psoriasis Area and Severity Index (PASI) scoring. Height, weight, waist circumference and blood pressure were measured. Biochemical parameters like HbA1c, FBS, total cholesterol, triglyceride, HDL and LDL were estimated. Results obtained were statistically analysed using SPSS software.

Results: Among 40 patients 32 were male and 8 female with mean age 47.7 $\pm$ 14.8 yrs. In 40 cases 37 of them had psoriasis vulgaris, 12 of them were on systemic drugs. The mean PASI score was (5.53$\pm$4.4), duration (6.7$\pm$7.2yrs), HbA1c (5.3$\pm$1.05 %), FBS(109$\pm$40.1 mg/dl),total cholesterol (173.9$\pm$37.5 mg/dl), triglyceride (173$\pm$37.5 mg/dl), HDL(59$\pm$16.1 mg/dl), LDL(77.4$\pm$30.3 mg/dl), waist hip ratio(0.98$\pm$0.06), BMI(26.07$\pm$4.8 kg/m^2). No statistically significant correlation was observed between the PASI score and duration with HbA1c (r=0.208&0.180), FBS(r=0.024&0.105), total cholesterol (r=0.004&0.038), triglyceride(r=0.030&-0.187), HDL (r=0.245&0.063), LDL (r=-0.107&0.128), BMI (r=0.034&0.097) and waist hip ratio (r=0.174&-0.094).

Conclusions: There was no statistically significant correlation between the disease severity or duration of the psoriasis and the cardiovascular risk factors in this study.

Sarkar P, Raghunath H, Harish MR, Hamsa M. Study to correlate the cardiovascular risk factors with severity and duration of psoriasis. J Clin Sci Res 2014;3(Suppl 3): A96 .

High intracellular iron levels inhibit insulin signaling in hepatocytes

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Objective: Insulin resistance is associated with increased body iron stores. The objective of this study was to look at the effects of increased cellular iron on insulin signalling in hepatocytes

Methods: Primary mouse hepatocytes were treated with varying concentrations of ironand then stimulated with insulin. Western blot analysis for phosphorylated Akt, total Akt, insulin receptor substrate 1 (IRS1), phosphorylated IRS1, ferritin (L) and transferrin receptor 1 (TfR1) was done.Hepatocytes were also treated with insulin for varying periods of time to study the effects of insulin on gene expression of hepcidin and other iron-related proteins.The Kruskal Wallis test was done to look for overall statistical significance and the Mann Whitney test for pair-wise comparisons. A p-value of less than 0.05 was taken to indicate statistical significance.

Results: Treatment of hepatocytes with iron resulted in significantly increased intracellular iron levels. The p-Akt/Akt ratio, a marker of insulin signalling, was significantly reduced by iron in a dose-dependent manner. In addition, changes in phosphorylated and total IRS1 levels demonstrated induction of insulin resistance.Hepatocytes treated with insulin did not show significant effects on gene expression of hepcidin, the chief regulator of iron homeostasis. Insulin did not have significant effects on intracellular iron levels or protein levels of ferritin and TfR1.

Conclusion: Primary mouse hepatocytes treated with iron showed impaired insulin signalling and insulin resistance.Insulin did not have significant effects on expression of hepcidin or other iron-related proteins.

Varghese J, James JV, Jacob M. High intracellular iron levels inhibit insulin signaling in hepatocytes. J Clin Sci Res 2014;3(Suppl 3):A97.

Abstracts of Platform Presentations (AMBICON – 2014)

How to make the cooking nutritive: effect of different ways of cooking on the anti-oxidant and trace element levels – which is a better way?

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Introduction: Total anti-oxidant activity and trace elements may be changed by different ways of cooking methods such as boiling, pressure cooking, microwaving and frying. Diets rich in fruits and vegetables have long been associated with reduced risk of chronic disease. Cooking may alter antioxidant properties by initiating destruction, release or transformation of antioxidant food components. Vegetables are rich in minerals and trace elements. The micro nutrients shows varying degrees of stability when the vegetables are cooked.

Aim and Objective: The aim of this study was to determine the effect of different ways of cooking on the nutritive value with respect to vitamin C and trace element levels in the samples of raw and cooked vegetables.

Materials and Methods:Fresh cabbage (Brassica oleracea), green capsicum (Capsicum annum) and green peas (Pisumsativum) were obtained from the market. Divided into 5 portions – one portion was kept raw as control and stored at 4+0C in the refrigerator, others were subjected to 4 different cooking methods. The cooked vegetables were cooled and then were homogenized with 5% TCA, filtered and then centrifuged. Supernatant was stored at -20+0C until analyses. Raw and cooked vegetables were analysed for vitamin C levels, trace elements (Ca, P, Mg and Zn) levels.

Results: Vitamin C content of Brassica, Capsicum and Pisum decreased significantly *($p<0.05$)* during all cooking procedures compared with raw. The level of individual mineral in each of the vegetable samples varied with species *($p<0.05$)*

Conclusion: We conclude that phytonutrients like vitamin C, phosphorous, Mg and Zn are better preserved by microwave cooking compared to other conventional methods of cooking and more losses with boiling whereas calcium content is retained more with boiling and pressure cooking compared to microwave cooking and it differs between different species of vegetables.

Bellad A, Kubihal CV. How to make the cooking nutritive: effect of different ways of cooking on the anti-oxidant and trace element levels – which is a better way?. J clin Sci Res 2014;3(Suppl 3): A98.

Vitamin D, systemic inflammation and oxidative stress in psoriasis: are they related?

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Objectives: Psoriasis is a T-helper-1 (Th1)/Th17 mediated chronic inûammatory skin disease, characterized by hyperproliferation of keratinocytes. Psoriasis and cardiovascular disease share similar pathogenic mechanisms such as vascular endothelial cell dysfunction, oxidative stress and metabolic syndrome. 25-hydroxy vitamin D is an immune-regulatory hormone, with the ability to reduce cellular proliferation in psoriasis. Ischemia-modified albumin (IMA) is a marker of oxidative stress. Hence, we studied 25-hydroxy vitamin D, IMA and hs-CRP levels in patients with psoriasis, in comparison with healthy controls and their possible association with disease severity.

Material and methods: 43 cases of psoriasis and 43 controls were included in this cross-sectional study. Severity grading according to PASI scoring was done. Serum 25-hydroxy vitamin D, IMA and high sensitivity C-reactive protein (hs-CRP) were evaluated in all study subjects.

Results: In psoriasis, 25-hydroxy vitamin D showed a significant decline, whilst hs-CRP and IMA levels were significantly elevated, as compared with controls. Serum 25-hydroxy vitamin D showed a significant negative correlation with PASI score. hs-CRP and IMA showed a significant positive correlation with PASI score. Significant negative correlation was observed between 25-hydroxy vitamin D and hs-CRP; 25-hydroxy vitamin D and IMA levels in psoriasis.

Conclusion: Our results indicate that psoriasis is associated with significantly lowered 25-hydroxy vitamin D levels, along with increased systemic inflammation and oxidative stress, especially with severe disease.

Krishna Kumari GR, Rajappa M, Chandrashekar L, Revathy G, Malathi M, Thappa DM. Vitamin D, systemic inflammation and oxidative stress in psoriasis: are they related? J Clin Sci Res 2014;3(Suppl 3): A99.

Abstracts of Platform Presentations (AMBICON – 2014)

A study of insulin resistance in apparently healthy obese young adults

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Background: Obesity during adolescent and young adulthood usually continues to adulthood and lead to type 2 diabetes mellitus, cardiovascular disorders, metabolic syndrome and insulin resistance being the common link to all. Young adult is the group which is not remarkably studied so far in India should be targeted for early prevention.

Objective: To study the prevalence of insulin resistance in apparently healthy young adult obese population and its correlation with different cardiovascular risk factors.

Material and methods: 45 apparently young adult obese people in the age group of 21-34 years were studied against 61 age and gender matched controls. Along with physical parameters FPG, lipid profile, plasma insulin and routine biochemical parameters were assayed. Different lipid ratios, atherogenic index and insulin resistance were calculated. Small dense LDL-C was quantified and statistically analysed.

Results: In the obese group BMI, waist circumference and waist-hip ratio elevated significantly ($p=0.0001$) and though cholesterol, LDL-C and HDL-C remain unaltered, TG , VLDL-C and sdLDL-C elevated significantly ($p<0.001$).Significant Hyperinsulinaemia ($p<0.0001$) was found in the obese group and insulin resistance calculated by HOMA-IR and QUICKI index was statistically significant in the obese young adults ($p<0.0001$). Significant rise in atherogenic index ($p<0.001$) indicated cardiovascular risk in the obese group. Regression analysis showed sdLDL-C, hyperinsulinaemia and insulin resistance significantly dependent on waist circumference and atherogenic index was significantly dependent on TG ($p<0.0001$) rather than any other lipid factors. Obesity didn't have significant association with family history.

Conclusions: Obesity having more of environmental, life style and dietary aetiology than genetic and should be curbed by dietary and lifestyle modifications. Insulin resistance was found to be associated with obesity which is a forerunner of type-2 DM and metabolic syndrome. It should be identified early and interventional measures should be taken in time to prevent development of metabolic disorders and cardiovascular diseases.

Toora BD, Acharya V. A study of insulin resistance in apparently healthy obese young adults. J Clin Sci Res 2014;3(Suppl 3): A100.

Influence of cigarette smoking on the levels of leptin in overweight subjects

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Introduction: Cigarette smoking is one of the major causes of morbidity and mortality with Respiratory and Cardiovascular disease. Cigarette smoke is composed of many carcinogenic chemicals that trigger immune system. Adipocytokines like Leptin have been identified to play an important role in obesity and inflammation. Leptin is an adipocyte-secreted protein, which binds to receptors in hypothalamus and regulates energy expenditure.

Objective: The main objective of this study is to estimate serum Leptin levels in smokers and non-smokers.

Material and methods: Subjects with BMI more than 25.0 to 29.9 were recruited from kattankulathur area. We measured Leptin concentration (DRG Sandwich – ELISA) and blood lipid levels in 30 middle aged male smokers and 30 non-smokers. Waist circumference was measured and body fat % was calculated.

Results: Mean of serum Leptin showed a statistically significant elevation in the overweight smokers as compared to non-smokers ($p < 0.05$). Leptin levels significantly correlated with waist circumference, body fat % and duration of smoking. Our study showed a significant strong negative correlation with HDLC and positive correlation with Cardiac Risk Ratio (TC/HDLC) in chronic male smokers.

Conclusion: Thus, male chronic smokers have a higher leptin levels and justifies the degree of adiposity. Smoking not only triggers immune system but induces a decrease in hypothalamic sensitivity to leptin and thereby increases adipose tissue leptin production. Smoking appears to be one of the direct modulators of leptin metabolism in overweight subjects.

Arul Senghor KA, Shivasekar M, Ramachandran K, Vasantha M. Influence of cigarette smoking on the levels of leptin in overweight subjects. J Clin Sci Res 2014;3(Suppl 3): A101.

Abstracts of Platform Presentations (AMBICON – 2014)

Role of inflammatory markers for risk assessment of cardiovascular disorders in obese and non-obese pre-pubertal age group

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Objectives of the Study: To estimate and compare the levels of IL-6, IL-8, CRP and TNF-á in obese and non obese individuals in pre-pubertal age group.

Material and methods: Forty healthy obese and non-obese subjects in the age group of 05 to 11 years were selected as cases and controls. BMI exceeding 95th percentile are defined as obese; between 85th percentile and 95th percentile are considered as overweight; below 85th percentile is considered as normal. Subjects with constitutionally large growth, <5 years and >12 years were not included in the study. Plasma CRP (mg/ dl), IL-6 (pg/ml), IL-8 (pg/ml), TNF-á (pg/ml) were determined by double antibody method Enzyme Linked Immunosorbent Assay [ELISA] .

Results: Mean, standard deviation and student–t test was calculated. Pearson's correlation coefficient was applied. Statistical calculation was done on SPSS software.In this study it is found that IL-6 is positively correlated with weight (P=0.211), cholesterol(P=0.331) and triglyceride (P=0.271). IL-8 is positively correlated with weight(0.227), waist/hip circumference ratio (P=0.288), cholesterol (P=0.256), LDL (P=0.266), triglyceride(P=0.287) and TNF-á (P=0.207). TNF-á is having negative correlation with HDL (P= -0.143) and positive correlation with VLDL(P=0.239). While CRP is positively correlated with weight(P=0.211) and negatively correlated with HDL(P= -0.121).

Conclusion: It has been found that obesity causes inflammation which leads to endothelial dysfunction and development of cardiovascular disorders. It is concluded from this study that obesity is precluding to inflammation and might increase the risk of cardio-vascular disorders later.

Verma S, Akila P, Prashant V, Suma MN, Kumar JK. Role of inflammatory markers for risk assessment of cardiovascular disorders in obese and non-obese pre-pubertal age group. J Clin Sci Res 2014;3(Suppl 3): A102.

Association between body mass index and insulin resistance in non morbid obese subjects

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Objective: Obesity, characterised by expansion of adipose tissue is associated with a number of pathological conditions including Type 2 Diabetes Mellitus. It has not yet been fully elucidated whether insulin resistance is due to complications of obesity or is related to increased fat mass. This study aimed to analyse the association between obesity and development of insulin resistance by examining the association between body mass index (BMI) and HOMA- IR, a surrogate marker for insulin resistance in a group of non morbid obese subjects.

Methods: The study subjects that included obese(BMI>30kg/m^2), overweight (25<BMI<30) and lean (BMI<25) subjects were a subset of a larger case control study. Subjects with a history of diabetes, hypertension, coronary artery disease and dyslipidaemia were excluded. Clinical history and anthropometric measurements were taken, biochemical parameters (fasting plasma glucose (FPG), Fasting insulin) were measured and HOMA-IR calculated.

Results: There was no significant difference in FPG among the three groups (p>0.05). Fasting insulin levels and HOMA-IR were significantly higher in obese subjects compared to lean subjects (p<0.001). A significant positive correlation (r=0.49) was present between BMI and HOMA-IR levels. (p<0.001)

Conclusions: Although the sample size was limited, the significant correlation between BMI and HOMA-IR values in non morbid obese subjects suggests an association between expansion of fat mass and development of insulin resistance

Sudhakar M, Silambanan S, Ramya R, Malar J. Association between body mass index and insulin resistance in non morbid obese subjects. J Clin Sci Res 2014;3(Suppl 3): A103.

Abstracts of Platform Presentations (AMBICON – 2014)

Antioxidant status in passive smoking population

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Objective: A comparative study on antioxidant status in healthy passive smoking population and healthy controls not exposed to passive smoking.

Materials and Methods: Blood was collected from 30 healthy volunteers exposed to passive smoking (group 1) and 30 healthy volunteers not exposed to smoking (group 2- control).In both the groups, plasma vitamin C was estimated spectrophotometrically by the method described by Roe and Kuether (Clin. Chem) and plasma reduced glutathione (GSH) was estimated by Ellman method. The results were analysed statistically by student t test using SPSS software version 16.0.

Result: There was a significant decrease in mean plasma vitamin C and GSH levels in group 1(0.35mg/dl and 1.85µmol/L) when compared to group 2(1.16mg/dl and 5.45µmol/L).p value <0.01.

Conclusion: This study demonstrates decreased antioxidant levels in passive smokers.

Divya D, Madhavi K, Gurupavan Kumar G, Madhavilatha N. Antioxidant status in passive smoking population. J Clin Sci Res 2014;3(Suppl 3): A104.

Zinc supplementationand its impact on oxidative stress and nutritional status in leprosy

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Introduction: Oxidative stress and antioxidant deficiency are present in infected subjects and can be related to infection progression in chronicgranulomatous diseases like leprosy. Zinc is an essential trace element required for human and animal nutrition and recently its role as an important component of body's antioxidant system has become evident.

Aims and Objectives: The aim of the study was to evaluate the oxidative status of the leprosy patients by estimating the serum MDA, Zn levels and lipid profile , to find out association between malondialdehyde and Zn and also to see the effect of zinc supplementation on plasmamalondialdehydeand serum zinc levels in leprosy patients.

Material and methods: Fifty two cases, 32 belonging to Tuberculoid leprosy and 20 belonging to the Lepromatous leprosy group underwent Zn supplementation for a period of 4 months. The malondialdehyde and Zinc levels were assessed at baseline, after 2 months and 4 months of Zn supplementation.

Results and conclusion: Plasma malondialdehyde, the marker of oxidative stress was significantly reduced, but serum zinc levels showed a significant rise in both the groups in the post intervention period as compared to their levels before supplementation,there is also a negative association (r = - 0.39) between the two parameters MDA and Zinc indicating a potential beneficial role of zinc as a nutritional supplement and an anti-oxidant.

Kumari S, Pradhan T. Zinc supplementation and its impact on oxidative stress and nutritional status in leprosy. J Clin Sci Res 2014;3(Suppl 3): A105.

Abstracts of Platform Presentations (AMBICON – 2014)

Paraoxonase 1 (PON 1) status (arylesterase activities and polymorphism) in chronic obstructive pulmonary disease patients

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Objective: The objective of present study is to investigate the role of paraoxonase 1 (PON 1) status i.e arylesterase activity and Q192R polymorphism, in case of chronic obstructive pulmonary disease patients.

Material and methods: The study group consists of 40 patients with chronic obstructive pulmonary disease patients and control group consisted of 40 chronic obstructive pulmonary disease patients. Paraoxonase arylesterase activity was measured by using phenylacetate as substrate andphenotyping was done by using ratio of enzyme activities using two substrates.

Result: Arylesterase activity of PON1 was found significantly lower in patients havingChronic obstructive pulmonary disease patients than patients not having Chronic obstructive pulmonary disease patients ($p<0.05$). It shows trimodal distribution of QQ, QR, and RR phenotypes according to antimodes. There is no significant difference ($p< 0.05$) was found in phenotypic distribution in cases and controls.

Conclusion: Paraoxonase 1 arylesterase activity is significantly decreased in cases of Chronic obstructive pulmonary disease patients than in controls.

PON1 polymorphism of QQ, QR and RR shows no significant difference in protection against chronic obstructive pulmonary disease patients.

Mogarekar MR, Kumar P, More SV. Paraoxonase 1 (PON 1) status (arylesterase activities and polymorphism) in chronic obstructive pulmonary disease patients. J Clin Sci Res 2014;3(Suppl 3): A106.

Study of serum myeloperoxidase activity and malondialdehyde levels in preeclampsia

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Background and objectives: The treatment of Preeclampsia (PE) is symptomatic till date, as the etiology of this condition has remained elusive for many centuries. Oxidative stress may be the point at which multiple factors converge resulting in endothelial cell dysfunction and consequent clinical manifestations of preeclampsia. The full elucidation of the mechanisms involved in the pathogenesis will hopefully lead to a more complete understanding of the etiology of preeclampsia and lead to successful therapeutic intervention. The aim of the study is to assess the oxidative stress in PE by estimating an oxidant serum myeloperoxidase (MPO) and oxidative stress marker malondialdehyde (MDA) levels in PE and comparing them in normal pregnant woman.

Material and methods: Fifty PE women and fifty age matched normal pregnant women attending the Antenatal clinic of RRMCH, Bengaluru, were our study subjects. Pregnant women with medical conditions that will interfere with the study were excluded. Serum MPO and MDA was estimated manually by Spectrophotometric method.

Results: There was significant ($P<0.001$) increase in MPO levels and MDA levels in PE patients compared to controls. There was increase in oxidant and oxidative stress marker level indicating an oxidative stress in PE.

Conclusion: Thus this study shows that oxidative stress plays a key role in the pathogenesis of PE which contributes to endothelial dysfunction and maternal signs and symptoms. Estimation of MPO and MDA in the early pregnancy may help in identifying pregnant woman at risk of developing PE and execution of preventive measures.

Reena R, Usha SMR, Rupakala BM. Study of serum myeloperoxidase activity and malondialdehyde levels in preeclampsia. J Clin Sci Res 2014;3(Suppl 3): A107.

Abstracts of Platform Presentations (AMBICON – 2014)

Assessment of cardiovascular risk and oxidative stress in patients with polycystic ovarian syndrome

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Objectives: To study serum levels of hs-CRP, lipid profile, and MDA to assess cardiovascular risk and oxidative stress in patients with PCOS compared to healthy age matched controls.

Material and methods: The study was conducted on fifty patientsof PCOS diagnosed by Department of Obstetrics and Gynaecology, Lokmanya Tilak Municipal Medical College and General hospital, Mumbai. Fifty age matched healthy females were taken as controls. PCOS was diagnosed according to the criteria of the Rotterdam European Society of Human Reproduction and Embryology.

Blood sample was collected in evacuated tubes after 12 hours of overnight fasting.Blood glucose, triglycerides (TAG), total cholesterol (TC), HDL cholesterol and LDL cholesterol were measured using the enzymatic method on AU 400 autoanalyser.VLDL cholesterol was calculated using Friedewald equation. hs-CRP was estimatedby Latex Enhanced Immuno Turbidimetric assay and MDA was measured colorimetrically by modified method of Sadasivudu et al.

Results: No significant differences in glucose, TAG, TC, HDL-C, LDL-C, VLDL-C concentration were observed between the two groups.hs-CRP levels were found to be raised in PCOS but the difference was statistically insignificant. MDA levels were found to be significantly increased in study group compared to control group ($p=0.03$).

Conclusion: Although PCOS is associated with increased cardiovascular risk, the routine cardiac parameters like TC, TAG, HDL-C, LDL-C, VLDL-C, hs-CRP were normal. Increased oxidative stress as shown by increased MDA levels could be an important factor for increased cardiovascular risk in patients of PCOS.

Sundharan S, Dipnaik K, Ingale P, Shelke S. Assessment of cardiovascular risk and oxidative stress in patients with polycystic ovarian syndrome. J Clin Sci Res 2014;3(Suppl 3): A108.

A study on assessment of testosterone, insulin resistance and HbA1c in women with polycystic ovarian syndrome

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Objective: Polycystic ovarian syndrome (PCOS), the most common cause of infertility, is a disorder characterized by chronic anovulation, hyperandrogenism, hyperinsulinemia, and often presence of obesity. The purpose of this study was to assess serum Testosterone, Insulin resistance and glycated hemoglobin (HbA1c) in women with PCOS and to compare with healthy women as controls.

Material and methods: A comparative study including 30 women diagnosed as PCOS and 30 age-matched healthy women as controls was conducted.The age group for the study was 18 to 35 years. Fasting blood samples were drawn to measure serum testosterone, serum insulin, fasting blood sugar (FBS) and glycated hemoglobin (HbA1c). Insulin resistance (IR) was calculated by homeostasis model assessment (HOMA). Body Mass Index (BMI) was also calculated.

Results: A significant increase in fasting serum insulin ($p<0.001$) was found in women with PCOS in comparison with controls. Similarly, a significant increase HOMA-IR was observed in PCOS women compared to controls ($p<0.001$). Mean BMI, FBS, HbA1c and testosterone were found elevated in the PCOS population compared to controls. No significant correlation was found between testosterone and fasting insulin.

Conclusions: The current study provides further evidence that significantly higher fasting insulin and HOMA in PCOS group indicates presence of IR. IR and high HbA1c in PCOS group may have a potential role in the prediction of dysglycemic disease in women with PCOS.

Gokaldas SR, Ravi BV. A study on assessment of testosterone, insulin resistance and HbA1c in women with polycystic ovarian syndrome. J Clin Sci Res 2014;3(Suppl 3): A109.

Abstracts of Platform Presentations (AMBICON – 2014)

Evaluation of vitamin D levels in polycystic ovarian syndrome

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Objectives: VitaminD deficiency is more prevalent and is associated with infertility in polycystic ovarian syndrome (PCOS). Our study aimed to evaluate serum vitaminD levels in infertilewomen with PCOS and to correlate vitaminD levels with LH/FSH ratio.

Material and methods: In thiscase control study, werecruited 25 infertile women clinically diagnosed as PCOS and 25 age and sex matched controls. Serum vitD ,LH& FSH levels are measured by ECLIA. Serum vitaminD concentration of <20 ng/ml is considered as deficiency. Unpaired t-test is used for statistical analysis and p value of <0.05 is taken as significant.

Results : The mean ± SD of vitaminD levels of cases and controls are 13.2 ± 6.75 ng/ml and 25.68 ± 3.68 ng/ml respectively. VitaminD levels showed a statistically significant difference between cases and controls (p value <0.0001). 19 out of 25 cases(76%) have showed vitaminD deficiency(i.e.<20ng/ml). Correlation between vitaminD levels and LH/FSH ratio in PCOS cases didn't show any statistical significance.

Conclusion : Our study showed increased prevalence of vitaminD deficiency in infertile women with PCOS and thus highlights the role of vitamin D in reproductive function. Studies have proved beneficial effects of vitaminD in improving fertility and other symptoms in PCOS. Additional randomized controlled trials are required to confirm the potential benefits of vitamin D supplementation in these group of women.

Madhavi K, Chandran PA, Vijaya Lakshmi B, Vanisrinivas T, Shivalakshmi M. Evaluation of vitamin D levels in polycystic ovarian syndrome. J Clin Sci Res 2014;3(Suppl 3): A110.

Study of insulin resistance and lipid profile in polycystic ovarian syndrome

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Objective of the study: The polycystic ovarian syndrome (PCOS) is the most common endocrine disorder affecting female fertility. Obesity in adolescents is correlated with insulin resistance (IR) and dyslipidemia. PCOS related ovulatory dysfunction in adolescents often correlates to adolescent obesity. Insulin resistance and hyperinsulinemia may play an important role in pathophysiology of PCOS. The present study was aimed to study the association of lipid profile and obesity with insulin resistance in PCOS.

Material and methods: 30 obese PCOS women with a BMI> 30Kg/m^2 attending Gynecology OPD at Narayana medical college and hospital were taken as cases.30 age matched non obese PCOS women with a BMI<30Kg/ m^2 were taken as controls. Fasting blood sample was collected and analysed for fasting glucose, serum lipid profile by using chemistry analyser. Plasma insulin was measured by chemiluminiscence immunoassay. Insulin resistance was estimated by HOMAIR method.

Results: The results of the present study showed significantly increased total cholesterol, triglycerides, LDL and decreased levels of HDL in PCOS women with obesity when compared to controls. Insulin resistance was significantly high (p value < 0.05) when compared to controls. Among the PCOS women with obesity a positive correlation was found between insulin resistance and BMI.

Conclusion: The present study concluded that obesity and dyslipidemia were associated with insulin resistance in PCOS. Hence, in view of the insulin resistant state, PCOS subjects may be considered at risk of atherosclerosis and its manifestations.

Aruna P, Krishnamma M, Ramalingam K, Naidu JN, Rajarajeswari, Prasad S. Study of insulin resistance and lipid profile in polycystic ovarian syndrome. J Clin Sci Res 2014;3(Suppl 3): A111.

Study of correlation of anti- Mullerian hormone with LH level and LH/FSH ratio in anovulatory polycystic ovarian syndrome

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Objective : The aim of the study is to estimate Anti – mullerian hormone and its correlation with luteinising hormone and luteinising/follicle stimulating hormone ratio in anovulatory Poly Cystic Ovarian Syndrome patients.

Material and methods: Around 60 women attending Obstetrics and Gynaecology outpatient department at Chennai Medical College Hospital and Research Centre .Trichy. Among them newly diagnosed 30 PCOS according to Rotterdam consensus and 30 normoovulatory controls were included for the study. Samples were taken in early follicular phase of natural cycle or progestin induced withdrawal bleeding and serum LH, FSH, Testosterone and AMH levels were measured.

Results: Serum AMH levels were significantly high in the PCOS. AMH correlated positivelywith LH , LH / FSH , Testosterone , no of follicles and ovarian volume .Negatively correlated to FSH . No correlation of AMH was found with BMI and Age.

Conclusion: Serum AMH hormone shows significant increase in PCOS womenCompared with normoovulatory women. Hyperandrogenism in PCOS is associated with increase in AMH possibly due to the increase in number of small antral follicles . AMHcould be a positive predictor of ovarian stimulation outcome in Poly Cystic Ovarian Syndrome. To conclude AMH can serve as a single marker along with other criteria for assessing PCOS. Further researches are needed in this aspect.

Naveetha Lakshmi N, Ponniraivan K, Senthil Kumaran S, Selvi J. Study of correlation of anti- Mullerian hormone with LH level and LH/FSH ratio in anovulatory polycystic ovarian syndrome. J Clin Sci Res 2014;3(Suppl 3): A112.

A comparative study of insulin and testosterone between euthyroid and hypothyroid status in polycystic ovarian syndrome patients

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Introduction: Polycystic Ovarian Syndrome is the most common endocrine disorder in reproductive age group women. It is the most common cause of anovulation. Hypothyroidism is another very common endocrine pathology seen among young women. These two conditions are the major hurdles in Infertility. Both pose individual risk to subfertility,infertility and ovarian failure.

Aim: The present study is aimed to evaluate Thyroid function status. Compare BMI, TSH, Fasting Insulin, and Testosterone between euthyroid&hypothyroid PCOS patients.

Material and methods: This prospective Cross sectional study was conducted in 73 PCOS patients who were diagnosed based on revised 2003 Rotterdam criteria. Serum TSH, Fasting Insulin, Testosterone was estimated in all the participants. Patients on treatment were excluded.

Statistical analysis: Students t test, Chi-square test were applied for comparing the mean of 2 groups.

Results: This cross sectional study showed 22% prevalence of hypothyroidism among PCOS women. BMI, Fasting Insulin, Testosterone showed statistically significance between the 2 groups**.**

Conclusion: Prevalence of Hypothyroidism is at higher rate in PCOS and this adds risk for ovarian dysfunction and infertility and thestudy emphasise the importance of screening for hypothyroidism in PCOS patients.

Rani AJ, Ramadevi, Ananthan. A comparative study of insulin andtestosterone between euthyroid and hypothyroid status in polycystic ovarian syndrome patients. J Clin Sci Res 2014;3(Suppl 3): A113.

Abstracts of Platform Presentations (AMBICON – 2014)

Paraoxonase 1 (PON 1) status (arylesterase activities and polymorphism) in paediatric gastroenteritis patients

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Objective: The objective of present study is to investigate the role of paraoxonase 1 (PON 1) status i.e activity and Q192R polymorphism, in case of gastroenteritis of paediatric population.

Material and methods:The study group consists of 40 paediatric patients with gastroenteritis and control group consisted of 40 paediatric population without gastroenteritis. Paraoxonasearylesterase activity was measured by using phenylacetate as substrate andphenotyping was done by using ratio of enzyme activities using two substrates.

Result: Arylesterase activity of PON1 was found significantly lower in patients having gastroenteritis than patients not having gastroenteritis ($p<0.05$). It shows trimodal distribution of QQ, QR, &RR phenotypes according to antimodes. There is no significant difference ($p< 0.05$) we found in phenotypic distribution in cases and controls.

Conclusion: Paraoxonase 1 arylesterase activity is significantly decreased in cases of gastroenteritis than in controls.PON polymorphism of QQ,QR and RR shows no significant difference in protection against gastroenteritis.

Mogarekar MR, More SV, Kumar P. Paraoxonase 1 (PON 1) status (arylesterase activities and polymorphism) in paediatric gastroenteritis patients. J Clin Sci Res 2014;3(Suppl 3): A114.

Study of bone mineralization and renal function biochemical parameters in preterm and term infants

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Objective: To study and compare different biochemical parameters of bone mineralization and renal function in preterm and term infants.

Method: The study included 150 newborn babies admitted in the neonatal unit,of the hospital. The enrolled neonates were divided into study group [further divided into subgroups according to their gestational age (GA) - Group-IA (30-32 weeks of GA and IB (34-36 weeks of GA), 50 neonates in each group] and control group (Group-II also including 50 neonates). Serum calcium, phosphorous, alkaline phosphatase (ALP), creatinine, sodium, and Potassium were measured in all the three groups.

Result: Serum calciumand phosphorous levels were found to be significantly decreased with$P<.001$ and $p<0.05$ respectively, and serum ALP, creatinine, and potassium were found to besignificantly increased ($P<0.05$) in Group-IA as compared Group-II. Serum sodium levels did not show any significant difference. There was no significant difference in calcium and phosphorous levels although they were decreased, whereas serum ALP and creatinine levels were found to be significantly($P<0.05$) increased in Group-IA as compared to Group-IB. High serum ALP and creatinine levels and low serum calcium andphosphorous levels were seen inpreterm babies. Group-IB did not show any significant difference when compared to Group-II (control group).

Conclusion: It can be concluded that high serum ALP activity and low serum calcium and phosphorous levels are associated with preterm babies. A significant difference in the mean values of the renal function parameters was also obtained, except for serum sodium and potassium levels.

Bala J, Seth S, Ghalaut VS. Study of bone mineralization and renal function biochemical parameters in preterm and term infants. J Clin Sci Res 2014;3(Suppl 3): A115.

Abstracts of Platform Presentations (AMBICON – 2014)

Thyroid hormone status in pregnancy: a retrospective study

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Objective: Evaluation of thyroid hormones status (T3, T4 and Thyroid Stimulating Hormone) in first and second trimester of pregnancy.

Material and methods: In this retrospective study we evaluated thyroid hormones (T3, T4, TSH) in serum of total 200 antenatal mothers in their first and second trimester of pregnancy, referred from Obstetrics department for routine thyroid study.Serum was separated from fasting blood sample. Hormonal assay was carried out on Immulite 1000 (Siemens, Germany) chemiluminescent immunoassay.

Result: Among 200 pregnant women (mean age 26.6 years) evaluated 165 (82.5%) were found to have normal T3, T4 and TSH level. In 35 (17.5%)mothers hypothyroidism were detected. Mean TSH value among normal and hypothyroid mothers were 1.75 and 7.74 mIU/L respectively. 11out of 35 hypothyroidism individuals (5.5% of total) had only elevated TSH level with normal T3 and T4 which was considered as subclinical hypothyroidism. Much higher TSH value was observed (mean 10.68 mIU/L) in subclinical cases when compared with overt hypothyroid mothers (mean 5.34 mIU/L)

Conclusion: Significant proportion of pregnant female suffers from hypothyroidism, especially subclinical which is often detected accidentally during investigations of some other reason. Thyroxin deficiency in pregnancy is associated with detrimental effect on IQ level and growth of child and high incidence (25-30%) of permanent hypothyroidism in these women. Hence screening of pregnant women for thyroid dysfunction is highly recommended along with other established assessment during pregnancy for better outcome.

Chatterjee G, Chandel R, Kamble P, Abichandani LG. Thyroid hormone status in pregnancy: a retrospective study. J ClinSci Res 2014;3(Suppl 3): A116.

Combined screening of maternal serum in second trimester

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Objective: The objective of this retrospective study was to assess the impact of inclusion of Nuchal Translucency (NT) measurement of 1st Trimester Scanin 'combined risk' calculationsfor Trisomy 21 in women who came for 2nd Trimester Quadruple Screen at Apollo Hospitals, Hyderabad.

Material and methods: We had performed a total of 4,740 maternal screens, out of which 3614, 725 and 431 were triple(since 2007), double (since 2009), and quadruple marker screens (since 2012) respectively.The analyses of maternal AFP, total hCG and uE3 were done on Siemens Immulite 1000 and Inhibin-A on Beckman Access-2; the risk calculations were done using PRISCA software. 16 cases presenting with either maternal diabetes, twins, IVF or non-Indian ethnic origin were excluded from the study.

Results: The average maternal age on the day of sampling of 415 women included in the study was 29.2 years. 188 women (Group I) had only 2nd Trimester scans. Combined risk calculations could be done for the remaining 227 out of 415 women (Group II) as they provided 1st Trimester scans.

Group I had 12 out of 188 women (6.38%) positive for Trisomy 21(cut-off 1:250). The Biochemical risk alone for Trisomy 21 in Group II was found to be positive in 7 out of 227 women (3.08%) which was reduced to 4 out of 227 (1.76%) by adding NT measurement by combined risk calculations. The odds ratio using Fisher Exact Probability Test between the two Groups at 95% confidence intervalswas 3.80 (p=0.02). The incidence for Trisomy 18 and Open Neural Tube defects were 0.24% & 1.69% respectively.

Conclusions: Our study suggests that the inclusion of NT of 1st Trimester ultrasound scan along with biochemical markers in the 2nd Trimester greatly improves risk assessment for Trisomy 21 by the Triple / Quadruple screen.

Suhasini D, Niloufer A, Rajeshwari M, Harika D, Sanyukta K. Combined screening of maternal serum in second trimester. J Clin Sci Res 2014;3(Suppl 3): A117.

Abstracts of Platform Presentations (AMBICON – 2014)

Assessing the need for adjustment of first trimester screening markers in diabetic women

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Objective: To evaluate the significance of serum Pregnancy Associated Plasma Protein A(PAPP A) and Free β Human Chorionic Gonadotropin (β HCG) levels in diabetic women with normal NT(Nuchal Translucency) in comparison to non diabetic women in first trimester of pregnancy.

Materials and Methods: The study design is cross-sectional involving 918 non diabetic and 64 diabetic women who underwent first trimester (11 to 13 weeks 6days) aneuploidy screening from September 2013 to august 2014 at Sri Ramachandra medical centre. PAPP A is measured by solid phase two site fluoroimmunometric assay. Free β Human chorionic gonadotropin is measured by solid phase, two site fluoroimmunometric assays. Results will be analysed using SPSS software version 22.

Results: PAPP A and â HCG values in diabetic women is found to be significantly low compared to non diabetic women. The difference is statistically significant with p value less than 0.05.

Conclusion: In women diagnosed with diabetes mellitus before gestation, PAPP A and β HCG concentrations in serum are significantly low when compared with non diabetic women. This may necessitate considering adjustment of the PAPP A and â HCG levels in diabetics for calculating aneuploidy risk.

Spandana T, Chaudhuri JK, Silambanan S. Assessing the need for adjustment of first trimester screening markers in diabetic women. J Clin Sci Res 2014;3(Suppl 3):A118.

Connotation of subclinical hypothyroidism in pregnancy and obstetric outcome

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Introduction: The effect of altered thyroid status on pregnancy adversely affecting the obstetric outcome and foetal wellbeing is well documented. Consensus regarding mandatory screening of pregnant women for thyroid abnormalities is still debatable.

Objective: To find out the prevalence of subclinical hypothyroidism in pregnant women and register any association of the altered thyroid status with the obstetric outcome.

Material and methods: 200 pregnant women with no prior history/family history of thyroid disorders were randomly selected in their first ante-natal visit and assessed for thyroid function. They were followed up till confinement.

Results: 27 pregnant women were detected with subclinical hypothyroidism with low normal T4 but high TSH .5 cases having overt hypothyroidism were excluded from study. From these 27 cases, 10 women had anti TPO Ab positive. A rise in TSH level was observed in the cases in second and third trimester.5 cases with subclinical hypothyroidism had preterm delivery with LBW babies. 2 abortions and 1 abruptio placentae case was reported with anti TPO Ab positive. 2 women with subclinical hypothyroidism developed gestational diabetes mellitus and 3 cases developed preeclampsia.

Conclusion: Subclinical hypothyroidism is highly prevalent in endemic areas like Odisha with adverse effects on obstetric outcome. Screening of pregnant women in their first ANC and timely intervention may improve the obstetrics outcome in subclinical hypothyroidism cases.

Dash P, Mohapatra A, Ray S. Connotation of subclinical hypothyroidism in pregnancy and obstetric outcome. J Clin Sci Res 2014;3(Suppl 3):A119.

Abstracts of Platform Presentations (AMBICON – 2014)

Foetal fibronectin in cervicovaginal secretion as an indicator of preterm labour

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Introduction: Preterm delivery is defined as birth occurring at less than 37 completed weeks of gestation is seen in 7-11% of pregnancies and remains a significant cause of neonatal morbidity and mortality. Foetal fibronectin (FFN), a glycoprotein is produced by foetal amnion, fibroblasts and endothelial cells is detected in cervico vaginal secretion just prior to onset of labour. The aim of this study is to estimate the foetalfibronectin level,and compare with cervical indexand USG for diagnosis of preterm labour.

Methodology: 70 pregnant women with singleton pregnancy between 24 to 34 weeks gestation presenting with symptoms suggestive of preterm labour were enrolled in the study. Cervico-vaginal secretions were taken for estimation of foetal fibronectin by ELISA. Per vaginal examination of the women was performed to assess cervix status-dilatation, effacement, membranes etc. All women were subjected to TVS/ abdominal USG to measure cervical length and to calculate cervical index.

Results: With the best cut-off value of FFN 55 ng/ml (as seen by ROC curve) 86.4% of women delivered preterm with FFN >55ng/ml whereas only 27.3% women had preterm delivery when FFN was d" 55ng/ml. The sensitivity, specificity, PPV and NPV of the test was found to be 78.5%, 85.7%, 89.2% and 72.7% respectively.

Conclusions: FFN, cervical index and sonography can independently predict preterm delivery but their accuracy improves when used in combination.

Jain A, Bharti G, Singh A. Foetal fibronectin in cervicovaginal secretion as an indicator of preterm labour. J Clin Sci Res 2014;3(Suppl 3):A120.

A Study on correlation of serum zinc and copper concentration in preeclampsia

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Objectives: 1) To study the serum zinc and serum copper concentration in pre-eclamptic women and normal pregnant women. 2) To study the correlation of serum zinc and copper concentration in both pre-eclamptic and normal pregnant women.

Material and methods: The study included 25 mild pre-eclampsia patient, 25 severe pre-eclampsia patient and 50 normal pregnant women after 20wks of pregnancy. Blood samples were collected after proper informedconsent and thereafter serum zinc and serum copper was estimated by colorimetric method.

Results: Compared to normal pregnant women serum zinc concentration was significantly lowered in pre-eclamptic patient ($p<0.0001$) and serum copper concentration was significantly higher in pre-eclamptic patient ($p<0.05$).. There was a significant negative correlation between serum zinc and copper concentration in both mild and severe pre-eclamptic patients.

Conclusion: Assessment of serum zinc and copper concentration during pregnancy may be used as a predictive marker for disease progression from mild to severe form and detection of these parameters can aid in better management of pre-eclampsia patient and reduce maternal and fetal morbidity and mortality.

Kaur B, Bhattacharyya K, Patwari M. A study on correlation of serum zinc and copper concentration in preeclampsia. J Clin Sci Res 2014;3(Suppl 3):A121.

Abstracts of Platform Presentations (AMBICON – 2014)

Need of iron supplementation in gestational diabetes mellitus

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Objective: Gestational diabetes mellitus (GDM) increases the risk of macrosomia and perinatal morbidity and mortality for the fetus, there is a long-term risk of development of type 2 diabetes for the mother. It is increasingly being recognized that there is a systemic inflammation in GDM, Ferritin is also a positive acute-phase reactant and in pregnancy iron supplementations are given to all the females. Thus, the objective of this study was to determine whether there was a relationship between serum ferritin concentration and GDM in Indian pregnant females.

Material and methods: Case control study performed in 90 females, referred to department of Biochemistry, Lady Hardinge Medical College and associated hospitals, New Delhi.Blood sugar was done by fully automated autoanalyser and Ferretin was analysed by ELISA kit. They were analysed for the significance and correlation of Ferretin with blood glucose in GDM patients.

Results: On comparison the levels of ferretin were statistically significantly high in GDM cases as compared to controls (p value 0.008). There was a negative correlation of ferretin with blood sugar level (r value -0.039, p value 0.794)

Conclusion: Serum ferritin concentration provides an indirect estimate of body iron stores because it is highly correlated with bone marrow iron. The high levels of ferretin can help in determining the need of iron supplementation given in pregnant females. Further studies in larger populations are required to establish this study.

Yadav A, Saini V, Kataria M, Jain A. Need of iron supplementation in gestational diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3): A122.

Evaluation of multiple biochemical parameters in preeclampsia and eclampsia patients

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Objective: Present study aimed to assess various biomarkers of renal, cardiovascular injury and total antioxidant status (TAS) in PE, eclampsia patients and compare them with normal pregnancies between 24 to 36 weeks of gestation without any other complications.±±

Material and methods: 40 PE, 40 eclampsia and 40 normal healthy singleton pregnancies were enrolled in the study after thorough clinical evaluation. After overnight fast, 5 ml blood samples were collected for serum cystatin C, homocysteine, lipoprotein a, lipid profile and TAS assays.

Results:

Variables	Control (40)	Preeclampsia (40)	Eclampsia (40)
Age (years)	24.2 ± 3.6	23.8 ± 2.6	27.1 ± 3.8
Gestational age (weeks)	26.4 ± 3.2	25.6 ± 2.9	30.6 ± 1.8*
Systolic Blood Pressure (mmHg)	112 ± 10	145 ± 6*	158 ± 12*
Diastolic blood pressure (mmHg)	72 ± 6	94 ± 4*	110 ± 12*
Serum Cystatin C ng/ml	0.76 ± 0.23	1.55 ± 0.8*	1.93 ± 0.7**
Serum Homocysteine (µmol/l)	6.8 ± 2.4	7.5 ± 2.2*	18.3 ± 5.2**
Serum Lipoprotein a mg/dl	18 ± 4	31 ± 2**	37 ± 6**
Serum TAS (mmol/l)	1.65 ± 0.5	1.29 ± 0.4*	0.98 ± 0.2**

*P value <0.05 ; ** p value <0.001

Conclusion: We conclude that deranged cardiovascular and renal mechanisms with reduced antioxidant status contribute to the disease process. Cystatin C may be promising screening tool for preeclampsia. Renal injury may be important essential component of PE. Early prediction of PE will help to plan prophylactic strategy.

Thorat AP, Kareem I, Bavikar J, Asegaonkar SB, Kavathekar P. Evaluation of multiple biochemical parameters in preeclampsia and eclampsia patients. J Clin Sci Res 2014;3(Suppl 3): A123.

Abstracts of Platform Presentations (AMBICON – 2014)

Evaluation of clinico-demographic profile, iodized salt usage, iodine status and thyroid profile in thyroid disorders

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Objective: To estimate median urinary iodine concentration (UIC), serum Thyroxine (T4), serum Thyroid stimulating hormone(TSH) levels and correlate the findings with clinico-demographic variables.

Material and methods: After taking Institutional ethical committee clearance, a case control study was conducted in the Department of Biochemistry, SVMC, Tirupati. It included 50 controls and 50 patients with thyroid disorders (cases) attending SVRRGGH, Tirupati. After obtaining informed written consent, detailed history taken and thorough physical examination conducted. UIC was estimated in spot urine samples using Ammonium per-sulfate method (Sandell-Kolthoff reaction). Serum T4 and TSH were estimated using Chemi-Luminiscent immunoassay.

Results: Iodized salt usage was present in 96% of controls and 87% of cases. Median UIC, Mean serum T4 and TSH levels in controls were 150µg/dL, 93.48±28.34nmol/L and 2.37±0.97mIU/L respectively. Among 50 cases, 27 had overt hypothyroidism, 14 had sub-clinical hypothyroidism and 9 had hyperthyroidism. Median UIC was 50µg/dL in overt and sub-clinical hypothyroidism whereas300µg/dL in hyperthyroidism. Mean serum T4 levels in hyperthyroidism, overt and sub-clinical hypothyroidism were 253.77±91.12nmol/L, 40.85±9.13nmol/L and 72.42±19.75nmol/L. Mean serum TSH levels in overt and sub-clinical hypothyroidism were 18.87±8.93mIU/L and 10.37±4.03mIU/L; <0.15mIU/L in hyperthyroidism.

Conclusion: Clinico-Demographic variables (age, gender, locality, education, occupation, socio-economic status, diet, present illness) and iodized-salt usage influence the iodine and thyroid statuses.UIC correlated significantly with iodine and thyroid statuses, suggesting effective use for population screening of thyroid disorders.

Madhavi K, Kusuma Kumari M, Anil Kishore B. Evaluation of clinico-demographic profile, iodized salt usage, iodine status and thyroid profile in thyroid disorders. J Clin Sci Res 2014;3(Suppl 3): A124.

Evaluation of subclinical hypothyroidism in females belonging to reproductive age group

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Objective: To estimate and compare serum Thyroid stimulating hormone (TSH), Thyroxine (T4) and Anti-thyroid peroxidase antibodies (TPOabs) in women suspected of subclinical hypothyroidism (SCH). As evidenced by many clinical studies SCH, commonly caused by autoimmune thyroiditis, may lead to the development of overt hypothyroidism, dyslipidemia, coronary heart disease, heart failure, cardiomyopathy, obesity, diabetes, and thyroid cancer.

Material and methods: This cross-sectional study was conducted after obtaining Institutional ethical committee clearance. 78 females (20-50 years) with H/O fatigue, muscle aches, irritability and irregular menstruation suspected of SCH were included.After obtaining informed written consent from patients, 5ml of fasting blood sample was collected and serum TSH, T4 and TPOabs were estimated by Chemi-Luminiscence Immunoassay method. The results of 50 patients diagnosed with SCH were statistically analyzed using MSExcel2007.

Results: The mean age of the study subjects was 31.78±8.34years. Mean T4 was 104.46±20.06 nmol/L. Mean TSH was 6.03±1.54mIU/L. Mean TPOabs was 466.94 ±274.14IU/mL. The study showed statistically significant positive correlation between TSH and TPOabs ($r = 0.5$; $p<0.001$) and statistically significant negative correlation between T4 and TPOabs ($r = -0.4$; $P<0.01$).

Conclusion: This study suggests positive association between TPOabs and SCH. So, screening for TPOabs will be beneficial in guiding the appropriate treatment strategy in SCH patients to prevent the risk of complications.

Madhavi K, Kusuma Kumari M, Anil Kishore B. Evaluation of subclinical hypothyroidism in females belonging to reproductive age group. J Clin Sci Res 2014;3(Suppl 3): A125.

Study of insulin resistance in hypothyroid subjects

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Objective : To estimate the fasting insulin and evaluate Insulin Resistance in patients with Hypothyroidism

Material and methods: The study included 50 newly diagnosed and untreated hypothyroid patients and 50 healthy individuals in the age group of 20-40years.Subjects having diabetes mellitus, PCOD, other systemic illness,those taking medications that alter thyroid functions and lipid levels, pregnant and menopausal women were excluded. Blood samples were collected after overnight fast and centrifuged. fT3,fT4,TSH,and serum Insulin were estimated by CLIA method in Beckman Coulter Access II. Blood Glucose and lipid profile were done in all the subjects. Homeostasis model assessment for insulin resistance (HOMA-IR) (mU"mmol/liter^2) was calculated as fasting insulin (mU/liter) times fasting glucose (mmol/liter) divided by 22.5.

Results: The mean TSH of the hypothyroid cases was 19.6±14.59 as against 2.08±1.13 in the controls.The mean values of fT_3, fT_4 were decreased when compared with controls.The mean values of HOMA-IR (4.9± 3.3) were increased when compared with controls(1.3±0.37). The increase is highly significant (P<0.001)(t=7.6).Serum Insulin values were consistently higher in cases(mean 19.34±12.65) than in controls (5.38±1.48).Levels of cholesterol,LDL, Triglycerides, VLDL were increased in 90% of the cases.

Conclusion:. The observations show raised TSH, serum insulin, HOMA-IR, cholesterol, TG, LDL, VLDL levels and decreased fT_3, fT_4 ,HDL levels . Insulin resistance is seen in hypothyroid subjects.This study outlines the importance of elevated insulin resistance and dyslipidemia in hypothyroid subjects.

Sushma M, Noorain S, Naidu JN, Study of insulin resistance in hypothyroid subjects. J Clin Sci Res 2014;3(Suppl 3): A126.

Evaluation of homocysteine levels in hypothyroid patients

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Objectives: Hypothyroidism is associated with an increased risk for cardiovascular disease, which cannot be fully explained by the atherogenic lipid profile and other pathogenic factors. Plasma homocysteine is an independent risk factor for cardiovascular disease and accelerated atherosclerosis. Theaim of this study was to investigate the plasmaHomocysteinelevels and its relation with thyroid status and creatinine in hypothyroid patients.

Material and methods: This is a cross sectional study involving 22 healthy controls and 22hypothyroid patients who attended our institute during June to August 2014. Serum TSH, T3, T4, B12, Folate, Creatinine and plasma Homocysteine levels were estimated.

Results: Serum Homocysteine levels in hypothyroid patients (24.5±12.7ìmol/L) are significantly higher than in controls (15.1±4.9ìmol/L) (p = 0.003). B12 and Folate levels in patients (759.5±547pg/ml and 8.1±5.3ng/ml respectively) are significantly lower than in controls (1061.6±433pg/ml and 13.7±5.8ng/ml respectively) (p =0.049 and 0.001 respectively). Creatinine levels in hypothyroid patients (1.6 ± 0.6mg/dl) are significantly higher than in controls (1.1 ± 0.3mg/dl) (p =0.003).

Conclusion: Thyroid hormones have direct effect on Homocysteine metabolism: increased Homocysteine formation by decreasing hepaticlevels of enzymes (methylenetetrahydrofolate reductase) involved in the remethylation pathway of homocysteine to methionine, and bydecreased renal tHcy clearance. The low levels of folate and B12 also contribute to the high homocysteine in the patients. Based on this study, we suggest regular assessment of Homocysteine status in hypothyroid patients.

Mahesh Kumar P, Sai Baba KSS, Chandran PA. Evaluation of homocysteine levels in hypothyroid patients. J Clin Sci Res 2014;3(Suppl 3): A127.

Abstracts of Platform Presentations (AMBICON – 2014)

Autoimmunity: insulin resistance in thyroid hypofunction

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Objectives: Thyroid hormones are involved in metabolic regulations which are altered in thyroid hypo-function. The present study was designed (1) to find out occurrence of insulin resistance in hypothyroid patients and (2) to compare insulin resistance in sub- clinical and overt thyroid hypo-function.

Methods: One hundred eighteen patients with the diagnosis of hypothyroidism based on their clinical and thyroid function test profile were included in this cross sectional hospital based descriptive study with their informed consent. HOMA-IR as an index of insulin resistance was calculated for each subject from their fasting plasma glucose and serum insulin levels. Autoimmunity against thyroid was evaluated by estimating anti TPO antibodies.

Results: HOMA-IR as an index of insulin resistance was comparable in overt (5.8±3.24) (p=0.003) and subclinical hypothyroidism (6.27±3.87) (p= 0.001) but was above the reference range for this population. Hypothyroid anti TPO positive cases has high TSH compared to negative cases in both overt hypothyroidism and subclinical hypothyroidism.

Conclusions: Hypothyroidism induces insulin resistance but the degree of insulin resistance is not dependent on severity of thyroid hypo-function however is associated with autoimmunity against thyroid.

Jain A, Lali P, Dhanwal DK, Chandra L. Autoimmunity:insulin resistance in thyroid hypofunction. J Clin Sci Res 2014;3(Suppl 3): A128.

The effect of L – thyroxine on serum creatinine and uric acid levels in newly diagnosed hypothyroidism

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Objectives: This hospital based study was done to evaluate the kidney function changes induced in newly diagnosed hypothyroid patients and benefits of early intervention.

Material and methods: This interventional study included 40 newly diagnosed hypothyroid cases of age group 20-60 yrs, attending medicine and surgical outpatient department of HSK hospital.Study was done from April-October 2014. Serum FT3,FT4,TSH levels were measured using standard kits. Serum Creatinine was estimated by alkaline picrate method and Uric acid by uricase/POD method. Same patients were re-evaluated after 3 months of L-Thyroxine treatment.Out of 40 cases only 22 had come for follow up and their serum levels of creatinine and uric acid were re-evaluated. Informed consent was taken from cases. Ethical clearance was obtained from ethics committee. **Statistics :** All the values are expressed in Mean ± SD. p value <0.05 was considered as significant. Paired 't' test was applied.

Results: There was an increase in serum creatinine (1.52 ± 0.4) and uric acid (6.11±1.28) levels (p=0.001) in hypothyroid cases compared to euthyroid subjects. After 3 months of thyroxine replacement therapy, creatinine (0.78±0.17), and uric acid (3.57 ± 0.17) levels decreased significantly (p=0.001) and were comparable to euthyroid levels.

Conclusion: This showed that early intervention with thyroxine replacement therapy resulted in reversible change in the kidney function parameters.

Mahantesh B, Shankarprasad DS, Sangamesh K, Sunitha, Kavitha, Neela M. The effect of L – thyroxine on serum creatinine and uric acid levels in newly diagnosed hypothyroidism. J Clin Sci Res 2014;3(Suppl 3): A129.

Abstracts of Platform Presentations (AMBICON – 2014)

A study to assess the usefulness of thryroid function tests as a marker of severity of HIV: a case-control study

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Introduction: HIV has been a growing menace all over the world. Several metabolic abnormalities are associated with HIV with thyroid being very prominent.

Objective: To assess the usefulness of thyroid function tests as a marker of severity of HIV.

Methodology: Thirty HIV infected patients who appeared for their routine follow up in the ART Centre of the Bowring and Lady Curzon Hospital attached to the Bangalore Medical College and Research institute were included. These patients were subjected to their routine check-up along with their Thyroid function test and latest CD4+ counts. In patients and patients having evidence of any co infection were not included in the study. Their results were analysed and statistically compared with a controlgroup of 30 age/sex matched HIV negative subjects having normal thyroid profile.

Results: Of the 30 cases analysed 12(3.6%) had low Total T3, 10(3%) had low Total T4, 10(3%) had low TSH. There was a moderate positive correlation between Total T3/ T4 with the CD4 counts ($r = 0.673$ with $p < 0.05$ for T3 and $r = 0.546$ with $p = 0.0017$ for T4). There was a weak negative correlation between CD4 and TSH ($r = -0.460$ with the $p = 0.015$)

Conclusion: In our study the thyroid function test which was observed was the same that is found in patients having non thyroidal illness (i.e. normal or low TSH with low T3 or T4). Only one case was encountered which showed hypothyroidism. Most patients of HIV have a subclinical hypothyroid like picture which may progress to overt hypothyroidism with disease progress. Thyroid function tests could be looked as alternate markers along with patient CD4 counts to assess the severity of disease.

Sinha A, Vibha C, Vishwanth HL. A study to assess the usefulness of thryroid function tests as a marker of severity of hiv: a case control study. J Clin Sci Res 2014;3(Suppl 3): A130.

A study on altered total plasma homocysteine level in recently diagnosed hypothyroidism

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Objective: One of the major complication of hypothyroidism is Atherosclerosis and cardiovascular disease. Hyperhomocysteinemia is an important and independent risk factor for atherosclerosis. Hypothyroidism decreases hepatic levels of enzymes which converts homocysteine to methionine that leads to increase in homocysteine level in the circulation of hypothyroid individuals. The aim of the study was to assess fasting total plasma homocysteine level in recently diagnosed hypothyroidism.

Material and methods: The study included thirty recently diagnosed hypothyroid individuals, thirty treated hypothyroidism and thirty apparently healthy subjects with age and sex matched. The study group was selected after obtaining ethical committee clearance and consent from subjects attending outpatient department of Endocrinology, Madras Medical College, Chennai. Thyroid profile and Homocysteine was measured in fasting blood samples.

Results: Total plasma homocysteine levels were significantly more in recently diagnosed hypothyroidism compared to controls with p value 0.004.

Conclusion: By this study we confirmed hyperhomocysteinemia in hypothyroidism which may lead to atherosclerosis. Hypothyroidism is one of the treatable cause for hyperhomocysteinemia. In hypothyroidism estimation of total plasma homocysteine level is may be used as screening test [5] to identify and monitor cardiovascular risk

Renuka P, Amudhavalli, Ramadevi. A study on altered total plasma homocysteine level in recently diagnosed hypothyroidism. J Clin Sci Res 2014;3(Suppl 3): A131.

Abstracts of Platform Presentations (AMBICON – 2014)

The clinical utility of creatine kinase and lactate dehydrogenase as severity markers of organophosphorous compound poisoning

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Introduction: The organophosphate pesticides are the commonest means of self-poisoning.The major toxicity is due to overstimulation of acetylcholine receptor sites that leads to a variety of clinical outcomes. Few studies have focused on correlating enzyme levels with severity of acute OPC poisoning.

Objective: 1) To identify the alterations in the level of CK and LDH in OPC poisoning. 2) To correlate the levels of CK and LDH with the severity of OPC poisoning.

Material and methods: Patients presenting with features of OPC poisoning were enrolled based on predefined inclusion and exclusion criteria. The subjects were grouped into Mild, Moderate and Severe toxicity profile based on Proudfoot classification.The Lactate dehydrogenase activity was estimated by kinetic method and Creatine Kinase activity by Immunoinhibition method.

Results: A total of 60 patients [22 Mild, 26 Moderate, 12Severe] were enrolled into the study. The mean CK levels in the 3 groups were 157.8±48.8 U/L [Mild],291±75.7 U/L[Moderate] and312±53.1U/L [Severe]. Likewise the LDH levels were 266.7±29.5U/L [mild], 466.8±67.3U/L[Moderate] and 690.5±42.5U/ L[Severe].These groups were compared with controls which showed statistically significant P value (P <0.000).

Conclusion: CK and LDH levels correlate well with the severity of OPC poisoning. They are useful enzyme markers to prognosticate the outcome of OPC poisoning.

Sangeetha K, Mohandoss R, Sangeetha K, Vijayalakshmi M, Ajay V, Deepavarshini P. The clinical utility of creatine kinase and lactate dehydrogenase as severity markers of organophosphorous compound poisoning. J Clin Sci Res 2014;3(Suppl 3):A132.

Study of PT and aPTT in patients with anticoagulant rodenticide poisoning and yellow phosphorous poisoning

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Aims&Objectives:1)To evaluate PT and aPTT in patients with rodenticide poisoning. 2) To compare PT and aPTT in2types of Rodenticide poisoning.

Material and methods: 50study population of which 25 patients with yellow phosphorous poisoning and 25 patients with coumarin derivative poisoning. 25 Controls for each.

PT(Quick method**)**:Coagulation process is triggered by incubation of plasma with the optimal amount of Thromboplastin&Calcium.The time taken for formation of fibrin clot is then noted.

aPPT**:**Factors of intrinsic coagulation system are activated by incubating the plasma with optimal amount of phospholipids&surface activator.The addition of calcium ions triggers the coagulation process and the clotting time is then measured.

Results: Mean PT of the study group in coumarin poisoning was 18.24 against 13.16 in normal persons(p value=0.000),whereas mean PT of the study group in yellow phosphorous poisoning was 22.48 against 13.24 in normal persons(p value=0.000).Mean aPTT of the study group in coumarin poisoning was 36.4 against 25.96 in normal persons (p value=0.000) whereas mean aPTT of the study group in yellow phosphorous poisoning was 38.12against 26.92in normal persons(p value=0.000).The rise of PT and aPTT in patients with Yellow phosphorus poisoning was found to be more than that in patients with Coumarinpoisoning,but there is no statistically significant correlation between the two.

Conclusion: Coumarin mainly inhibit the activation of Vitamin K dependent clotting factors II,VII,IX, and X resulting in the prolongation of PT and aPTT.Yellow phosphorous directly affect liver and cause Acute Fulminant Hepatitis which affects clotting mechanism due to impaired synthesis of many clotting factors.So,increase in PT and aPTT levels in patients with the yellow phosphorous poisoning is morewhen compared to those in patients withcoumarinpoisoning.Coumarin poisoningcan be treated with vit.k by monitoring PT and aPTT.

Alphonsa SJ, Beegum S. Study of PT and aPTT in patients with anticoagulant rodenticide poisoning and yellow phosphorous poisoning. J Clin Sci Res 2014;3(Suppl 3):A133.

Abstracts of Poster Presentations (AMBICON – 2014)

Biochemical Pearl - A case report of congenital erythropoietic porphyria

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Introduction: Congenital Erythropoietic Porphyria (CEP) or Gunther's disease is a rare autosomal recessive disorder of heme metabolism with an incidence of 1 in 2-3 million with less than 300 cases reported worldwide. Patients have mutations in UROS gene that decreases UROS (Uroporphyrinogen III Synthase) activity leading to accumulation of isomer I series of porphyrins in the body. This usually presents in infancy or early childhood and rarely delayed to early adulthood.

Case History: 25year old male presented with blisters and burning sensation all over the body. Patient was apparently normal at birth and at 8years of age on exposure to sunlight blisters developed over scalp and face which then spread to other parts of the body.There were multiple erosions and crustations over the exposed parts of the body.Resorption and mutilation of fingers, nose and ears were seen.Hypertrichosis was present over face, trunk, forearm and legs.Brownish discolouration of teeth was noted,

Biochemical Investigations: 1. Urine and blood showed fluorescence in Wood's light indicating the presence of Uroporphyrins and Copro porphyrins. 2. Fluoroscence of the teeth was seen on exposure to Wood's light (Erythrodontia). 3. Column chromatography was done to estimate Porphobilinogen, 5aminolevulinic acid and Total porphyrins. PBG 0.93mg/day (<3.4mg/day), 5ALA 1.23mg/day(1.50-7.50mg/day)Total porphyrins 379microgms/day (<150micrograms/day).PBG and 5ALA was normal and Total porphyrins was elevated.CBC, LFT, RFT,USG Abdomen and peripheral smear were normal. Though Porphyria Cutanea Tarda also has increased urine total porphyrins, the onset is in the 5^{th} or 6^{th} decade and there is only facial hypertrichiosis.

Conclusion: The typical clinical features, positive baseline biochemical screening tests and elevated Urine Total porphyrins are suggestive of CEP.

Geetha SMR, Ramadesikan VK. A case report of congenital erythropoietic porphyria. J Clin Sci Res 2014;3(Suppl 3):A134.

Primary haemostatic disorders

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Objective: Primary hemostatic disorders are largely characterized by immediate mucocutaneous bleeding after injury with disproportionate amount of bleeding compared to the degree of the injury. Delayed bleeding is more characteristic of a coagulation type defect, which is of the secondary variety. Platelet function tests are diagnostic for primary disorders.

Material and methods: Over the past 6 months, 6 cases (2 -11 years of age) were referred for platelet dysfunction. Samples were assayed on Multiplate Analyzer (Roche) using Impedance Aggregometry on whole blood with Hirudin as an anticoagulant. Ex-vivo platelet aggregation was induced by Ristocetin, Adenosine diphosphate, Collagen and Thrombin receptor activating peptide-6 (agonists).

Results: 4 cases showed altered response to platelet agonist which was done after a normal coagulation screen. 3 cases were of Glanzmann's Thrombasthenia and one case had a provisional diagnosis of ?Storage Pool Disease.

Conclusion: Glanzmann's Thrombasthenia is a rare congenital disorder characterized by mutations in the Integrin alpha 2b or beta 3 genes, causing qualitative or quantitative abnormalities of integrin alpha 2B or beta 3, leading to mucocutaneous bleeding with variable clinical manifestation. The pattern of response concluded to be Glanzmann's Thrombasthenia.

Storage pool disease is a congenital platelet disorder characterized by a reduction in the dense granules like adenosine diphosphate, serotonin, calcium and pyrophosphate, secreted by activated platelets.

Naidu KS, Sushma A, Phatale R, Srikanth P. Primary haemostatic disorders. J Clin Sci Res 2014;3(Suppl 3): A135.

Abstracts of Poster Presentations (AMBICON – 2014)

Evaluation of the cytotoxic potential of *Momordica Charantia* using colon and cervical cancer cells in culture

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Objectives: To study the cytotoxic activity of ethanolic extract of *Momordica Charantia* whole fruit against cell lines representing carcinomas of colon and cervical.

Material and methods: Cancer cell lines (HCT 116, HeLa) were procured from National Center for Cell Sciences (NCCS), Pune and cultured in DMEM supplemented with 10% FBS and 1 mM L-glutamine. *Momordica Charantia* ethanolic extract (MCE) was prepared by graded ethanol fractionation method and the total phenol content determined using Folin-Ciocalteau assay. For cytotoxicity studies, 5000 cells in 100 µl DMEM-10% FBS medium were seeded in a 96 well plate; and treated with increasing concentration of MCE. Efficacy of MCE was determined by measuring the cell number using sulforhodamine B assay. Percentage decrease compared to DMSO vehicle control was determined and IC50 values calculated using Prism software.

Results: The total phenolic content of ethanolic extract of *Momordica Charantia* decreased with increasing ethanol concentration from 50% to 100%. Cytotoxicity studies identified 50% ethanolic extract as the most active fraction. A time and dose dependent increase in the efficacy of 50% ethanolic extract for inhibiting cancer cell growth was noticed.

Conclusion: The presence of high total phenolic acid content in 50% ethanolic extract indicates that the anti-cancer activity of *Momordica Charantia*could be due to these secondary metabolites. Hence, *Momordica Charantia*may represent a novel therapeutic fruit for the treatment of colon and cervical cancer.

Prashant V, Akila P, Subba Rao MVSST, Parveen D, Suma MN, Shobha CR. Evaluation of the cytotoxic potential of *Momordica Charantia* using colon and cervical cancer cells in culture. J Clin Sci Res 2014;3(Suppl 3):A136.

Study of lipid profile in carcinoma breast patients

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Objective: To evaluate the lipid profile (serum triglyceride, total cholesterol, LDL cholesterol, HDL cholesterol, VLDL cholesterol) in carcinoma breast patients and to compare it with age related healthy controls.

Material and methods: This was a cross sectional study conducted in the department of Biochemistry and Surgery, Pt B D Sharma, PGIMS, Rohtak. Fifty diagnosed patients of carcinoma breast and fifty age matched healthy females as controls were enrolled after informed consent and their fasting serum samples were analysed for serum triglyceride, total cholesterol and HDL cholesterol levels by enzymatic methods in autoanalyser and LDL cholesterol and VLDL cholesterol levels were calculated (Friedwald's formula).

Results: The mean levels of triglyceride, total cholesterol, HDL cholesterol, LDL cholesterol and VLDL cholesterol in patients were 121.52±55.99, 160.880±47.06 mg/dL, 47.28±23.47 mg/dL, 96.20±32.62 mg/ dL, 23.92±11.49mg/dL respectively. The serum triglyceride, total cholesterol, HDL cholesterol and VLDL cholesterol levels were significantly higher ($p<0.05$) in breast carcinoma patients as compared to the control group while LDL cholesterol levels did not correlate significantly ($p>0.05$).

Conclusion: This study demonstrates increased levels of serum triglycerides, total cholesterol, HDL cholesterol and VLDL cholesterol in carcinoma breast patients suggesting that dyslipidemia may have role in occurrence of the disease. Thus, proper measures to maintain lipid profile within normal range in the body (dietary modifications, exercise, lipid lowering drugs etc) may decrease the incidence of the disease.

Dixit D, Seth S, Bala J, Ghalaut VS, Nityasa. Study of lipid profile in carcinoma breast patients. J Clin Sci Res 2014;3(Suppl 3):A137.

Abstracts of Poster Presentations (AMBICON – 2014)

Neutrophil gelatinase-assosciated lipocalin (NGAL) levels in head and neck carcinoma

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Objective: Neutrophil gelatinase-associated lipocalin (NGAL), also known as lipocalin 2, is a 25-kDa acute phase protein. It plays a significant role in generating innate immune response and safeguards against bacterial infections by sequestering iron. Recently, it has emerged as a biomarker for several benign and malignant diseases with its differential expression pattern. 5 year survival rate of head and neck cancer (HNC) is only 50%. So, there is an urgent need for the development of novel biomarkers for early diagnosis of this fatal disease. Therefore we planned to estimate NGAL levels in HNC.

Material and methods: The study population included 50 adult head and neck cancer patients reporting in outpatient department at Regional Cancer Center, Pt B D Sharma, UHS, Rohtak and compared with 50 healthy controls. NGAL was estimated by sandwich ELISA technique.

Results: Patients with HNC exhibited significantly increased levels of NGAL ($P < 0.001$) as compared to healthy controls. Different levels of NGAL were found according to different staging of HNC.

Conclusion: Our analysis demonstrates a potential role of NGAL as cancer biomarker and may be useful in monitoring the HNC progression.

Bansal A, Verma M, Dahiya K, Ghalaut VS, Soni A. Neutrophil gelatinase-assosciated lipocalin (NGAL) levels in Head and neck carcinoma. J Clin Sci Res 2014;3(Suppl 3): A138.

In vitro anticancer activity of *Piper Nigrum* extract against colorectal cancer cell lines

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Objectives: To study the cytotoxic activity of ethanolic extract of *Piper nigrum* seeds against cell lines representing carcinomas of colon and rectum.

Material and methods: Colorectal carcinoma cell lines (HCT 116, HT29 and Caco2) were procured from National Center for Cell Sciences (NCCS), Pune, and cultured in DMEM supplemented with 10% FBS and 1 mM L-glutamine. *Piper nigrum* ethanolic extract (PNE) was prepared by graded ethanol fractionation method and the total phenol content determined using Folin-Ciocalteau assay. For cytotoxicity studies, first 5000 cells in 100 µl DMEM-10% FBS medium were seeded in a 96 well plate; and, next, treated with increasing concentration of PNE. Efficacy of PNE was determined by measuring the cell number using sulforhodamine B assay. Percentage decrease, compared to DMSO vehicle control, was determined and IC50 values calculated using Prism software.

Results: The total phenolic content of ethanolic extract of *Piper nigrum* decreased with increasing ethanol concentration from 50% to 100%. Cytotoxicity studies identified 50% ethanolic extract as the most active fraction. A time and dose dependent increase in the efficacy of 50% ethanolic extract for inhibiting colorectal carcinoma cell growth was noticed.

Conclusion: The presence of high total phenolic acid content in 50% ethanolic extract indicates that the anti-cancer activity of *Piper nigrum* could be due to these secondary metabolites. Hence, Piper nigrum may represent a novel therapeutic spice for the treatment of colorectal cancer.

Akila P, Subba Rao MVSST, Chandini R, Suma MN, Devananda D, Prashant V. *In vitro* anticancer activity of Piper Nigrum extract against colorectal cancer cell lines. J Clin Sci Res 2014;3(Suppl 3):A139.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of lipid profile in different stages of breast cancer

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Introduction: Breast cancer is one of the most common cancer in women of developed anddeveloping countries.Breast cancer in women has shown an increased prevalence worldwide.Lipids are essential to carry out several vital physiological functions. Lipids might beassociated with cancersbecause they play a key role in the maintenance of cell integrity. The pathway for cholesterolsynthesis may also produce various tumorigenic compounds and cholesterol serves as aprecursor for the synthesis of many sex hormoneslinked toincreased risk of various cancers.In some malignant diseases, blood cholesterol undergoes early andsignificant changes.The mechanism for the link between cancer and cholesterol remains controversial.

Objectives: To identify whether there is an association betweenalterations in lipid profile incarcinoma breast. To investigate possible role of these parameters in breast cancer.

Material and methods: Present study has conducted in Department of Biochemistry of Dr. V.M.G.M.C, Solapur from Jan 2014 to July 2014. Age-matched healthy subjects visiting Shri C.S.M.General Hospital, Solapur for medical fitness before medical board are selected as control.Total cholesterol, HDL-cholesterol and Triglycerides weremeasured on fasting blood sample of healthy controls and patients admitted in surgical wardbystandard kit methods and LDL cholesterolwas calculated using Friede Wald's formula.

Results: Plasma TC, LDL and Triglycerides were significantly higher ($p<0.05$) in breast cancer patients as compared with controls. Whereas HDL cholesterol doesnot show any significant changes (P Value 0.790).

Conclusion: This study concluded that breast cancer patients have significant lipid abnormalities where TC, TG& LDL are raised. These abnormalities could have possible role as risk factor for breast cancer.

Shingarwad SS, Sawant SD. Deshpande KH. Study of lipid profile in different stages of breast cancer. J Clin Sci Res 2014;3(Suppl 3):A140.

Mining hidden metabolite patterns in oncology patients from 'big data'

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Objective: A laboratory receives multiple requests for metabolic panels on an individual to assess metabolic disturbances. Interpretation depends on univariate comparisons with defined reference intervals. Though variation of reference intervals across populations is well known, standard guidelines for Indian reference values are absent. Biochemical values being a numerical continuum have the potential to offer more information on the status of the disease rather than an unfortunate simplified model of "normal", "high" or "low".

Therefore the objective was to uncover hidden data patterns by using multivariate statistics on liver function test, renal function test, plasma glucose and serum uric acid in oncology patients in their first outpatient visit to a tertiary cancer care center

Material and methods: Data was collected by querying the hospital electronic database from January 2012 to July 2014. Data from 373 patients was included. Hierarchical cluster analysis and principal components analysis were performed.

Results: Hierarchical clustering separated the parameters into 5 major metabolite groups. Principal components analysis on the dataset revealed 6 latent factors which explained 75% of the variation. The componentscould be grouped into similar metabolite groups such as 'Hepatic', 'Electrolyte', 'Excretory', 'Hepatobilliary', and 'Glucose exchange'. Variation of the pattern was noted on basis of gender, age group and hematologic malignancies.

Conclusion: This study shows the prospects of utilizing multivariate approaches to mine data in Clinical Biochemistry to unearth hidden metabolite patterns in cancer.

Chakraborty S, Sinha S. Mining hidden metabolite patterns in oncology patients from 'big data', J Clin Sci Res 2014;3(Suppl 3): A141.

Abstracts of Poster Presentations (AMBICON – 2014)

Biochemical profile and agarose gel electrophoresis in a multiple myeloma patient visiting SCSSR, Solapur

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Introduction: Multiple myeloma is a proliferative disease of plasma cell resulting in secretion of a specific and unique monoclonal immunoglobulin. The incidence of disease increases with age.

Objective: To study the different biochemical parameters and serum Agarose gel electrophoresis pattern in a patient consistent with clinical symptoms of multiple myeloma.

Material and methods: A 80 years old female came with chief complain of scalp swelling, left ear discharge and deafness. The case was reviewed for biochemical investigations in department of Biochemistry, Dr.V.M.G.M.C, Solapur. Biochemical profile, Bence Jones protein, X-ray of skull was carried. Agarose gel electrophoresis was performed.

Results: Serum electrophoresis pattern in patient showed M-protein band (M-band) as gamma region.Bence Jones was present in urine. Plasma cells seen on cytological examination and lytic lesion on skull were present.

Conclusion: Electrophoretic pattern showed M-band in this patient giving confirmatory of diagnosis.

Mehraj J, Swati S, Atul P. Biochemical profile and agarose gel electrophoresis in a multiple myeloma patient visiting SCSSR, Solapur. J Clin Sci Res 2014;3(Suppl 3): A142.

Evaluation of serum levels of NGAL/MMP-9 complex as biomarker for diagnosis of ovarian cancer

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Introduction: Current strategies for detection of epithelial ovarian cancer (sixth most common cancer) are based on biochemical markers like Carbohydrate Antigen 125 (CA125) and imaging techniques, which are having low sensitivity and specificity. Many proteins including Neutrophil gelatinase-associated lipocalin (NGAL), Matrix metalloproteinase-9 (MMP-9) are being evaluated as screening markers for detection of ovarian cancer has been evaluated in this study.

Material and methods: This hospital based case control study was conducted in the Departments of Biochemistry in collaboration with Obstetrics & Gynecology, Maulana Azad Medical College and Lok Nayak Hospital, New Delhi, including 30 malignant ovarian cancer patients, 30 benign ovarian tumors and 30 healthy controls were enrolled with their consent.After detailed history and clinical evaluation, blood samples were drawn for estimation of various biochemical parameters namely fasting plasma glucose, serum LFT, KFT, Lipid Profile, Insulin, CA-125 and NGAL/MMP-9 Complex by standard methods.

Results: Mean age of healthy controls, benign ovarian and malignant ovarian cancers were 48.5, 43.6 and 50.1 years respectively. The median of serum CA-125 levels in healthy controls - 12.6 u/ml, in benign ovarian conditions - 209.6 u/ml and in malignant ovarian conditions - 1619.6 u/ml. Using Kruskal Wallis test the levels were statistically significant (<0.001). The median of serum NGAL/MMP-9 complex levels in healthy controls - 29.2ng/ml, in benign ovarian conditions -53.7 ng/ml and in malignant ovarian conditions - 67.5ng/ml. Using Kruskal Wallis test the levels were statistically significant (<0.001).

Conclusion: This study provides evidence that serum levels of CA-125 were increased in ovarian cancers along with NGAL/MMP-9 Complex levels, which increases sensitivity and specificity together and may be used as new biomarker.

Gupta RK, Kaushik S, Gupta SK, Tripathi R. Evaluation of serum levels of NGAL/MMP-9 complex as biomarker for diagnosis of ovarian cancer.J Clin Sci Res 2014;3(Suppl 3): A143.

Abstracts of Poster Presentations (AMBICON – 2014)

Tumor marker for pancreatic cancer: CAM 17.1, a promising new marker and an option beyond CA19.9

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Background: The difficulty in an early diagnosis of pancreatic cancer is due to absence of early symptoms and lack of economical imaging techniques. Hence diagnosing and monitoring of pancreatic cancer is an ongoing challenge. Neoplastic transformation of epithelial cells is commonly associated with altered synthesis and structure of mucin glycoproteins. Currently CA19.9 is the widely used conventional marker but its role in detecting early cancer is limited due to its lack of sensitivity.

Introduction: CAM 17.1 is an antimucin antibody (IgM) valuable in diagnosis of pancreatic cancer. Its epitope is characterized to be a sialyted blood group antigen. CAM 17.1 is a monoclonal antibody that detects a mucus glycoprotein with high specificity for intestinal mucus in colon small intestine, biliary tract and pancreas.

Method of Assay: Enzyme linked antibody sandwich assay (CAM 17.1/WGA)

Characteristics: This monoclonal antibody is weakly expressed on normal ductal cells and in chronic pancreatitis, whereas it is overexpressed in pancreatic cancer. This marker was found to have higher performance characteristics even in pancreatic cancer patients without jaundice unlike that of CA 19.9. The sensitivity and specificity of CAM 17.1 is 67% and 90% respectively for pancreatic cancer whereas the sensitivity and specificity of CA 19.9 is 67% and 76% respectively for pancreatic cancer.

Conclusion: If CAM 17.1 is used in conjunction with USG abdomen, the marker identifies 100% of pancreatic tumors. Thus it appears to be a promising marker in evaluation of patients with pancreatic cancer.

Deepthi M, Murgood R, Raghavendra DS. Tumor marker for pancreatic cancer: CAM 17.1, a promising new marker and an option beyond CA19.9. J Clin Sci Res 2014;3(Suppl 3): A144.

A study to evaluate immunoglobulin's fraction by serum protein electrophoresis (CAE) for the occurrence of multiple myeloma in a tertiary care hospital

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Background: Serum protein Electrophoresis (SPE) is a diagnostic laboratory test that separates and quantifies several classes of serum proteins and that identifies and characterizes the monoclonal gammopathies (M-protein). M proteins are indicative of plasma cell malignancies like Multiple myeloma, Waldenstrom's macroglobulinemia etc.

Objectives: To evaluate the Immunoglobulin fractions inSerum Protein Electrophoretic (SPE) pattern. Relevance and significance of M band in the clinical diagnosis.Morbidity of the cases in relation to its clinical diagnosis

Materials and Method: This study was carried out by analyzing data with M band (95) from the samples requested for SPEby cellulose acetate method during Sept 2013 to Aug 2014 in the St. John's Medical College biochemistry lab, Bangalore. Densitometrically estimated M proteins were further divided into 2 groups of below and above 3gm/dl.

Result: Out of 95 cases 55(57.9 %) were above 3gm/dl, and the remaining 40(42.1%) were below 3gm/dl. Among those 95 cases 18 were confirmed with MultipleMyeloma.The gamma globulins which were above 4gm/dl (10 out of 18) were found to be highly correlative for Multiple myeloma. Only 3 cases out of the 18 had been confirmed for Multiple myeloma with their gamma globulins falling between 3 to 4gm/dl.

Conclusion: SPE is an easy to perform laboratory test for detection and quantification of monoclonal gammopathies. Even though cellulose acetate is not a gold standard method, but still it can be used as an important tool in the diagnosis of M band.

Rashni BJ, Sharma BK, Furruqh S. A study to evaluate immunoglobulin's fraction by serum protein electrophoresis (CAE) for the occurrence of multiple myeloma in a tertiary care hospital. J Clin Sci Res 2014;3(Suppl 3):A145.

Abstracts of Poster Presentations (AMBICON – 2014)

Role of T3 as biomarker in prostate carcinoma

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Introduction: Many prostate cancers are quite indolent and may never cause a problem but it is impossible to identify such tumors with certainty. Prostate specific antigen levels have been used in screening large populations of men for prostate cancer and have been shown to be useful but lack specificity. Thus Urologists are actively seeking additional biomarkers of prostate cancer aggressiveness. Triiodothyronine is necessary for the growth of prostate cancer cells in vitro and has been shown to be an important regulator of growth and differentiation in many cell types, its effect on prostate cells are not well understood. Headlan et al. have suggested that T3 is critical for supporting the growth of prostatic carcinoma cells. Thus this study was undertaken to analyze the relationship between T3 levels to PSA levels in patients with prostate cancer and BPH.

Material and methods: 25 biopsy proven patients with BPH and localized prostate adenocarcinoma each along with 25 age matched healthy controls were included in this study. Serum PSA and T3 levels were estimated quantitative sandwich immunoassay [ELISA] in all the study subjects.

Results: We found asignificant difference ($p<0.001$) in T3 levels in men with localized prostate adenocarcinoma and BPH compared to normal controls. While there was no significant difference in T3 levels in men with localized prostate cancer or benign prostatic hyperplasia.

Conclusion: Future studies that focus on the interrelationship between these hormones may provide an interesting outlook on prostate carcinogenesis.

Kowsalya R. Role of T3 as biomarker in prostate carcinoma. J Clin Sci Res 2014;3(Suppl 3):A146.

Role of CA19-9 in case of carcinoma gall bladder

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OBJECTIVE: Gall bladder cancer is a highly aggressive malignancy that usually presents at an advanced incurable stage. In India, GI tract cancer is one of the ten leading cancers. Among Indian males it stands second to oral cancer and in females it shares the third place along with oral cavity cancer first two being cervix and breast cancer, and the incidence steadily increases with age. The overall 5-year survival reported in large reviews and surveillance programs is consistently less than 5 percent, with a median survival of 5 to 8 months. This study was done to see the prevalence of carcinoma gallbladder in Bihar and to diagnose this disease earliest by an noninvasive method and reduce mortality rate from this fatal disease.

METHODOLOGY: This study was done on fifty new cases of carcinoma gall bladder diagnosed on thebasis of clinical examination and ultrasonography report.Fifty normal healthy persons of similar age and sex group was taken as control. Liver function test, hematocrit and serum CA 19-9 was done on fasting blood sample. CA 19-9 was estimated by chemiluminesence immunoassay method. Levels of above parameters of cases were co-related with that of controls.

RESULT: Statistical analysis of case and control group result was done. Serum bilirubin, SGPT and CA19-9 was found significantly higher in cases than control group.

CONCUSION: This study can help in early diagnosis of gall bladder carcinoma which will help to reduce morbidity and mortility rate due to this disease.

Kumar U, Kumari R, Saran A, Keshari JR, Haque SS, Kumari B, Prasad I. Role of CA19-9 in case of carcinoma gall baldder. J Clin Sci Res 2014;3(Suppl 3): A147.

Abstracts of Poster Presentations (AMBICON – 2014)

Role of ascitic fluid cholesterol and serum-ascites cholesterol gradient in diagnosis of malignancy

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Objective: The differential diagnosis of ascites is being a common problem faced by the clinicians in a case of unknown etiology. There are various invasive, expensive and time-consuming methods used to solve this issue. This case study will show us the diagnostic importance of the concentration of ascitic fluid cholesterol and the serum-ascites cholesterol gradient in a case of ascites of unknown etiology.

Material and methods: The ascitic fluid of volume of about 50 ml was obtained from the patient by the clinicians in the ward and about 2 ml of blood was drawn in the lab. The concentration of the serum and ascitic Total Cholesterol were measured by CHOD-POD method.

Results: The ascitic fluid cholesterol was 82mg/dl and the serum-ascites cholesterol gradient was 94mg/dl which was highly significant of malignant ascites.

Conclusion: The cut-off value of ascitic fluid cholesterol is 70 mg/dl and serum-ascites cholesterol gradient is 65mg/dl. Since the values are above the cut-off levels, the ascites is diagnosed to be of malignant origin. In view of its high specificity and diagnostic efficacy and being a cheap and fast method, the estimation of ascitic fluid cholesterol concentration and serum-ascites cholesterol gradient is being looked upon now-a-days by the clinicians as a very eminent method in diagnosis of malignant etiology of ascites.

Vasanthan M. Role of ascitic fluid cholesterol and serum-ascites cholesterol gradient in diagnosis of malignancy. J Clin Sci Res 2014;3(Suppl 3): A148.

Serum prolactin level in patients with ischaemic stroke

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Objective: Study was aimed to investigate whether there was any relation between serum prolactin level andischemic stroke and whetherprolactin had a role in etiology of ischemic stroke.

Materials and methods: Total 37male patients with the diagnosis of acute ischemic stroke and 43 age matched male controls with no past history of ischemic vascular dis-ease were included in the study. These patients were admitted in Govt. Medical College and Hospital, Nagpur with diagnosis of acute ischemic cerebrovascular stroke. Serum prolactin level was measured within 24 hours of admission, after 12 hours of fasting and compared with that of control group. Serum prolactin was measured by sandwich ELISA method using ELISCON PRL Kit.

Result: Significantly higher serum prolactin level was found in patients of ischemic stroke as compared to controls. Mean prolactin level in patient and control group was 10.8 ng/ml and 6.4 ng/ml respectively (p value < 0.01).

Conclusion: Prolactin is a newly recognized platelet stimulator. It potentiates ADP-induced platelet aggregation.Platelet aggregation plays an important role in thrombus formation. This study concludes that hyperprolactinemia might be considered as an important risk factor for ischemic stroke; mediatingits thrombogenic effect through enhanced platelet reactivity. Further studies are required to assess its role in prognosis of ischemic stroke.

Tripathi SK, Muddeshwar MG. Serum prolactin level in patients with ischaemic stroke. J Clin Sci Res 2014;3(Suppl 3): A149.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of serum electrolytes in acute stroke patients

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Objective: Stroke is defined as abrupt onset of neurological deficit that is attributable to a focal vascular cause. Electrolyte disturbances in stroke can lead to complications such as seizure or death. The present study is to evaluate the alteration in serum electrolyte status in acute stoke patients.

Material and Methods: 50 acute stroke patients (25 hemorrhagic and 25 Ischemic) and 30 age and sex matched healthy controls were taken in the study. Serum Sodium, Potassium, Chloride and Calcium were estimated by ISE (ion selective electrode) method. The study excludes pregnant women, patients with kidney disease, diabetes mellitus, obese patients, persons receiving medication like diuretics, patients with convulsive disorder, liver disease, and heart disease.

Results: The study shows that in acute stroke patients the serum level of sodium was found to be significantly lower showing $p < 0.05$ and the incidence of hyponatremia was found more in Hemorrhagic groups as compared to Ischemic groups. Other electrolytes like potassium, chloride & calcium did not show any significant changes showing $p > 0.05$.

Conclusion: From the above study it was concluded that hyponatremia was a common finding in acute stroke patients. So it is concluded that in any stroke patients the estimation of serum electrolytes manly sodium should be done so that early intervention can be done and the further complications can be prevented.

Panda M, Mandal MK, Das UK, Acharya M, Bhoi S, Pradhan DP, Sahu R. Study of serum electrolytes in acute stroke patients. J Clin Sci Res 2014;3(Suppl 3): A150.

Study of serum uric acid levels in chronic kidney disease

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Objectives: The prevalence of chronic kidney disease (CKD) continues to increase worldwide. This is alarming considering that CKD is an irreversible condition and patients who progress to chronic kidney failure have reduced quality of life and high mortality rates. It is imperative to identify modifiable risk factors to develop strategies to slow CKD progression. One such factor is hyperuricemia. Recent observational studies have associated hyperuricemia with kidney disease. In addition, hyperuricemia is largely prevalent in patients with CKD.

Materials and methods: Subjects were known patients of chronic kidney disease attending Department of Nephrology, King George Hospital Visakhapatnam. Controls were age and sex matched healthy individuals. Serum uric acid was estimated by Uricase method.

Results: Uric acid levels in chronic kidney disease patients were elevated statistically with $p < 0.001$. In female patients uric acid value was 8.7±2.3 mg/dl when compared to controls 4.7±1.1 mg/dl. In male patient's uric acid levels was 8.9±1.6 mg/dl when compared to 5.5±1.4 mg/dl in controls.

Conclusion: Uric acid is clearly a marker for CKD as it is predominantly cleared by the kidneys and is elevated with fall in GFR. There is mounting evidence for uric acid as a secondary if not a primary contributor to CKD and its progression. Data from experimental studies have shown several potential mechanisms by which hyperuricemia may contribute to the development and progression of CKD. Uric acid is likely an important mediator in the development of hypertension, a critical risk factor and accelerator of CKD and may contribute to cardiovascular disease and diabetes. The preponderance of epidemiological evidence suggests a direct link between uric acid and CKD but there is a need for clinical trial evidence before comprehensive management guidelines can be contemplated.

RajKumari DMM, Sridevi C, Sowjanya UVPU. Study of serum uric acid levels in chronic kidney disease. J Clin Sci Res 2014;3(Suppl 3): A151.

Abstracts of Poster Presentations (AMBICON – 2014)

Serum zinc levels, depression and malnutrition in haemodialysis patients

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Background: A significant number of chronic hemodialysis (HD) patients suffer from depression which is associated increased morbidity and mortality in them. Hemodialysis patients are at risk of deficiency of trace elements like zinc. Zinc deficiency is associated with depression in the general population and accumulating evidence suggests a relationship between depression and serum zinc levels in HD patients also.

Objectives: 1)To find out the prevalence of depression in hemodialysis patients. 2) To determine the relationship between depression and serum zinc levels and malnutrition in HD patients.

Materials and methods: A cross sectional study was conducted on 30 hemodialysis patients and 30 healthy controls. Serum zinc, hemoglobin and albumin (nutritional status indicator) levels were analyzed. Depression was assessed by using the Beck depression inventory scoring system. Appropriate statistical analysis was done.

Results: Prevalence of depression in hemodialysis patients was 40%. Serum zinc (52.33±11.14µg/dl vs 83.8±18.12µg/dl) and albumin levels (3.69±0.39gm/dl vs 3.95±0.37 gm/dl) were significantly decreased in HD patients when compared to the controls (p-value < 0.05) and had a significant positive correlation (r-value = 0.9). Significant negative correlation was found between serum zinc levels and severity of depression in HD patients (r-value = - 0.87, p-value < 0.01).

Conclusion: A high prevalence of depression was found in HD patients. Depression was also significantly associated with serum zinc levels and malnutrition. Results show that zinc deficiency may have a role in the pathogenesis of depression in HD patients for which zinc supplementation may be useful.

Sudha R. Serum zinc levels, depression and malnutrition in haemodialysis patients. J Clin Sci Res 2014;3(Suppl 3):A152.

Study of thyroid status in patients with chronic kidney disease

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Introduction: Chronic Kidney Disease (CKD) is a worldwide health problem with an increasing incidence and prevalence. CKD is associated with a variety of endocrine disturbances among which thyroid dysfunction is most common. This is probably due to reduced circulating hormone levels, altered binding of hormone to carrier protein or due to reduced peripheral metabolism of hormone. Thus this study is carried out to know the thyroid hormone level in CKD.

Objective: To study the prevalence of thyroid dysfunction in CKD patients.

Material and methods: 50 patients with CKD admitted to Institute of Nephro Urology, Victoria Hospital Campus, Bengaluru were selected using random sampling method. Thyroid hormone levels were measured by immunoassay technique in Beckman Coulter Access-2.

Results: Statistical analysis was carried out using Microsoft Excel. Values were reported as Mean ± SE of mean. The difference between groups was compared by student 't' test .Pearson's correlation was applied to test for association between variables. p value < 0.05 was considered statistically significant. The mean age was 45.62± 13.60 years. The mean Creatinine levels were 91.17mg/dL, Urea was 5.43mg/dL, Total T3 was 1.07± 0.06 ng/mL, Total T4 was 63.92± 3.46 nmol/L and TSH was 23.91±2.3 IU/mL. Distribution of Thyroid dysfunction showed that number of patients with low T3 syndrome progressively increased with the severity of renal failure.

Conclusion: CKD is associated with marked abnormalities of thyroid hormone. It does not indicate a state of hypothyroidism, but a reflection of the state of a chronic illness/malnutrition. The low T_3 state of CKD can be viewed as being protective, promoting conservation of protein.

Jayanthi PR, Maruthi Prasad BV, Vishwanath HL. Study of thyroid status in patients with chronic kidney disease. J Clin Sci Res 2014;3(Suppl 3):A153.

Abstracts of Poster Presentations (AMBICON – 2014)

Association of serum gamma-glutamyl transferase with lipid abnormalities in end stage renal disease

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Objectives: End stage renal disease (ESRD) is characterized by high degree of mortality and cardiovascular complications. These complications occur due to many metabolic and endocrinal disturbances. Among these disturbances dyslipidemia is the constant feature of ESRD. In ESRD, oxidative stressis considered as the final pathway mediating cardiovascular damage. There is evidence thatGamma Glutamyl Transferase (GGT) plays very important role in antioxidant defense system. Hence dyslipidemia and oxidative stress are predominant features of ESRD, which in long term predispose to cardiovascular complications. Objectives of our study were to estimate and to correlate lipid profile and GGT levels in ESRD patients on hemodialysis and healthy controls.

Material and methods: A case control study was conducted in patients attending Nephrology unit of hospital. After obtaining informed consent, 47 patients who are clinically and biochemically diagnosed of End stage renal disease between 25-80 yrs of age who were undergoing hemodialysis were included as cases. 61 age and sex matched normal healthy volunteers from hospital staffs or patient attenders were included as controls. Serum Lipid profile and GGT was estimated in all the study groups.

Results: Mean values of serum Total cholesterol, Triglycerides, LDL and GGT were significantly ($p<0.001$) elevated in ESRD patients on hemodialysis. Serum HDL was significantly ($p<0.001$) decreased in patients when compared to controls. We did not find any significant association of GGT with lipid parameters.

Conclusion: ESRD is associated with dyslipidemia and oxidative stress which predispose to adverse cardiovascular complications. However in our study no significant correlation between GGT levels and lipid parameters was observed. Hence study with large sample size would help in making appropriate conclusion.

Sowmi R, Sumathi ME, Shashidhar KN, Raghavendra Prasad BN, Sumathi ME. Association of serum gamma-glutamyl transferase with lipid abnormalities in end stage renal disease. J Clin Sci Res 2014;3(Suppl 3):A154.

Correlation between thyroid status and hsCRP in chronic kidney disease patients undergoing dialysis

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Objectives: Inpatients with end-stage renal disease, low plasma triiodothyronine (T3) may be an unsuspected expression of the inflammatory state of these patients. The aim of the study is to evaluate relationship between hsCRP and T3 in peritoneal dialysis and haemodialysis patients.

Material and methods: A total of 33 CKD patients are included in the study, among which 20 patients are on haemodialysis,13 patients are on peritoneal dialysis.Serum T3,T4, TSH and hsCRPare estimated.Pearson's correlation is used to assess the relationship between parameters.

Results: The mean of T3 and hsCRP values in HD and CAPD are (T3=1.5nmol/L and 1.3nmol/L), (hsCRP=34mg/L and 35mg/L) respectively. hsCRP showed negative correlation with T3 (r=-0.4367,p=0.0542) in patients on HD which was significant, whereas in patients on CAPD, hsCRPshowed a positive correlation with T3(r=0.2078,p=0.517), but it is not statistically significant.

Conclusion: Chronic kidney disease (CKD) causes alterations in thyroid in the absence of an underlying intrinsic thyroid disorder, known as syndrome ofnonthyroidal illness with a low T3 and a normal TSH and T4.Our study shows that in CKD patients on haemodialysis, an increase in hsCRP is related to low T3. But in cases of CAPD no relationship is seen.

Vishnu Priya K, Chandran PA, Raju SB, Noorjahan M. Correlation between thyroid status and hsCRP in chronic kidney disease patients undergoing dialysis. J Clin Sci Res 2014;3(Suppl 3): A155.

Relationship between parathyroid hormone, vitamin D, calcium and phosphorus in chronic kidney disease

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Objectives: Secondary hyperparathyroidism (SHPT) describes a complex alteration in bone and mineral metabolism that occurs as a direct result of CKD. SHPT causes primarily cardiovascular calcification and is directly correlated to increase in morbidity and mortality. Identifying patients at risk and evaluating for SHPT is important because early intervention slows or arrests the progression of bone and cardiac disease in CKD patients. The aim is to evaluate the relationship between bone markers (iPTH, vitamin-D, calcium and phosphorus) in various stages of CKD.

Material and methods: A total of 123 CKD patients which are divided into stage III (n=19), stage IV (n=27), stage V(n=77) are included in the study. Serum urea, creatinine, albumin, iPTH, 25(OH)D_3, calcium and phosphorus are estimated. eGFR calculated by MDRD 6-variable equation. Pearson's correlation and ANOVA test are used to assess the relation between the parameters.

Results: In CKD stages III, IV, V Mean±SD values of serum iPTH(pg/ml) levels are 10.3±11.6, 20.5±25.4, 111.8±182.3 (P=0.002), Calcium (mg/dl) levels are 8.6±0.8, 7.9±0.8, 8.9±9.2 (P=0.8), Phosphorus (mg/dl) levels are 3.8±1.5, 5.0±2.0, 5.8±2.4 (P=0.006), 25(OH)D_3(ng/ml) levels are 40±26.4, 31.9±22.9, 32.2±29.3 (P=0.9) respectively. Statistical significant difference is found with iPTH and phosphorus among different stages of CKD. iPTH (r=-0.33), phosphorus(r=-0.28) are negatively correlated and 25(OH)D_3(r=0.035) positively correlated with eGFR. Statistically significant correlation was found between PTH and eGFR with p-value 0.02.

Conclusion: Our study shows importance of the determination of iPTH and phosphorus for early detection of SHPT. iPTH level are increased earlier than other bone markers. So early screening of CKD patients with serum iPTH levels helps in early detection and intervention of SHPT which reduces considerable mortality and morbidity.

Kunireddy N, Chandran PA, Raju SB, Noorjahan M. Relationship between parathyroid hormone, vitamin D, calcium and phosphorus in chronic kidney disease. J Clin Sci Res 2014;3(Suppl 3): A156.

Correlation of estimated GFR (eGFR) with serum phosphate and calcium-phosphate ratio as harbinger of increased mortality in chronic kidney disease

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Objective: Elevated serum phosphorous is a predictable accompaniment in the absence of dietary phosphate restriction or supplemental phosphate binders. The consequences of hyperphosphatemia and elevated calcium and Phosphorous product, include the development and progression of secondary hyperparathyroidism and a prediction to metastatic calcification. Both of these conditions may contribute to the substantial morbidity and mortality seen in patients with chronic renal disease.

Material and methods: This retrospective study included 30 cases of chronic kidney disease who are on maintenance hemodialysis. The biochemical parameters included are serum calcium, phosphorus, urea, and creatinine. The eGFR was calculated using Cockcroft-Gault equation taking age, gender and weight into consideration.

Result: The mean serum Phosphorous level was 7.11±1.19mg/dl, Urea was 126.14±36.65mg/dl, Creatinine was 10.02±3.52mg/dl were higher in cases. The mean of product of Calcium and Phosphorous was 64.98±11.71. The correlation between eGFR and Hyperphosphorous was significantly higher with 'p' value of 0.075. As the eGFR decreased the levels of the product of Calcium and Phosphorous increased.

Conclusion: The product of Calcium and Phosphorous and correlation between eGFR and hyperphosphorous may help in predicting mortality and morbidity associated with CKD cases and also in turn help in identifying the complications early and treatment of those conditions, which may improve the quality of patient.

Nandini T, Balaiah, Sudarshan. Correlation of estimated GFR (eGFR) with serum phosphate and calcium-phosphate ratio as harbinger of increased mortality in chronic kidney disease. J Clin Sci Res 2014;3(Suppl 3): A157.

Abstracts of Poster Presentations (AMBICON – 2014)

Comparision of protein / creatinine ratio and 24-hours urine protein in chronic kidney disease

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Objective: To assess the correlation between protein/creatinine ratio of random urine samples and 24hours urine protein in patients with chronic kidney diseases (CKD).

Material and methods: 60 patients having chronic kidney disease were selected on the basis of serum creatinine levels.Patients with serum creatinine values >2.5mg/dl were considered having chronic kidney disease. Random urine samples and 24hour urine were collected and the protein loss was estimated and correlated.

Results: There was a good correlation between protein/creatinine ratio of random urine samples and 24hour urine protein in patients with chronic kidney disease with $p < 0.01$ and $r=0.493$.

Conclusion: 24 hour urinary proteinuria measurement is a cumbersome process. The best alternative is random urine protein/creatinine ratio for monitoring the level of proteinuria in chronic kidney disease patients.

Reddy GS, Sripad DV, Chowdary NVSC, Siva Prabodh V. Comparision of protein/creatinine ratio and 24-hours urine protein in chronic kidney disease. J Clin Sci Res 2014;3(Suppl 3): A158.

Does leptin have a role in the development of diabetic nephropathy?

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Objective: The role of leptin in development of diabetic nephropathy is uncertain.Some studieshave shown that serum leptin level is elevated in diabetic nephropathy compared to subjects without diabetic nephropathy, whereas administration of leptin in generalized lipodystrophy patient has shown improvement in albuminuria. So clarification in role of leptin in pathogenesis of diabetic nephropathy is needed. In our study we tried to find out whether there is any alteration in leptin between diabetic with and without complication in patient with normal body mass index

Materials and methods: We had taken 50 diabetic patients in our study. Based on their urinary microalbumin levels patientswere grouped into diabetic with nephropathy (22) and without nephropathy (38).We had measured serum leptin levels in both the groups.

Results: Mean serum leptin levels among diabetic patients with and without nephropathy were 1.07 ± 1.05 and 1.37 ± 1.48 respectively without statistical significance between them ($p = 0.43$). There was also no significant correlation between leptin levels and microalbuminuria among the nephropathy patients ($r = 0.06$, $p = 0.78$).

Conclusion: From our study it's clear that leptin has probably no role in the development of nephropathy among diabetic patients.

Hariharan A, Sumathi, Girija S. Does leptin have a role in the development of diabetic nephropathy? J Clin Sci Res 2014;3(Suppl 3):A159.

Abstracts of Poster Presentations (AMBICON – 2014)

A study on urine albumin / creatinine ratio between diabetes and diabetic nephropathy patients

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Objectives: To compare the urine albumin creatinine ratio between diabetes and diabetic nephropathy patients.

Material and methods: The study was conducted in Sree Balaji Medical College and Hospital. 30 known Diabetic control patients and 30 known Diabetic nephropathy patients were selected from diabetic and nephrology department. Urine Albumin (mg/L) and urine creatinine (mg/dl) were measured in the early morning spot urine sample. Quantitative determination of albumin in urine is done by (MAU) by means of particle enhanced turbidimetric immunoassay. Estimation of urine creatinine is done by Modified Jaffes Method. ACR (urine albumin creatinine ratio) is usually measured as mg of albumin per gram of creatinine. Creatinine (g/dl) = 1000 x Creatinine (mg/dl) ACR (mg/g) can be calculated by albumin (mg/dl) divided by creatinine (g/dl).Urine albumin concentration (UAC) (mg/L) = Albumin (mg/dl) x 10. In our study urine albumin is expressed as (mg/L) and urine creatinine is expressed as (mg/dl). Here ACR is expressed as mg of albumin excreted per gram of creatinine .Hence we divided the urine albumin mg/L by urine creatine mg/ dl and multiplied by 100.

Results: ACR values are lesser in diabetes compared to diabetic nephropathy patients.

Conclusion: Diabetic nephropathy is asymptomatic in early stages. Sustained microalbuminuria is the earliest warning sign.Diagnosis is done by screening of all patients with diabetes with random urine albumin/creatinine ratio.

Samuel TR. A study on urine albumin/creatinine ratio between diabetes and diabetic nephropathy patients. J Clin Sci Res 2014;3(Suppl 3): A160.

Role of vitreous potassium level in estimating post mortem interval

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Introduction: Vitreous humor is an inert transparent jelly like substance and help in assessing post mortem interval after death. Vitreous potassium has been considered to be helpful and is at most importance in the investigation of crime.

Objective: To estimate vitreous potassium level in dead bodies.

Material and Methods: 98 cases brought to the mortuary at GMC, Anantapuram, formed the material for collection of vitreous humor (age group 20y -60years) 2ml of vitreous was aspirated from Rt eye as early as possible after the delivery of dead body to mortuary and 2ml of vitreous form the left eye at the time of commencement of autopsy. The sample was immediately centrifuged for 10 minutes at 3000 rpm the supernatant was used for estimation by flame photometry. 98 cases were grouped into 5 groups based upon PMI. Group I 24 cases (P.M.I. 0-6 hours), Group II 35 Cases (PMI 6-12 hours), Group III 20 Cases (PMI 12-18 hours) Group IV 12 cases (PMI 18-24 hours), Group V 7 cases (PMI 24-42 hours).

Results : The mean K^+ levels in Group I, Group II, Group III, Group IV, Group V cases in Right Eye 5.2, 6.75, 8.01, 8.25, 8.02 respectively and Left eye 5.09, 6.4, 7.49, 7.91 and 8.01 respectively values are expressed in mEq/L.

Conclusion: Present study concluded that there is a linear rise in vitreous potassium level after death which helps in estimating PMI.

Srinivasulu U, Mahesh G. Role of vitreous potassium level in estimating post mortem interval. J Clin Sci Res 2014;3(Suppl 3): A161.

Abstracts of Poster Presentations (AMBICON – 2014)

Lysinuric protein intolerance as a cause of secondary hyperammonemia

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Lysinuric protein intolerance (LPI) is a rare autosomal recessive disorder affecting the basolateral transporter for cationic amino acids in the kidney and intestine leading to deficiency of these amino acids in blood. Low levels of arginine and ornithine limit the functioning of the urea cycle resulting in high levels of ammonia accumulation affecting the brain and other organs. This also leads to impaired growth, hepatosplenomegaly and muscle weakness.

A three year old child born following a consanginous relationship had presented to us with an eight month history of daily episodic irritability lasting for upto 12 hours. There was associated slow congitive regression. The child was being treated for epilepsy with multiple anticonvulsants without benefit. His EEG was normal and MRI had shown symmetrical periventricular T2 Hyperintensities. On clincial Examination he was pale, ataxic and had mild hepatosplenomegaly. His serum Ammonia was significantly raised at 840 micromol/ l as were plasma ferritin with mild derangment of liver function. Clinically Lysinuric proteinuria was suspected.

Plasma and urine amino acids were analysed in HPLC using post column derivatization method. Plasma amino acids showed decreased levels of lysine, arginine and ornithine while urine aminoacidogram showed elevated level of these aminoacids.Urine organic acids were analyzed in GCMS which demonstrated elevated levels of orotic acid (around 460 fold) due to entry of carbamoyl phosphate into pyrimidine metabolism during hypoarginenimia.

The child has shown dramatic improvement in his symptomatology after starting anitscavanging therapy (Sodium benzoate and Citrulline) and protein restricted diet.

Reddy MG, Jayanthi U, Girish HR , Jain V, Bansal RK, Cariappa R, Bijarnia S. Lysinuric protein intolerance as a cause of secondary hyperammonemia. J Clin Sci Res 2014;3(Suppl 3): A162.

Correlation of blood lactate levels, pH and pCO_2 in chronic kidney disease, chronic obstructive pulmonary diseases and sepsis

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Introduction: Cell converts glucose to pyruvate in glycolysis, pyruvate to acetyl co-A through oxidative decarboxylation. In inadequate tissue perusion (sepsis), it undergoes anaerobic metabolism which metabolise pyruvate to lactate .Sepsis can lead to multi-organ failure and globally prime cause of death by infection. One in four ICU patients gets sepsis and one in two patient dies.

Objectives: To correlate the blood lactate levels, pH and pCO2 in CKD,COPD and sepsis cases.

Material and methods: The present study group consists of 40 patients of age group 30 - 65 years diagnosed as CKD (13cases), COPD (13cases) and sepsis (14cases) in Emergency Department of Government General Hospital, Kakinada, East Godavari over a period of six months were included. Two ml of Heparinised arterial blood was taken from patients. Blood lactate levels were studied by EPOC ABG analyser.

Results: The study shows increased blood lactate levels in CKD,COPD and SEPSIS as in compared with controls,but markedly increase of blood lactate levels in sepsis cases ($p = 0.0092$) which is statistically significant. In the present study, blood lactate in sepsis shows negative correlation with pH ($r = - 0.51716$) and pCO2 ($r = -0.3976$) and in COPD shows negative correlation with pH ($r = - 0.5923$) and pCO2 ($r = - 0.4087$) and CKD shows positive correlation with pH ($r = 0.3477$) and negative correlation with pCO2 ($r = - 0.0139$).

Conclusion: Blood lactate levels markedly increase in sepsis patients when compared to CKD and COPD patients. Blood lactate acts as prognostic indicator of impaired metabolism (anaerobic) in sepsis patients.

Suresh E, Rajeswari G. Correlation of blood lactate levels, pH and pCO2 in chronic kidney diseases, chronic obstructive pulmonary disease and sepsis. J Clin Sci Res 2014;3(Suppl 3):A163.

Abstracts of Poster Presentations (AMBICON – 2014)

Effect of anti-glycolytic agent-DL- glyceraldehyde on the analysis of serum creatinine, sodium and potassium

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Introduction: DL-Glyceraldehyde (GLY) an antiglycolytic with an added advantage than sodium fluoride (NaF) by exerting its action at hexokinase level, prevents initial one hour glycolysis and also minimises dilution effect,maintains cell membrane integrity,effective even at minimal concentration, stable at room temperature, dissolves rapidly, soluble at higher concentration and nontoxic.With this background its curious to know whether it affects the other common clinical analytes estimation.

Aim: The aim of my study is to find the effect of GLY in the estimation of Serum creatinine by modified Jaffe's method and Serum Sodium and Potassium by ISE method.

Material and methods: 80 random blood samples were collected from the OP patients, Govt Kilpauk Medical College and Hospital, Chennai. 6 ml of venous blood was collected and was equally distributed - 2ml in Plaintube, 2ml in NaF tube and 2ml in the tubes coated with 5mmol/L of GLY and were analysed for Creatinine by Modified Jaffe's method and Sodium and potassium by ISE.

Result: There was statistical difference in values of Serum Creatinine between GLY tube compared with plain tube and NaF ($p = 0.0001$) and no significant difference in values of serum Creatinine between the plaintube and NaFtube ($p = 0.955$).Serum sodium showed no statistical difference between GLYtube and plaintube ($p = 0.694$). For Serum Potassium significant difference was observed between GLYtube and plain tube ($p = 0.0001$). Both sodium and potassium estimation in NaF tube showed significantly increased values when compared to plaintube.

Conclusion: DL-Glyceraldehyde coated tubes can be used for the estimation of serum sodium but not for potassium by ISE method. With the significant difference in place for the estimation of serum creatinine by modified jaffes method in GLY coated tubes; it can be assayed by enzymatic method.

Udaya Kumari G, Meera V. Effect of anti-glycolytic agent- DL-glyceraldehyde on the analysis of serum creatinine, sodium and potassium. J Clin Sci Res 2014;3(Suppl 3):A164.

Establishment of laboratory reference intervals of lipid profile parameters among healthy population in KIMS, Hubli

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Introduction: The concept of reference intervals was introduced by International Federation of Clinical Chemistry (IFCC) to avoid the problem with normal values and values obtained from individuals under clinical investigations. An important part of medical decision in diagnosis is dependent on comparison of patient related observations with reference values. It is therefore essential to establish reference range of biochemical investigation for a given population in India as now we are following the values which have been established in Western population. So, in the present study an attempt was made to establish reference value of lipid profile parameters in population, visiting KIMS, Hubli.

Aim and objective: To establish the laboratory reference interval of lipid profile at KIMS hospital, Hubli among the population of north Karnataka.

Material and methods: The study was an Indirect, Posteriori and Non random.The population comprised of individuals who visited KIMS hospital for health checkup from the Jan. 2006 to Dec. 2011.Over 5000 medical records were screened for laboratory and health data as per the IFCC guidelines. Lipid profile parameters of the subjects were analysed with standard kits on automated analyser XL-300 using standard IFCC methods. Data was analysed for Gaussian distribution and results were obtained in mean and SD.

Results: We obtained TC of 165.98±33.48, TG of 114.82±39.49, HDL of 39.66±8.52 and LDL of 102.07±29.52. The results were the reference values of our laboratory settings.

Discussion and conclusion: For interpretation of the clinical laboratory data, the study results were compared with standard reference values. In conclusion, the results obtained from the study of a small section of population of apparently healthy North Karnataka subjects can be taken as the reference values of our laboratory.

Bawakhan B, Yadav SB, Chandru MC, Shrikanta. Etablishment of laboratory reference intervals of lipid profile parameters among healthy population in KIMS, Hubli. J Clin Sci Res 2014;3(Suppl 3): A165.

Abstracts of Poster Presentations (AMBICON – 2014)

Comparison of estimation of low density lipoprotein by the direct and indirect methods (Friedwald equation)

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Objective: To determine if, and to what extent LDL level differs when it is calculated by the Friedwald formula compared with the LDL measured by a direct method.

Material and methods: In this record based study, a total of 1140 lipid profile reports wherein LDL was measured directly & TG< 400 mg/dl were taken for the study from the clinical Biochemistry laboratory of RRMCH. The data was divided based on the TG levels into four groups, A - <99mg/dl, B-100-199 mg/dl, C-200-299 mg/dl and D- < 400 mg/dl. LDL was calculated using Friedwald's formula and was compared with homogenous enzymatic method derived direct LDL in all the groups. Statistical analysis was done using Pearson's correlation and Student's paired't' test.

Results: A positive correlation was found between D-LDL and C-LDL in all the groups, A-0.97,B-0.99, C-0.98 & D-0.96.P value was significant in all the groups except group A>1,B-<0.01, C-<0.001 & D-<0.0001.The absolute difference of the LDL values by the two methods showed a difference of 5 ± 15mg/dl.The difference increased as the triglyceride levels increased.

Conclusion: C- LDL is a cost effective tool to measure LDL when accuracy is not crucial.

Mohan V, Priyadarshini KS. Comparison of low density lipoprotein by the direct and indirect methods (Friedwald equation). J Clin Sci Res 2014;3(Suppl 3):A166.

Effect of storage time and temperature on serum clinical biochemistry analytes

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Objective: The aim of the present study was to determine the effect of storage time and temperature on laboratory results of routine clinical biochemistry analytes in sera from apparently healthy volunteers.

Material and methods: Ten healthy volunteers were instructed to fast overnight and 10 ml of blood was collected from each subject without anticoagulant (in red capped vacutainer). Samples were allowed to clot at room temperature for 20 min, centrifuged and serum separated which was stored in various aliquots. Baseline analysis ("0" day values) of 18 analytes in serum of each subject was done without delay on the same day of collection.

Other aliquots were stored at 0^{o} C and 4±1 ^{o}C and analysed on 3, 7, 15 and 30 days.

Results: Urea, uric acid, phosphorus, SGPT, TG and HDL were stable till 7 days whereas ALP was stable till 15 days but SGOT was stable upto 30 days at both 0^{o} C and 4±1^{o} C. ALP, Amylase and urea were stable up to 30 days at 0 ^{o}C temperature. Glucose, creatinine, inorganic phosphorus and potassium were least stable and should be determined within 48 hours at 4±1^{o} C.

Conclusion: In present study, routine biochemical analytes were stable up to 3 days at 4±1^{o} C. This evidence can be used in exceptional circumstances because processing of any analyte on the same day should be done for better reproducibility. Beyond all this, it is even very important and useful to check the reliability of technical and instrumental resources that the laboratory will use during the study because molecular alterations of the analytes due to variable storage conditions can cause misleading results.

Menaka K, Bala M, Singh V, Minakshi, Raj M. Effect of storage time and temperature on serum clinical biochemistry analytes. J Clin Sci Res 2014;3(Suppl 3):A167.

Abstracts of Poster Presentations (AMBICON – 2014)

Age-specific reference range for prostate specific antigen

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Objective: Several studies have tried to establish age-specific reference range forTotalProstate Specific Antigen (TPSA), to improve its sensitivity and specificity as a marker for prostate cancer. In this study, our aim was to find a correlation between TPSA with age and to establish itsappropriate reference range for evaluation of men at risk for early, potentially curable prostate cancer.

Material and methods: This was a data based retrospective study ofserum TPSA levels in 1077 menaged between 40-90 years with no diagnostic prostate cancer, and whose TPSA values were obtained as a part of clinical work up of symptoms related to non-malignant urological conditions,during the period of 2010-11. Serum TPSA was estimated by solid-phase, competitive chemiluminescent immunoassay using standard kits.

Results: There was a continuous increase in mean and medianof TPSA, with a significant correlation ($p<0.05$), with advancing age.Using 95th percentile, the recommended age-specific reference range of TPSA values were as follows: for the age group less than 50 years, 3.61 ng/ml; for the age group 50–70 years, 4.36 ng/ml; and for the age group more than 70 years, 5.04 ng/ml.

Conclusion: This study indicates that serum TPSA correlates with age, primarily due to increasing prostate volume as age advances. The concept of age specific reference of TPSA values can help to reduce unnecessary prostate biopsies, especially in older men with TPSA level of 4-10 ng/ml and helps in differentiation of prostate cancer from benign prostate disease.

Kumar HD, Sachdeva A, Ghalaut VS, Goel R, Kulshrestha MR. Age-specific reference range for prostate specific antigen. J Clin Sci Res 2014;3(Suppl 3):A168.

Comparison of measurement of low density lipoprotein cholesterol calculated vs direct assay

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Background: Serum LDL-C is an independent and modifiable risk factor for coronary heart disease.National Cholestrol Education Program Adult treatment panel and many societies have recommended LDL-C concentration as the major criterion for diagnosis and treatment of patients with Hyperlipidemia.

Objective: To compare the direct LDL-C measurement by Enzymatic Colorimetric assays and Calculated LDL-C values by Friedwald's Formula.

Material and methods: Blood samples were collected randomly from 130 patients in our tertiary care Hospital. Serum separated and lipid profile was performed. LDL-C values are calculated using Friedwald's formula: LDL-C=TC-(HDL+TAG/5).

Results: LDL-C values calculated using Friedwald's Formula has significant deviation from direct LDL-C values with TAG levels >300mg/dl. The degree of agreement decreases with increase in TAG level.LDL-C Risk Stratification risk varies by 8-10% between Direct and Calculated LDL-C values.

Conclusion: Reliability of Calculated LDL-C estimation decreases considerably with increase in the TAG levels. With TAG levels >400mg/dl, Cholestrol in TAG rich lipoprotein is overestimated by Friedwald's calculation resulting in under-estimated LDL-C values and therefore this method has a definite limitation in clinical application. Hence in non-fasting samples and TAG levels > 400mg/dl, there is a definite need for direct Enzymatic Colorimetric assays.

Somana JS, Mahalakshmi R. Comparison of measurement of low density lipoprotein cholesterol – calculated vs direct assay. J Clin Sci Res 2014;3(Suppl 3): A169.

Abstracts of Poster Presentations (AMBICON – 2014)

Gender bias in performance of eGFR equation

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Objectives: Several equations have been proposed to calculate eGFR. However, the validity of these equations has not been assessed extensively against reference GFR measured using DTPA scan in different genders. The present study is taken up to compare the eGFRs based on 4 different equations against the reference GFR obtained by ^{99m}Tc-DTPA method in different genders.

Material and methods: Fifty consecutive patients referred to Nuclear Medicine department for DTPA renal scan were selected. These cases were divided into two groups depending on gender. Serum creatinine was estimated by Jaffe kinetic method on Siemens Dade Dimension analyzer. Reference GFR was measured with ^{99m}Tc-DTPA and eGFR calculated using the Cockcroft-Gault, 4-variable MDRD, 6-variable MDRD and CKD-EPI equations. All the GFR values were adjusted to standard body surface area of 1.73 m^2.

Results: In male patients mean (± SD) DTPA-GFR was 84.72 (± 33.94) ml/min and there is significant positive correlation of various eGFRs with DTPA-GFR (r= 0.47, r=0.56, r=0.58, r=0.5 Cockcroft-Gault, MDRD-4, MDRD-6 and CKD-EPI respectively). MDRD 4 was found to give values closer to reference method. In female patients the mean (± SD) was 83.12(± 22.37) ml/min. The correlation of various eGFRs with DTPA-GFR was not statistically significant (r= 0.45, r=0.25, r=0.37, r=0.22 Cockcroft-Gault, MDRD-4, MDRD-6 and CKD-EPI respectively). However the difference of mean is less with Cockcroft-Gault and MDRD 6 equation.

Conclusion: Same formula may not be applicable equally in both the genders. Hence more studies with large sample size are needed to evaluate the issue.

Khan SA, Saibaba KSS, Kiranmai TP, Nallapareddy K, Jacob R, Mohan K, Noorjahan, Chandran PA. Gender bias in performance of eGFR equation. J Clin Sci Res 2014;3(Suppl 3): A170.

Small steps for big change: attention towards preanalytical errors

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Objectives: 1) To study percentage of errors during preanalytical stage and implement a quality improvement interventions to release accurate results. 2) To test the effectiveness of attention by continuous educational action at reducing preanalytical errors. 3) To analyse preanalytical errors in relation to electronic ordering system and trained staff (Outpatient site).

Material and methods: We retrospectively reviewed the samples and test request forms received at Biochemistry laboratory for a period of one month. The outcome measures were incomplete laboratory forms, mislabelling samples, inappropriate tests, wrong container, quality of samples and transport problems. Two weeks' interventions in the form of continuous educational training and standard operative procedures were given to stakeholders to raise awareness towards preanalytical phase. Two weeks later, data was monitored again for a period of one month.

Results: 2330 samples and request forms were monitored before intervention and 2130 after intervention from wards for a period of one month each, respectively. Of the total preanalytical errors, 22.1% were due to inappropriate tests, 81.5% were related to incomplete patient information, 97% lacking clinical information, 18.8 % errors related to specimen information. Subsequently these were reduced to 10%, 20%, 16.4%, and 7.5% respectively. The percentages of errors found at outpatient site were very low.

Conclusion: Showing enthusiastic approach on stakeholders involved in preanalytical phase by continuous educational action, big errors occurring due to human factors were reduced. Introduction of electronic ordering system is another option for the same. This study improved quality of test results and patient care.

Patil AA, Sawant SD. Small steps for big change: attention towards pre-analytical errors. J Clin Sci Res 2014;3(Suppl 3):A171.

Abstracts of Poster Presentations (AMBICON – 2014)

Evaluation of pKa as a cause of discordance between calculated and measured bicarbonate in arterial and venous blood

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Objective: Our objectives are to check if there is Discordance between a) arterial and venous blood gas parameters b) measured and calculated bicarbonate; A way of predicting Measured from Calculated Bicarbonateand blood pH

Material and methods: Method comparison study involving 250 patients for whom arterial blood sample is needed for acid base status assessment. Arterial and venous blood samples were collected using PICO50syringes andanalysed in ABL80flex and the plasma were utilized to measure TCO_2 by enzymatic method.

Results: a) No significant difference between arterial and venous pH (7.382±0.436 vs7.367 ± 0.456,p=0.31), pCO_2(39.3 ± 14.32vs41.9 ± 16.11,p=0.23), [HCO_3^-] (22.91 ± 7.93 vs 24.15 ± 8.21, p=0.24),TCO_2(24.82 ± 8.15 vs 25.63 ± 9.21, p=0.43) b) Significant difference between arterial and venous pO_2(126 ± 48.5vs62 ± 30.5, p<0.001) c) On Bland Altman analysis : I. Limits of agreement (LOA) were narrow between arterial and venous pH,pCO2,TCO2,[HCO_3^-](0.04 to 0.11, -0.3 to -3.4, -1.1 to -3.8,-2. 1to-.4respectively). II. LOAwere widebetween TCO2 and [HCO_3^-] in arterial(-2.72to5.75)& venous(-2.46to5.78)samples. d. Weak correlation between pH and bias in TCO2and[HCO_3^-] in arterial(r=0.576,p=0.01) and venous samples(r=0.532,p=0.01)

Conclusion: The agreement between arterial and venous pH, pCO, TCO2 and [HCO_3^-] and discordance between arterial and venous pO2 indicate that venous blood sample would suffice unless oxygen delivery is to be assessed.The wider LOA of both arterial and venous TCO2 and [HCO_3^-] indicate that TCO2 has to be measured to assess the acid base status.Weak correlation between pH and bias between TCO2 and [HCO_3^-] indicate that predicting TCO2 based of pH and [HCO_3^-] values is not possible.

Shanmugapriya C. Evaluation of pKa as a cause of discordance between calculated and measured bicarbonate in arterial and venous blood. J Clin Sci Res 2014;3(Suppl 3):A172.

Study of serumγ -GT and CRP in patients with acute coronary syndrome

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Introduction: γ-Glutamyltransferase(γ-GT) is the enzyme responsible for the extracellular catabolism of Glutathione (GSH)wherein it catalyses the first step in the degradation of GSH to a glutamic acid and Cysteinyl- Glycine (Cys-Gly).Cysteinyl-Glycine triggers iron dependent oxidation of low density lipoprotein (LDL) in atherosclerotic plaques. γ-GT localises with oxidized LDL and foam cells in plaques. γ-GT plays a pro-oxidant and pro-inflammatory role.It has been suggested to play a role in pathogenesis of cardiovascular atherosclerotic disease and its complications. Inflammation is shown to be involved in arterial plaque formation, plaque rupture and clot formation during coronary events. C - reactive protein (CRP) is an inflammatory marker which can be used in risk assessment of patients with ACS (ACS).

Aims and objectives: The aim of the study was to evaluate serum γ-GT levels in patients with Acute Coronary Syndrome (ACS) and to correlate it with serum CRP levels.

Material and methods:30 clinically diagnosed patients of ACS were selected as study cases and 30 age and sex matched healthy individuals were selected as study controls.Serum γ-GT was measured by Enzymatic Colorimetric method of Ssasz in semi autoanalyser and serum C - Reactive Protein (CRP) was measured by Latex Turbidimetry method.

Results: Serum γ-GT levels showed a significant increase in patients with ACS when compared with healthy controls with a p value of 0.03 and showed a positive correlation with CRP levels with a r value of 0.8 and p value of 0.02.

Conclusion:γ-GT is potentially valuable parameter for risk stratification along with CRP in patients with ACSand it can be considered in assessing appropriate treatment.

Sahana Y, Dattatreya K, Tembad MM. Study of serum γ-GT and CRP in patients with acute coronary syndrome. J Clin Sci Res 2014;3(Suppl 3):A173.

Abstracts of Poster Presentations (AMBICON – 2014)

To determine the accuracy of heart-type fatty acid-binding protein (H-FABP) as a new and early cardiac biomarker in the early diagnosis of acute myocardial infarction

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Objectives: Heart diseases, including acute myocardial infarction (AMI), are the second leading cause of death all over the world. Therefore, early detection and early treatment of AMI have become the most critical and effective steps of life saving. Chest pain is one of the most common complaints among patients admitted to emergency departments. For this purpose, our study aims at utilization of point-of-care H-FABP test, which has the advantage of bedside testing and rapid test results & also to determine the accuracy of heart-type fatty acid-binding protein (H-FABP) as a new and early cardiac biomarker in the early diagnosis of acute myocardial infarction.

Material and methods: 55 patients with acute chest pain were enrolled in the study. From each patient, blood samples were obtained for CK-MB, Troponin I and H-FABP on admission (0-4 h) & 8-12 h after the onset of chest pain. ECG was done at similar intervals. Cardio Detect Combi kits (based on the principle of rapid chromatographic immunoassay) were used for qualitative determination of H- FABP and Troponin I for early diagnosis of Acute Myocardial infarction and results were obtained within 15 minutes.

Results: All the results of ECG, CK MB, Troponin I and H-FABP for every patient were obtained and compared for final diagnosis of AMI as per standard criteria.At 0-4 h, after the onset of AMI, the diagnostic sensitivity of H-FABP (93%) were higher than that of Troponin I (cTnI) (38%) & CK-MB (13%).

Conclusion: H-FABP is a reliable and excellent biochemical marker for early diagnosis of AMI.

Pachpute P, Badade ZG, More K, Deepak AD. To determine the accuracy of heart-type fatty acid-binding protein (H-FABP) as a new and early cardiac biomarker in the early diagnosis of acute myocardial infarction. J Clin Sci Res 2014;3(Suppl 3):A174.

Serum copper levels in patients with coronary artery disease

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Background: Coronary artery disease (CAD) is an emerging epidemic in developing countries and a leading cause of morbidity and mortality. In addition to the conventional risk factors, trace elements are also said to be associated with the risk of coronary artery disease. Copper is an essential trace element and is a component of anti-oxidant enzymesystems. Although extensive data on copper and CAD are available, the data is controversial.

Objectives: 1. To assess serum copper levels and lipid profile in CAD patients. 2. To correlate copper levels with lipid profile in CAD patients.

Materials and methods: A case control study was conducted on 40 angiographically proven CAD patients and 30 healthy controls. Serum copper levels and lipid profile were analyzed by colorimetric methods. Appropriate statistical analysis was carried out.

Results: This study showed significantly lower serum copper concentration and higher Cholesterol, Triglycerides, low density lipoprotein cholesterol and lower concentration of HDL-C in CAD patients as compared to controls (p value < 0.05 & < 0.01 respectively). A significant negative correlation (p value < 0.05) was observed between serum copper levels and total cholesterol, triglycerides, and LDL-C.

Conclusion: This study suggests that copper deficiencymay be associated with other major traditional riskfactors like elevated TC, TGL, LDL-C & decreased HDL-C in coronary artery disease patients. Copper may be considered a valuable marker in the evaluation of coronary artery disease.

Ponsuganthi K. Serum copper levels in patients with coronary artery disease. J Clin Sci Res 2014;3(Suppl 3):A175.

Serum gamma-glutamyl transpeptidase and lipids in young adults with uncomplicated essential hypertension

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Objective: Essential hypertension is one of the major cardiovascular risk factor and accounts for 95% of all cases of hypertension .Essential hypertension is increasing particularly among young adults due to change in lifestyle and dietary habits. γ-Glutamyl transpeptidase, an enzyme commonly used as a marker of alcohol intake and liver damage is now regarded as a novel pro-atherogenic marker involved in the pathogenesis of atherosclerosis and Cardiovascular risk. The objective of this study is to estimate and analyse serum GGT and lipid levels in young adults with Essential hypertension.

Material and methods: 65 subjects with Essential hypertension and 50 age and sex matched healthy controls both male and female between 18-50 years of age were recruited from General Medicine department of Narayana Medical college and Hospital, Nellore, A.P. Serum GGT was measured by calorimetric kinetic assay. Fasting serum triglycerides, total cholesterol and HDL cholesterol by standard enzymatic procedures and LDL cholesterol by Friedwald equation.

Results: GGT is significantly elevated in hypertensive subjects(mean±SD 64.2±18.62) IU/L compared to controls (mean±SD 26.20±8.91)IU/L (P value <*0.001*). There is significant positive correlation between GGT and total cholesterol. GGT is significantly correlated with systolic BP ($r= 0.26$ $p<0.01$) and diastolic BP($r= 0.28$ $p<0.01$).

Conclusion : Our findings suggest that elevated GGT in young adults may contribute to their susceptibility to hypertension and provide an additional evidence of novel role of GGT in cardiovascular risk evaluation

Rajarajeswari, Naidu JN, Ramalingam. Serum gamma-glutamyl transpeptidase and lipids in young adults with uncomplicated essential hypertension. J Clin Sci Res 2014;3(Suppl 3):A176.

Study of the association of intima-media thickness with lipoprotein(a) in hypertensive patients

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Objective:-To evaluate the Lipid profile, lipoprotein (a) and intima-media thickness in hypertensive patients with or without atherogenic Dyslipidaemia.

Material and methods:-Hypertensive patients with or without Dyslipidaemia (25-65 years) were included in the study (n=20) and compared with healthy (age and sex matched) controls (n=20). Lipid profile; Lipoprotein(a) were analyzed using Eurodiagnostic system kits .Carotid Intima-media thickness was measured using B-mode ultrasonography. Unpaired t-test for the means was performed.

Results: The mean age of hypertensive group was 51.1 ± 8.5 years and that of controls was 52.5±9.4 years.

PARAMETER	Hypertension [Mean±S.D.]	Controls [Mean±S.D.]	P-VALUE
T.Cholesterol (mg/dl)	199.17±70.40	148.94±20.40	0.004
Triglycerides (mg/dl)	210.59±125.56	120.41± 16.597	0.0029
LDL (mg/dl)	110.622±58.668	80.42±18.049	0.0339
HDL (mg/dl)	46.43±17.353	48.60±5.672	0.5973
Lipoprotein(a) (mg/dl)	9.735± 6.983	4.595± 2.782	0.0041
Intima-media thickness (cm) RCCA(Rt.common carotid artery)	0.070± 0.016	0.042± 0.006	<0.0001
LCCA(Lt.common carotid artery)	0.072± 0.019	0.0439±0.008	<0.0001
S.BP (mm of Hg)	131.5±14.601	21±7.18	0.0064
D.BP(mm of Hg)	85± 6.069	78±4.10	0.0001

The mean of the serum cholesterol, triglycerides, LDL; Lipoprotein(a),IMT were significantly higher {P<0.05} in hypertension, while that of HDL values were lower in Hypertension{P>0.05}.

Conclusion: Lipoprotein (a), Intima-media thickness were significantly higher in hypertension indicating that the atherosclerotic changes occur earlier in hypertensive patients than healthy controls.

Sravanthi K, Varma BA. Study of the association of intima-media thickness with lipoprotein(a) in hypertensive patients J Clin Sci Res 2014;3(Suppl 3):A177.

Abstracts of Poster Presentations (AMBICON – 2014)

Vitamin D and it's relation to fasting insulin in coronary artery disease

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Objectives: To assess the association of vitamin D with fasting insulin in angiographically proven coronary artery disease subjects and in healthy controls.

Material and methods:This case -control study included 98 normal healthy subjects , 49 angiographically proven CAD subjects of both the gender as controls and cases respectively .Fasting venous samples were collected from cases & controls . Vitamin D, Insulin, PTH estimated by Chemiluminescense method. Fasting glucose, lipid profile were analysed by photometric enzymatic methods. Calcium by Arsenazo III method, Alkaline Phosphatase, Phosphorus by photometric UV method.

Results: Mean, Standard Error of mean and p value were calculated using Graph pad prism software .p value was statistically significant (<0.05) for vitamin D, insulin, phosphorus and total cholesterol between cases and controls. There is a negative correlation between vitamin D fasting insulin in both CAD (- 0.1632) and controls also (-0.1654).

Conclusion: Vitamin D deficiency is not uncommon in INDIA. Vitamin D levels are inversely associated with fasting insulin levels and hence increased risk for coronary artery disease.

Sowjanya B, Naidu JN, Krishnamma M, Ramamohan P, Rajarajeswari D, Phani Krishna B. Vitamin D and it's relation to fasting insulin in coronary artery disease. J Clin Sci Res 2014;3(Suppl 3):A178.

Serum myeloperoxidase and nitric oxide in ischemic heart disease

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Objectives: To estimate and compare serum myeloperoxidase and nitric oxide levels of acute and old cases of Ischemic heart disease patients with controls. To study the correlation between serum myeloperoxidase and nitric oxide levels in acute and old cases of ischemic heart disease.

Material and methods: After obtaining ethical clearance, the study was conducted in the Department of Biochemistry, K.S.Hegde Medical Academy in collaboration with the Department of Cardiology. 20 patients with acute IHD, 20 patients with past history of IHD (old cases) and 20 healthy controls were included in this study. After obtaining written consent, blood samples were collected in red vaccutainer. Serum myeloperoxidase was estimated by Malheston *et al* method and nitric oxide was estimated by Griess reagent method. SPSS was used to analyze the statistical data.

Results: Serum myeloperoxidase levels were significantly increased in both acute and old cases of IHD as compared to controls ($p<0.01$) and also in acute cases when compared to old cases ($p<0.01$).Serum nitric oxide levels were significantly decreased in both acute and old cases of IHD as compared to controls ($p<0.01$). Nitric oxide levels were slightly increased in old cases as compared to acute cases but it was not significant. There was a negative correlation between serum myeloperoxidase and nitric oxide but it was not significant.

Conclusion: .Myeloperoxidase and nitric oxide estimation may help in better understanding of diagnosis and prognosis of IHD and may act as markers for this condition if supported by further studies.

Thejaswini M, Rao AV, Shetty S, Subramanyam K. Serum myeloperoxidase and nitric oxide in ischemic heart disease. J Clin Sci Res 2014;3(Suppl 3):A179.

Abstracts of Poster Presentations (AMBICON – 2014)

Comparison of qualitative troponin I with ischemia modified albumin as an early marker of myocardial ischaemia

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Background: Diagnosis of ischemia is difficult in patients presenting with acute chest pain, particularly those with unpredictable baseline and normal ECG's, during pain or without evidence of myocardial necrosis including reversible ischemia. It takes about 4-6hrs for the present biochemical markers like cTn, CK-MB to be detectable in circulation & they do not necessarily rise in blood with reversible ischemia. On one hand, there is need to discharge patients with non-cardiac causes of chest pain and on the other hand, inappropriate discharge of a patient with acute cardiac disease can lead to significant morbidity and mortality.

Aim: In this study we evaluated the utility of IMA in diagnosing Cardiac Ischemia and to correlate its efficacy with troponin I (TnI).

Method: Serum levels of IMA by Albumin Cobalt Binding method, Serum troponin I, ECG, and Lipid profile were measured in 30 cases (test group) who presented to the casualty at VIMS, Bellary with chest pain within 6hrs of onset & in 20 healthy age matched control group.

Results: Serum IMA levels were increased in test group (Absorbance 0.68 ± 0.14) compared to control group (Absorbance 0.44 ± 0.04) (p value <0.001) with sensitivity of 96%, specificity of 86.3%, Negative predictive value of 95%. TnI levels in 30% of cases in test group was negative where IMA was increased with absorbance >0.5 indicating efficacy of IMA in diagnosing Myocardial ischemia. Total cholesterol & LDL were increased & HDL was decreased in test group compared to control group.

Conclusion*:* It is evident from our study that IMA detects the majority of patients with Cardiac Ischemia. Because of high NPV of IMA, patient can be confidently considered for early discharge from the emergency.

Indumati V, Vijay V, Rajeshwari, Shantala D, Shilpa A. Comparison of qualitative troponin I with ischemia modified albumin as an early marker of myocardial ischaemia. J Clin Sci Res 2014;3(Suppl 3):A180.

Divalent cations in essential hypertension: relation with serum calcium and magnesium

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Introduction: Primary hypertension is the most common form of hypertension, accounting for 90%-95% of all cases of hypertension. The possible role of divalent cations in the pathogenesis of essential hypertension has recently received increasing attention.

Objectives of the study: To study the serum levels of calcium and magnesium in patients of essential hypertension and their correlation with systolic and diastolic blood pressure.

Methodolgy: The present study was a case-control study which was carried out at Vydehi Institute of Medical Sciences & Research Centre, Bangalore from January 2013 to December 2013. 50 essential hypertensives as cases and 50 normotensives as controls were selected from Medicine O.P.D, and their serum calcium and magnesium levels were estimated.

Serum calcium was estimated byISE Electrolyte buffer reagent &ISE Electrolyte reference reagent kit method and serum magnesium by Calmagite method using Beckman Coulter SYNCHRON CX® System DXC 600. Statistical analysis was done by student t test and Pearson correlation.

Results: Serum calcium levels was significantly high (p <0.001**) while serum magnesium was significantly low (p= 0.093+) in the cases compared to the controls. Similarly, calcium had significant positive correlation (r value 0.842 and0.403) while magnesium had significant negative correlation (r value -0.805 and -0.395) with systolic and diastolic blood pressure respectively.

Conclusion: Increased serum calcium and decreased serum magnesium levels are associated with essential hypertension. The present study estimates the serum levels of calcium and magnesium as to obtain additional information concerning elemental involvement and to know the pathophysiology of essential hypertension.

Asha G, Mohanty S, Raghavendra DS. Divalent cations in essential hypertension: relation with serum calcium and magnesium. J Clin Sci Res 2014;3(Suppl 3):A181.

Abstracts of Poster Presentations (AMBICON – 2014)

A study of serum level of pentraxin 3 in acute coronary syndrome

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Background: The term Acute Coronary Syndrome (ACS) is the initial working diagnosis later refined by ECG and biomarkers. Diagnostic sensitivity and specificity for ACS especially at the earliest stage remains insufficient. Pentraxin 3 (PTX3) is the inflammatory protein,and can be a viable biomarker in the acute coronary syndrome in the diagnosis of ACS, as it is elevated in the early hours(6-8hrs) of ACS.

Aim and objectives: The aim of the study is to estimate serum Pentraxin3 level in patients with acute coronary syndrome and to correlate with serum CK -MB and Lipid parameters.

Material and methods: The study was conducted at Thanjavur medical college hospital. Study group includes 50 subjects- admitted in ICCU with ACS and 50 subjects of age and sex matched healthy individuals as control. Assay of serum Pentraxin3 was done by ELISA method and CK-MB by Kinetic immune inhibition method. Serum Lipid profile measured by Colorimetric method.

Results: Serum PTX3 levels (mean: 5.607± 2.82 ng/ml) were elevated in the ACS compared to normal healthy persons (mean: 1.38± 0.52 ng/ml) and is statistically significant ($p < 0.05$).There is no correlation between Serum PTX3 levels, CK-MB, and lipid profile.

Conclusion: The elevated concentration of serum PTX3, in early hours (6-8hrs) of ACS is due to the early and transient release of PTX3 from neutrophils following AMI. Thus PTX3 is an early biomarker for diagnosing ACS.

Vanitha K. A study of serum level of pentraxin 3 in acute coronary syndrome J Clin Sci Res 2014;3(Suppl 3):A182.

A comparative study between serum creatinine, microalbuminuria as a screening test to determine the better predictor of renal impairment in essential hypertensive patients

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Objectives: To estimate the level of microalbuminuria, albumin excretion rate (AER) and serum creatinine in essential hypertensive and non-hypertensive subjects. To compare serum creatinine, AER and microalbuminuria between essential hypertensive and non- hypertensive subjects.

Material and methods: The present study was carried out on total 60 subjects with 30 cases of hypertensive subjects and 30 controls of non-hypertensive subjects. Age and sex were matched. Blood sample was collected from the subjects for the estimation of serum creatinine. Spot urine sample was collected from the subjects for the estimation urine microalbumin level, urinary creatinine & albumin excretion rate (AER). Microalbuminuria and serum creatinine were estimated by Immunoturbidometry and Modified Jaffe's Method respectively. The values of microalbuminuria, AER and serum creatinine in hypertensive and non-hypertensive patients were compared.

Results: A significant difference in the microalbuminuria (p value 0.022) and AER (p value 0.04) was seen between hypertensive and non-hypertensive subjects. But there was no significant difference seen in the serum creatinine (p value 0.936) between hypertensive and non-hypertensive subjects.

Conclusions: In this study levels of urine microalbumin and AER were significantly high in hypertensive patients as compare to non-hypertensive subjects. But there is no significant difference in serum creatinine between hypertensive and non-hypertensive subjects. Therefore early screening of hypertensive patients for microalbuminuria and AER might reduce the risk of chronic kidney diseases.

Kruthi BN, Sarkar P, Raghunath H. A comparative study between serum creatinine, microalbuminuria as a screening test to determine the better predictor of renal impairment in essential hypertensive patients. J Clin Sci Res 2014;3(Suppl 3):A183.

Abstracts of Poster Presentations (AMBICON – 2014)

Serum creatine kinase – MB in ischaemic stroke: a case-control study

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Aims and Objectives: The aim of study is to determine serum creatine kinase – MB and the vascular risk factors for ischemic stroke in a series of patients with an ischaemic stroke and to compare them with a series of controls of same age and to know its correlation in stroke patients.

Methods: Fifty (50) consecutive patients with ischemic stroke were compared with thirty (30) healthy controls of same age. Vascular risk factors were recorded and serum creatine kinase – MB was determined in all of them and all other cardiac enzymes (CK, LDH, SGOT) lipid profile, fasting blood glucose and blood pressure was recorded. CT scan and ECG were also considered for the study

Results: There was modest rise of CK – MB in initial stages of stroke as compared with controls. The increase in CK – MB among cases is highly significant with a P value of <0.001.

Conclusion: the modest rise in serum CK – MB which have recorded in the initial stages of stroke suggest that acute myocardial involvement is a common complication than is generally recognized. It is more likely that acute myocardial dysfunction is a consequence rather than a cause of acute cerebrovascular lesion.

Preethi B, Roopa M, Rao SS, Rama Krishna C. Serum creatine kinase – MB in ischaemic stroke: a case-control study. J Clin Sci Res 2014;3(Suppl 3):A184.

Elevation of myocardial creatine kinase (CPK-MB) in absence of myocardial injury

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Objective: In the present study we observed the anomalously high CPK-MB activity with normal total CPK activity causing confusion to clinician in making diagnosis of acute myocardial infarction or acute coronary syndrome.

Material and methods: An 88 years old female patient was admitted in department of medicine with complaints of chest pain, shortness of breath and difficulty in breathing. She has been operated for carcinoma of breast (left) in year 2008. She was also having diabetes along with nephropathy. Blood investigations like cardiac markers and Troponin-T were advised as her clinical features were suggestive of acute myocardial injury or acute coronary syndrome. Total CPK enzyme activity was measured by CPK-NAC method and CPK-MB activity was measured by immunoinhibition method using anti M subunit antibodies. %CPK-MB activity was calculated using formula-CPK-MBx100/CPK (Healthy - <4%, Cardiac Injury- 4-25%)

Results: Total CPK and CPK-MB activities were 192U/L (< 200 U/L) and 536 U/L (<25U/L) respectively. In our case the measured CPK-MB activity was very high even higher than the total CPK activity. Our patient demonstrated CPK-MB activity 279% of total CPK activity. Troponin –T test was negative for the patient. LDH enzyme activity was 915 (200-600 U/L) AST enzyme activity was 67(0-50 U/L).

Conclusion: Presence of Macro form of CPK can be of troublesome when elevated CK and CK-MB activity often leads to suspicion of AMI or ACS, especially when patients present with chest symptoms mimicking angina pectoris. The presence of macro enzymes in our case is mainly in the possibility of misinterpretation of blood plasma enzyme activities.

Sharma LK, Barua A, Sharma N. Elevation of myocardial creatine kinase (CPK-MB) in absence of myocardial injury. J Clin Sci Res 2014;3(Suppl 3):A185.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of metabolic syndrome in hypertension

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Objectives: 1. To estimate the incidence of metabolic Syndrome 2. To determine the correlation between Metabolic syndrome and Hypertension.

Material and methods: Inclusion Criteria: 50 Hypertensives attending Shri Sathya Sai Medical College. 23 Males and 27 Females Age group: 35 –55yrs. Controls: 50 Healthy Volunteers.

Exclusion criteria: Hypothyroidism, pCOD, patients on lipid lowering drugs, Anti platelet drugs. Statistical Methodology**:** Cross Sectional; Case Cohort. Waist Circumference was measured mid way between Iliac crest and lower coastal margin.BMI: Weight/Height$^{2.}$ Biochemical parameters, Fasting glucose and Lipid profile were analysed in Photometric assays.

Results: Tools for the study are measures of central tendency and dispersion, Correlation, Regression & Chi-Square Test. These tools were carried out in SPSS Software version 17.Metabolic syndrome was present in (31.6%) subjects; prevalence was (22.9%) in men and (39.9%) in women ($p<0.001$). Most of the participants (about 70%) had one or two additional components of metabolic syndrome.

Conclusions: It is estimated that around 20-25 percent of the world's population have the metabolic syndrome and they are twice as likely to die from and three times as likely to have a heart attack or stroke compared with people without the syndrome. The incidence of Hypertension according to WHO guidelines in India are 23.50, 22.60 in males and females. In addition, people with metabolic syndrome have a fivefold greater risk of developing type 2 diabetes. Metabolic syndrome is now considered to be the driving force for a new CVD epidemic Primary management for the metabolicsyndrome change in lifestyle.

Michael S, Rajagopalan B. Study of metabolic syndrome in hypertension. J Clin Sci Res 2014;3(Suppl 3):A186.

Estimation of microalbuminuria as a marker of increased cardiovascular risk in postmenopausal women

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Aim and objective: Until recently microalbuminuria was thought of as a marker for renal diseases only. However recent studies have highlighted the finding that microalbuminuria appears to be a marker of generalized vascular disease affecting the glomeruli, retina and the intima of large vessels simultaneously. Studies have also found out a relation between microalbuminuria and cardiovascular morbidity and mortality. Microalbuminuria thus can serve as a predictor of atherosclerosis as well. However the extrapolation of this finding to the asymptomatic and apparently normal population remains a controversy. This study finds out the usefulness of microalbuminuria as a marker of incremental risk for cardiovascular disease in postmenopausal women with no cardiovascular symptoms.

Material and methods: The study was carried out over 50 postmenopausal women with no cardiovascular symptoms and age >50 yrs. Morning fasting blood and urine samples were collected. BP was taken to rule out hypertension. Fasting blood glucose, serum urea, creatinine, uric acid and lipid profile along with urinary albumin levels were estimated. Subjects with urine albumin <300 mg/L were considered to have microalbuminuria.

Results: Out of 50 subjects, 21 had microalbuminuria. Values of serum urea, uric acid and creatinine were non-significant in microalbuminuria +ve subjects ($p>0.05$).There is significant elevation of TG, VLDL, TC and LDL in microalbuminuria +ve patients ($p <0.05$).

Conclusion: Microalbuminuria estimation can be used as a marker of increased cardiovascular risk in postmenopausal women with no cardiovascular symptoms.

Sakarde A, Hardas VM, Thorat AP. Estimation of microalbuminuria as a marker of increased cardiovascular risk in postmenopausal women. J Clin Sci Res 2014;3(Suppl 3):A187.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of serum uric acid level in coronary artery disease

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Objective: This study was done to determine the relationship between serum uric acid level and the presence of coronary artery disease (CAD).

Material and methods: A total of fifty patients who had ECG suggestive of coronary event were included. All patients were assessed for the presence of cardiovascular risk factors & ongoing medications. Serum Uric Acid, Creatinine level, lipid profile and Fasting Blood Glucose were measured in all patients. Fifty age & sex matched normal subjects were studied

Result: Out of fifty patients (mean age, 59.4±10.24 years) 34 were men and 16 were women. Of the study patients 69% were hypertensive, 28.9% were diabetic, 30% had a smoking history, 30% had low high density lipoprotein cholesterol levels & 34% had hypertriglyceridaemia. A statistically significant difference in mean Uric Acid concentration was found between patient of CAD and age and sex matched normal subjects. Based on logistic regression analysis, the increased serum Uric Acid level was found to be associated with the presence of CAD in both men and women ($p<0.001$).

Conclusion: In conclusion serum Uric Acid level was found to be positively associated with presence of coronary artery disease.

Kokane S, Murhar BB. Study of serum uric acid level in coronary artery disease. J Clin Sci Res 2014;3(Suppl 3):A188.

Comparison of CPK-MB, uric acid, total cholesterol, HDL-cholesterol, LDL-cholesterol in MI – a case-control study

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Objective: To evaluate whether uric acid is significantly elevated in AMI as compared to normal subjects**.** To compare CPK-MB, uric acid and lipid profile parameters in both cases and controls

Material and methods: It is a case-control study consisting 40 diagnosed cases of acute myocardial infarction and age and sex-matched healthy controls. All cases and controls were taken from the Mc Gann Teaching Hospital, Shimoga attached to Shimoga Institute of Medical Sciences, Shimoga, by applying inclusion and exclusion criteria. Serum levels of uric acid, CPK-MB, total cholesterol (TC), LDL-C, HDL-C were assessed in patients as well as in controls by automated methods. Statistical analysis was done by calculating the median+/-inter-quartile range and Mann-Whitney U-test.

Results: There was elevation of serum uric acid in cases as compared to controls which was statistically significant. Total cholesterol levels were significantly high in cases compared to controls. HDL-C levels were significantly low in cases compared to controls. There was no significant difference with respect to LDL-C levels between cases and controls.

Conclusion: Serum uric acid and total cholesterol levels were significantly elevated in cases and high uric acid levels were associated with high mortality. Hence, serum uric acid can be used as a short-term prognostic marker in patients with MI.

Kumar R, Kumar DV, Gurupadappa K. Comparison of CPK-MB, uric acid, total cholesterol, HDL-cholesterol, LDL-cholesterol in MI – a case-control study. J Clin Sci Res 2014;3(Suppl 3):A189.

Abstracts of Poster Presentations (AMBICON – 2014)

Hyper homocysteinemia in a young adult with stroke

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Introduction and Objectives: Stoke is the third leading cause of death in the world. Stroke in young individual is rare and poses a major problem. The mechanisms of ischemic stroke in young adults are poorly understood. There are several studies to suggest the role of genetic factors and hyperhomocysteinemia predisposing to hypercoagulability states. In this case, a 37 year old male diagnosed as ischemic cerebro vascular accident with markedly elevated fasting serum homocysteine levels is presented.

Material and methods: Fasting serum sample taken by venepuncture. Serum homocysteine levels were measured by fully automated chemiluminescence immunoassay.

Case description and results: In this case, a 37-year-old male, a known smoker and alcoholic presented with weakness of left upper limb, CT scan of brain revealed acute ischemic infarct in right parietal and semi ovale region. He had a markedly elevated fasting serum homocysteine level of 63µmol/L, which responded well with folate supplements.

Conclusion: Hyper homocysteinemia could serve as an important etiological factor in young stroke. Nutritional deficiency plays an important role in hyper homocystenemic condition in this young stroke patient.

Roopavathy JR. Hyper homocysteinemia in a young adult with stroke. J Clin Sci Res 2014;3(Suppl 3):A190.

Hypothyroidism and subclinical hypothyroidism in patients with chronic kidney disease

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Introduction: Earlier studies have showed increased prevalence of thyroid dysfunction in patients with end-stage renal disease. In patients with chronic kidney disease, other than end stage renal disease, there is little known regarding the prevalance of thyroid disorders like hypothyroidism.

Methods: 200 patients with chronic kidney disease were selected for this study who came for routine checkup to the department of biochemistry, central laboratory, GSL general hospital. Thyroid function tests were performed by ELISA method, using a hormone analyser Vidas. Serum creatinine was performed by Jaffe method and GFR was calculated by using cockgroft-Gault formula (in units of mL/min/1.73m^2).

Results: Among 200 subjects,the mean age was 46.5 years and 51.5% of population were women. The prevalence of hypothyroidism is increased with decreased levels of GFR, occurring in 5.5% of subjects with GFR greater than or equal to 90, 11.0 % with GFR 60–89, 20.5% with GFR 45–59, 22.9% with GFR 30–44, and 23.1% with GFR <30 (P values < 0.001). Out of hypothyroid cases, 58% of hypothyroidism cases were considered as subclinical.

Conclusion : Reduced glomerular filtration rate was associated with a increased prevalence of hypothyroidism, with many subclinical cases. Further research should focus on to determine the adverse effects of hypothyroidism in patients with chronic kidney disease, considering a large study population.

Roy P, Rajendra G, Mahapatra GS, Kumar NL.Hypothyroidism and subclinical hypothyroidism in patients with chronic kidney disease. J Clin Sci Res 2014;3(Suppl 3):A191.

Abstracts of Poster Presentations (AMBICON – 2014)

Oxidative stress and antioxidant status in non-alcoholic fatty liver disease with type 2 diabetes mellitus

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is one of the most common causes of fatty liver, chiefly associated with type 2diabetes mellitus (T2DM). Proposed mechanism underlying development of NAFLD is generation of reactive oxygen species (ROS) leading to lipid peroxidation which subsequent activation of inflammatory processes, which lead to progression of disease.

Aim and objectives: To assess oxidative stress and antioxidant status in NAFLD with T2DM and to compare with T2DM and healthy controls by evaluating oxidative stress marker, Malondialdehyde (MDA) and antioxidant status as Ferric reducing ability of plasma (FRAP).

Material and methods: Total of 75 subjects were included and categorized into three groups. Group I-NAFLD with T2DM (n=25), Group II – T2DM (n=25), Group III – healthy controls (n=25). MDA was estimated by thiobarbituric acid reactive substances method and FRAP was estimated by colorimetric method. Data across the groups was analyzed by Analysis of variance (ANOVA) and post hoc test was used to study changes within the groups using SPSS for Windows 11.5.

Results: Significant increase in MDA and FRAP levels, was observed across the groups ($p<0.001$). Group I and Group II had significantly higher MDA and FRAP levels when compared to controls ($p<0.001$). Group I had significantly higher MDA and FRAP levels when compared to Group II ($p<0.001$).

Conclusion: The present study found presence of oxidative stress in NAFLD patients with T2DM as observed by an increase in MDA levels when compared to T2DM and controls. The increase in FRAP levels does not appear to protect against oxidative stress.

Suchitra MM, Sandya Rani B, Pallavi M, Sachan A, Srinivasa Rao PVLN. Oxidative stress and antioxidant status in non-alcoholic fatty liver disease with type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A192.

Study of lipid profile in type 2 diabetes mellitus patients

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Objective: Diabetes mellitus (DM) is a heterogenous metabolic disorder of carbohydrate metabolism characterized by persistent hyperglycemia due to underutilization and overproduction of glucose. This leads to alteration in the lipid profile (dyslipidemia). Dsylipidemia is a major modifiable risk factor for cardiovascular disease in type 2 diabetic patients. The objective of the study is to compare lipid profile of type 2 diabetic patients & age and sex matched healthy controls.

Material and methods: Present study was conducted on 120 subjects aged between 30 to 65 years of which 60 were known type 2 diabetic patients and 60 were age and sex matched healthy controls. Fasting plasma glucose and lipid profile (total cholesterol, HDL-C, TG) parameters were assessed enzymatically using commercially available kits and LDL-C was calculated by Friedewald's formula.

Results: The results revealed that serum total cholesterol, LDL cholesterol and triglycerides were significantly raised ($p<0.0001$) where as HDL cholesterol was significantly lowered ($p<0.0001$) in diabetics when compared to controls. Diabetic males were found to have significantly higher TC, TG, LDL-C levels and significantly lower HDL-C level compared to diabetic females.

Conclusion: Hyperlipidemia is the commonest complication of type 2 diabetes and it predisposes to premature atherosclerosis and macrovascular complications. Hence lipid profile should be considered as an important and essential routine investigation in type 2 DM as it serves as a reliable indicator for coronary risk stratification.

Anveetha P, Prabhakara Rao K, Vamsi Krishna C. Study of lipid profile in type 2 diabetes mellitus patients. J Clin Sci Res 2014;3(Suppl 3):A193.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of ischaemia modified albumin in type 2 diabetes mellitus patients

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Introduction: Ischemia-modified albumin (IMA) is a form of oxidatidatively modified albumin and have recently been investigated as indicator of oxidative stress. It is increased in different disorders, including diabetes mellitus, as a result of hyperglycemia, oxidative stress and hypoxia. The usefulness of the plasma levels of IMA in relation to glycemic control in type 2 diabetes mellitus with complications is compared in this study. Glycemic control is assessed using HbA1c.

Aim of the study: To establish the relation between serum levels of ischemia modified albumin and HbA1c in Type 2 diabetes mellitus patients with and without various complications.

Material and methods: 40 clinically diagnosed Type 2 diabetes mellitus patients with and without various complications of diabetes mellitus served as cases and 20 healthy people served as controls. Serum ischemia modified albumin levels were measured by Albumin cobalt binding assay and HbA1c by Immuno Turbidimetry method.

Results: Diabetic patients had signiûcantly higher level of IMA in comparison with control subjects with a p value of 0.001. Patients with various complications had higher IMA level in comparison with those without any complications with a p value of <0.05.All data are presented in mean ± SD.

Conclusion: The present study indicates that measuring serum IMA can be used as a marker of oxidative stress in diabetic patients. This will aid better prognosis and management of diabetes mellitus.

Andrews D, Suresh Babu P, Tembad MM. Study of ischaemia modified albumin in type 2 diabetes mellitus patients. J Clin Sci Res 2014;3(Suppl 3):A194.

Serum gamma-glutamyl transferase and its relationship with other parameters in pre-diabetic and diabetic states

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Introduction: Serum gamma glutamyl transferase (GGT) is one of the sensitive markers of oxidative stress. Increased oxidative stress leads to ß-cell dysfunction and reduced insulin action. Therefore, serum GGT could reflect several processes relevant to pathogenesis of diabetes. The prevalence of pre-diabetes is more than type 2 diabetes in all ages, sexes, and race/ethnic groups, in almost all parts of the world.

Aims and objectives: 1) To compare serum GGT levels between non diabetic, pre-diabetic and type 2 diabetic subjects. 2) To study the relation between GGT levels and waist hip ratio, BMI, blood pressure and serum lipids.

Material and methods: It was a hospital based cross-sectional study including age and sex matched people who were divided into three groups. GroupA-30non diabetic subjects, Group B -30 pre-diabetic subjects and GroupC-30 type 2 diabetic subjects. Height, weight waist and hip circumference and BP were measured. Waist hip ratio and BMI calculated.FBS, LFT, lipid profile estimated in all subjects in CPC fully automated analyser. GTT was done in all non diabetic subjects.

Results: BMI, WHR, SBP, DBP, GGT, AST, ALT, Total cholesterol, triglycerides, LDL & VLDL were significantly increased & HDL decreased in pre-diabetic and diabetic groups when compared to normals ($p<0.001$) .There was a significantly strong correlation between GGT & FBS in pre-diabetic ($r=0.49$) and diabetic (0.50) groups. A strong positive correlation between triglycerides and GGT($r=0.47$) & a strong negative correlation between HDL and GGT($r=-0.61$) was found in diabetic group. ROC curve analysis of GGT for predicting diabetes showed that GGT was an accurate parameter (area under curve is 0.88).

Conclusion: GGT levels start increasing significantly in the early pre-diabetic stage itself and are linked with the development of pre-diabetes and diabetes**.** The study strongly recommends GGT as an accurate and early test for diabetes and metabolic syndrome.

Manju M, Toora BD, Mishra S, Vithiyavathy. Serum gamma-glutamyl transferase and its relationship with other parameters in pre-diabetic and diabetic states. J Clin Sci Res 2014;3(Suppl 3):A195.

Abstracts of Poster Presentations (AMBICON – 2014)

Serum adenosine deaminase and glycated haemoglobin in type 2 diabetes mellitus

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Objectives: 1) To estimate serum adenosine deaminase activity in type 2 diabetes mellitus. 2) To correlate serum ADA levels with glycated haemoglobin in type 2 diabetes mellitus.

Material and methods: This study consisted of total 60 study subjects (30 type 2 diabetic cases and 30 age and sex matched healthy controls). Cases were selected from outdoor patients of Department of Medicine, Govt. Medical College, Nagpur. Estimation of serum ADA was done by colorimetric method and HbA1c by ion exchange resin method. Blood glucose was estimated with GOD/POD method.

Results: Serum ADA was found significantly higher in cases as compared to controls ($p<0.001$). Mean and standard deviation of serum ADA in cases and controls were 34.2 ± 12.5 and 18.6 ± 5.4 respectively. ADA activity was correlated with HbA1c and positive correlation was found ($r = 0.34$) which was statistically significant ($p<0.05$).

Conclusion: The enzyme adenosine deaminase plays an important role in modulation of insulin action on glucose and lipid metabolism via decreased amount of adenosine. Serum ADA is elevated in the patients with diabetes as compared to controls and there is positive correlation between ADA and HbA1c. Thus serum ADA can be considered as a marker of glycemic status; also it can be used as an indicator of insulin therapy in type 2 diabetic patients.

Tonde D, Mahajan BH. Role of serum adenosine deaminase and glycated haemoglobin in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A196.

Plasma Fibrinogen in type 2 diabeties mellitus patients with metabolic syndrome and its relation with ischaemic heart disease and retinopathy

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Background: Metabolic syndrome or Syndrome X is characterized by hyperlipidemias, increased blood pressure, abdominal obesity and hyperglycemia, which increases the risk of cardiovascular complications. In addition to these, it is also associated with nontraditional risk factor like C- reactive protein, Plasminogen activator and fibrinogen. Whereas in type 2 Diabetes Mellitus is also associated with these nontraditional risk factor, which higher's the risk of developing cardiovascular complications.

Aim and objectives: To evaluate the prevalence of the metabolic syndrome in diabetes mellitus and to study the plasma fibrinogen and its relationship with ischemic heart disease and retinopathy in diabetic mellitus patients with metabolic syndrome.

Material and methods: Hundred diabetic patients were recruited based on the inclusion and exclusion criteria. History of ischemic heart disease and ECG evidence of ischemia was obtained. Retinopathy is diagnosed by direct opthalmoscopy. Fasting glucose, lipid profile and plasma fibrinogen was analyzed. Stastical analysis was done by Chi square test and student't' test.

Results: The prevalence of metabolic syndrome in study population is 58% and is significantly associated with duration of the disease ($p<0.001$). 58 patients have hyperfibrinogenemia and mean fibrinogen level is significantly high in diabetic patient with metabolic syndrome when compared to diabetic without metabolic syndrome ($P<0.001$). Diabetic patient with metabolic syndrome and hyperfibrinogenemia have higher prevalence of ischemic heart disease and retinopathy in comparison with diabetic patients without metabolic syndrome ($P<0.05$).

Conclusion: The prevalence of metabolic syndrome is higher in type 2 Diabetic mellitus patients. The combination of metabolic syndrome and hyperfibrinogenemia increases the risk of developing micro and macro vascular complications.

Satish Kumar D, Mahendra JV. Plasma Fibrinogen in type 2 diabeties mellitus patients with metabolic syndrome and its relation with ischaemic heart disease and retinopathy. J Clin Sci Res 2014;3(Suppl 3):A197.

Study of plasma triglycerides/high density lipoprotein cholesterol ratio (TG/HDL-C) in subjects with and without metabolic syndrome

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Objectives: To estimate lipid profile in subjects selected for the study and to determine the ability ofTG/ HDL-c ratio in identifying subjects with metabolic syndrome.

Material and methods: 292 subjects of age group 20-65yrs,(women=68,men=224) attending General medicine OPD at RRMCH and satisfying inclusion and exclusion criteria were selected for the study. Anthropometric examination was made and relevant biochemical parameters were analysed. The study subjects were divided into two groups based on TG/HDL-c ratio (Group A TG/HDL-c ≥3 and TG/HDL-c <3 in group B).NCEP ATP III criteria was used to categorise subjects with metabolic syndrome. Statistical analysis was performed using Student's t test and results tabulated.

Results: TG/HDL-c ratio was ≥3 in 178 subjects (Group A) & <3 in 114 subjects (Group B). Overall 70% of group A subjects and 28 % of group B subjects had metabolic syndrome. The Triglycerides, Fasting blood sugar, Waist circumference were significantly higher in Group A compared to Group B (P Value for each < 0.001). HDL was significantly lower in Group A than Group B (P Value for each < 0.001). And blood pressure was not significantly, different between the two groups.

Conclusion: TG/HDL-c ratio can be used as a simple, practical, cost effective reliable marker to identify subjects with Metabolic syndrome.

Kshetrimayum V, Usha SMR. Study of plasma triglycerides/high density lipoprotein cholesterol ratio (TG/HDL-C) in subjects with and without metabolic syndrome. J Clin Sci Res 2014;3(Suppl 3):A198.

A correlative study of serum inorganic phosphate concentration and glycated hemoglobin percent in type 2 diabetes mellitus - a hospital based study

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Objective: To study serum inorganic phosphate concentration and glycated hemoglobin percent in patients with type 2 diabetes mellitus. To find the correlation between serum inorganic phosphate level and glycated hemoglobin level in patients with type 2 diabetes mellitus.

Material and methods: The study was carried out on 50 newly diagnosed patients of type 2 diabetes and controls in the Department of Biochemistry, Assam medical college, Dibrugarh. Analyses of blood glucose (fasting and postprandial), HbA1c, serum inorganic phosphate, urea and creatinine concentrations were performed by standard methods using semi automated analyser.

Results: Concentrations of fasting and postprandial blood glucose higher in the diabetic group than controls ($p<0.01$), and the mean HbA1c% was also higher in cases (8.82±1.66%). The mean serum inorganic phosphate concentration in cases was found to be significantly lower than controls (2.68±0.56 vs 3.64±0.42 mg/dl) and $p < 0.01$. Present study revealed an inverse relationship between serum inorganic phosphate concentration and HbA1c% in patients with type 2 DM with a correlation coefficient, $r = -0.81$ substantiated by regression analysis.

Conclusion: There is definite reduction of serum inorganic phosphate concentration in type 2 DM patients and that reduction of serum inorganic phosphate concentration may have a contributing role in the progression of the disease and development of complications of diabetes.

Bora GK, Rajkakati R, Kakati S. A correlative study of serum inorganic phosphate concentration and glycated hemoglobin percent in type 2 diabetes mellitus - a hospital based study. J Clin Sci Res 2014;3(Suppl 3):A199.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of zinc and HbA1c in diabetic microvascular complications

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Aim and Objective: Zinc has a significant role in various physiological metabolisms as it is an important cofactor for numerous enzymes. Alterations in serum concentrations of zinc in type 2 DM has been reported by several studies. We tried to evaluate the association of zinc and HbA1c in diabetic complications. Diabetes and its complications usually lead to increased production of free radicals which disturbs the internal milieu. Antioxidant enzymes like SOD are decreased due to low zinc concentrations resulting in tissue damage and various complications.

Material and Methods: In present study 50 type 2 DM persons diagnosed clinically with micro vascular complications like neuropathy and retinopathy are included as study group and 50 healthy age matched people as control group. Fasting blood samples were collected to analyse Zinc and HbA1C. HbA1C was estimated by HPLC method in D10 analyser .Zinc was analysed by colorimetric kit method.

Results: There was significant decrease in serum concentrations of Zinc in study group when compared to control (70±12.5, 95 ± 20.42) (pd" 0.001) HbA1c was significantly high in study group when compared to control (8.7±4.5, 5.5±1.5) (pd"0.0001).The correlation of HbA1cand zinc was done using Pearsons correlation coefficient and is inversely related r= -0.3.

Conclusion: In DM, HbA1c influences the profile of trace elements especially zinc and can be explained as one of the cause for delayed wound healing especially in patients with complications. Good glycemic control and zinc supplementation can prevent the complications.

Jyothirmayi B, Vasantha M. Study of zinc and HbA1c in diabetic microvascular complications. J Clin Sci Res 2014;3(Suppl 3):A200.

Study of prevalence of gestational diabetes mellitus in Trichy

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Objective: Gestational Diabetes Mellitus (GDM) is associated with maternal and perinatal complications and it contributes to a part of Maternal Mortality Rate (MMR) in India. GDM generally has few symptoms and it is most commonly diagnosed by screening during pregnancy. To study the prevalence of Gestational diabetes mellitus in Trichy, Tamilnadu.

Material and methods: Gestational diabetes mellitus screening was done for 927 pregnant women attending antenatal care (ANC) clinic at MGMGH, Trichy during the study period of October 2013 to August 2014. As per ADA/IADPSG criteria for diagnosis of Gestational diabetes mellitus, all the women were screened with an initial 50 gram one hour glucose challenge test (GCT) and those women who tested positive(>140 mg/dL) then underwent 100gram oral glucose tolerance test(OGTT).

Results: Of the total 927 pregnant women, only 371 underwent the 100gram OGTT. Among them, 86(53.2%) had one abnormal value, 45(27.5%) had two abnormal values and 31(19.3%) had three abnormal values. 16(9.8%) women were found to have GDM in the first trimester (<12 weeks) , 20(12.1%) in the 13-18 weeks, 85(52.2%) in the 19-28 weeks and 43(26.4%) in the third trimester(>28 weeks). The overall prevalence of GDM was 17.5%.

Conclusion: Thus the prevalence of GDM in Trichy is high as compared to the India's prevalence rate of8-22%. As GDM is associated with high risk of perinatal morbidity and mortality, diagnosis of GDM offers opportunity of primary prevention.

Priya A, Begum A. Study of prevalence of gestational diabetes mellitus in Trichy. J Clin Sci Res 2014;3(Suppl 3):A201.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of serum magnesium in newly diagnosed type 2 diabetes mellitus

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Introduction: Diabetes mellitus is one among the most common chronic disease affecting 371 million of adult population world wide in 2012. Magnesium levels are found to play an important role in pathogenesis of diabetic complications.

Aims and objectives: In this study serum magnesium in newly diagnosed type 2 diabetes mellitus cases and nondiabetic controls were estimated

Material and methods: 40 newly diagnosed type2 diabetes mellitus cases and 40 nondiabetic controls were selected in 30-60 years age group based on ADA 2012 guidelines. Fasting venous blood samples were collected and estimated for fasting serum magnesium levels by Calmagite method, fasting serum glucose levels by GOD-POD kit method. Fasting plasma glycated hemoglobin was estimated by boronate affinity assay. Data was analysed using epi info 3.5.4 .

Results: In newly diagnosed type 2 diabetes mellitus cases and controls, mean values obtained respectively were, Mean serum magnesium was 1.41± 0.19 and 2.01± 0.16 mg/dl, Fasting serum glucose was 180.2± 47.6 and 95.8± 10.3 mg/dl, Plasma glycated hemoglobin was 9.53± 0.77 and 5.13±0.54 % respectively. P value < 0.001 In our study we have observed a statistically significant hypomagnesemia in newly diagnosed type 2 diabetes mellitus.

Conclusion: Hypomagnesemia is both a cause and consequence of diabetes mellitus and occurs mainly due to osmotic renal losses. Hypomagnesemia decreases the secretion of insulin from pancreas and increases insulin resistance.

Shobharani B, Madhavi K. Study of serum magnesium in newly diagnosed type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A202.

Serum zinc concentrations and glycated haemoglobin levels in diabetic patients compared with non-diabetics

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Introduction: Diabetes Mellitus is a major public health problem worldwide associated with increased free radicals leading to oxidative stress. Zinc, an essential trace element helps in retarding the oxidative process in Diabetes. It is required for the adequate formation and functions of antioxidant enzymes. HbA1c is a routinely used marker for long term glycemic control. As an indicator for the mean blood glucose, it predicts the risk for the development of diabetic complications in diabetic patients.

Objective: To study and compare the serum zinc and HbA1c levels in diabetic and non-diabetic individuals.

Materials and methods: Serum zinc and HbA1c levels in diabetic and non-diabetic males & females in the age group of 30 to 70 years were studied using standard biochemical methods.

Results and conclusions: Serum zinc level mean was lower (0.0693±0.0139) in Diabetics as compared to controls (0.08138±0.03724) with significant P<0.0209. The level of HbA1c was significant with a mean of (7.15±1.371) in cases as compared to controls (5.61±1.045, P<0.0001). Fasting blood glucose significant with a mean of (187±78.02) in cases and (108.55±30.187, P<0.0001) in controls. Zinc status is associated with the glycemic control of diabetes and zinc may have a beneficial effect in the management of diabetes.

Mamatha V, Shetty HV, Deepa M. Serum zinc concentrations and glycated haemoglobin levels in diabetic patients compared with non-diabetics. J Clin Sci Res 2014;3(Suppl 3):A203.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of vitamin D and HbA1c levels in type 2 diabetes mellitus patients

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Objective: Presence of vitamin D receptors in extraskeletal tissues attracted our attention to determine vitamin D levels in patients of type 2 diabetes mellitus. Thus our objective was to measure vitamin D levels and to evaluate its correlation with HbA1c in patients of type 2 diabetes mellitus.

Material and Methods: This was a cross-sectional study done in the department of Biochemistry, Pt. B.D. Sharma, PGIMS, Rohtak. Thirty patients diagnosed with type 2 diabetes mellitus and thirty age and sex matched healthy controls were enrolled in the study after taking consent. Vitamin D in serum was analysed by ELISA and Glycated hemoglobin (HbA1c) in whole blood was estimated by Latex agglutination inhibition assay in both groups.

Results: The levels of vitamin D were significantly lower ($p < 0.001$) in type 2 diabetes mellitus patients (19.40 ± 4.41 ng/ml) than controls (26.70 ± 4.76 ng/ml) while HbA1c levels were significantly higher ($p < 0.001$) in type 2 diabetes mellitus (7.27 ± 0.41 %) than in controls (4.93 ± 0.30 %).Vitamin D levels were found to be in inverse correlation with HbA1c in diabetic patients ($r = -0.510$; $p < 0.01$).

Conclusion: Our study showed vitamin D deficiency in type 2 diabetes mellitus and a negative correlation between vitamin D levels and HbA1c. This suggests that vitamin D may have a role in pathophysiology of type 2 diabetes mellitus through extra-skeletal vitamin D receptors and its supplementation may influence long term diabetes mellitus control.

Goel R, Chugh K, Ghalaut VS, Kumar HD. Study of vitamin D and HbA1c levels in type 2 diabetes mellitus patients. J Clin Sci Res 2014;3(Suppl 3):A204.

A study on 25-hydroxy vitamin D in patients with type 2 diabetes mellitus

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Objectives: To assess the levels of serum 25-hydroxy vitamin D in patients with Type 2 Diabetes Mellitus and to find the relationship between 25(OH)D levels and fasting glucose in patients with Type 2 Diabetes Mellitus.

Material and methods: This is a case control study conducted after Ethical committee clearance. The Study comprised 60 subjects, of which the cases were 45(22 males, 23 females) and the control group were 15(8 males,7 females).

Inclusion Criteria: Diabetics were diagnosed using ADA (American Diabetes Association) criteria. Group 1(Cases) - Patients with type 2 diabetes mellitus. Group 2(controls) – Age and sex matched controls.

Exclusion criteria: Liver failure, vitamin D deficiency patients, Type 1 diabetes mellitus without complication, Type 2 diabetes mellitus with complication, Obstructive uropathy, chronic glomerulonephritis, malabsorption syndrome, patients taking drugs like barbiturates, phenytoin, Rifampicin, calcium, vitamin D, Pregnant and lactating mothers.

Methods: ELISA- for serum 25- hydroxy vitamin D, GOD- POD for fasting glucose, Modified Jaffe's method for creatinine, ArsenazoIII test for calcium, Ammonium Molybdate method for phosphorus.

Results: The mean 25 Hydroxy vitamin D concentration in patients with Type 2 DM patients was 15.60±3.46ng/ml and in control group was 23.60± 2.84, with a highly significant value (p=0.0001). There was an inverse relationship between fasting glucose and 25 hydroxy vitamin D levels.

Conclusion: Serum 25 hydroxy vitamin D is decreased in Type 2 DM patients (Vitamin D deficiency) Vitamin D levels are being related to glycemic control in Type 2 DM patients. Cautious supplementation with vitamin D may improve glycemic control in Type 2 DM.

Deepa P, Chitraa R. A study on 25-hydroxy vitamin D in patients with type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A205.

Abstracts of Poster Presentations (AMBICON – 2014)

Correlation of nitrosative and oxidative stress in young type 2 diabetic female patients

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Background and Objective: Increased extracellular glucose concentration, a principal feature of diabetes mellitus induces deregulations of reactive oxygen and nitrogen generating pathways. Reactive oxygen & nitrogen species trigger endothelial cell dysfunction through a verity of mechanisms. This case control study aims to

a) Comparing blood sugar, serum nitric oxide metabolites (NO) in between young female diabetic patients and controls.

b) Correlation of serum NO, oxidative stress (FOX2) and antioxidant status (FRAP) in patients.

Material and methods: One hundred six female patients of age group of 30-47 yrs with same number of age and sex matched controls were included in this study. Fasting blood sugar (FBS) was estimated by commercial kits adapted to auto-analyzer Erba 360. Serum NO levels were estimated by Griess method. Serum oxidative stress was estimated by Ferrous oxidation product in xylenol orange version 2 (FOX2), antioxidant status by ferric reducing capacity of serum (FRAP). Data is represented as mean ±SD. Data was analyzed by unpaired student's t test and Pearson's correlation.

Results: Significant difference was observed in serum NO level between patients and controls (1387.6 vs 48$\pm$5.6ìmol/L:p<0.000). Significantly high FOX 2 levels (26.4$\pm$4.6 ìmol/L vs 6.42$\pm$1.8 ìmol/L) and lowerFRAP level was observed in patients as compared to controls (98.86$\pm$3.64 ìmol/L vs4.74$\pm$2.1 ìmol/ L). Positive correlation was observed between FBS, Serum NO and FOX2 level (FBS & NO r=0.908; p0.001,NO & FOX2 r=0.904:p<0.001) and a negative correlation existed between serum NO and FRAP levels.

Conclusion: We observed that serum nitric oxide and serum FOX2 levels increases with rise in blood sugar. There is a negative correlation observed between FBS, NO metabolites and serum FRAP levels.

Padhy R, Rattan R, Swain S, Devi N, Mahapatra S. Correlation of nitrosative and oxidative stress in young type 2 diabetic female patients. J Clin Sci Res 2014;3(Suppl 3):A206.

Inflammatory status in type-2 diabetes mellitus patients with and without cardiac complications

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Objectives:1.To estimate the levels of inflammatory marker (hsCRP) in type-2 diabetes mellitus patients with and without cardiac complications; 2.To find out the correlation between glycated hemoglobin and hsCRP, the inflammatory marker in both the groups.

Material and methods: Type-2 diabetic patients belonging to theage group of 30-75 years were selected from diabetology OPD and cardiology ward. HbA1c and plasma hsCRP were estimated in 60 type-2 diabetic patients without complications and 60 type-2 diabetic patients with cardiac complications.Type-2 diabetic patients with other complications were excluded. Plasma hsCRP was measured by particle enhanced turbidimetric assay and HbA1c by turbidimetric inhibition immunoassay.

Results: HbA1c (p value 0.047) and plasma hsCRP (p value 0.0001) levels were significantly higher in type-2 diabetic patients with cardiac complications. There is also a significant positive correlation between the blood levels of HbA1c and hsCRP with r value 0.216 (p value 0.018) in type-2 diabetic patients.

Conclusion: The results suggest that poor glycemic control, oxidative stress and inflammation contribute to the pathogenesis of diabetic complications. So, hsCRP may be used as a prognostic marker along with hbA1c in all type-2 diabetic patients.

Indhu K, Meenakshi Sundaram AS. Inflammatory status in type-2 diabetes mellitus patients with and without cardiac complications. J Clin Sci Res 2014;3(Suppl 3):A207.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of lipid profile and lipid indices in diabetes mellitus – a case-control study

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Introduction and Objectives: Diabetes mellitus (DM) is a global health problem. The interaction of hyperglycemia and dyslipidemia increases the risk of micro and macrovascular ie cardiovascular complications synergistically. The risk of Coronary artery disease (CAD) in diabetic subjects is increased two to four folds over age matched non-diabetic subjects. So the present study is undertaken to estimate lipid profile and lipid indices in cases and controls.

Material and methods: The study comprises of 60 subjects, 30 diabetic cases and 30 age and sex matched healthy controls. Fasting sample were collected from all the participants and FBS, HbA1c, hsCRP and lipid profile i.e total cholesterol (TC), triglyseride (TG), high density lipoprotein (HDL), low density lipoprotein (LDL) and very low density lipoprotein (VLDL) were analyzed using autoanalyser (BIOSYSTEM A-25). Atherogenic index (AIP), Castelli risk index (CRI) -1 and 2 was calculated.

Results: There was significant increase in serum FBS, HbA1C, hsCRP ($p< 0.0001$), TC, TGs ($p<0.001$), LDL-C ($p<0.05$) in diabetic patients compared to controls. There was significant decrease in serum HDL-C ($p<0.05$) in cases compared to controls. Lipid indices were significantly higher ($p<0.05$) in diabetics compared to controls.

Conclusion: The novel lipid indices Atherogenic index (AI) may be better and cost effective marker for assessing cardiovascular risk in diabetes mellitus patients.

Kavitha MM, Kashinakunti SV, Ambekar JG, Nilima, Hiremath CS . Study of lipid profile and lipid indices in diabetes mellitus – a case control study. J Clin Sci Res 2014;3(Suppl 3):A208.

Study of serum calcium and phosphorus levels in diabetic and non-diabetic individuals

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Introduction: Calcium is a versatile intracellular messenger that is used throughout the life cycle of an organism to control diverse biological processes. There is little data available on the relationship between fasting serum glucose and total serum calcium and phosphorus in diabetic and non diabetic individuals.

Objectives: To study the relationship between fasting blood glucose and total calcium and phosphorus levels in diabetic and non diabetic individuals.

Material and methods: 106 individuals with diabetes and 94 individuals without diabetes were selected to assess the relation between fasting glucose levels and serum calcium and phosphorus levels. Blood glucose, serum calcium and phosphorus were measured using auto analyzer. In patients with hypoalbuminemia, calcium values were assessed after correction.

Results and observation: Serum calcium levels were slightly higher and statistically significant (p value 0.009) in diabetic individuals compared to non diabetic individuals. But in diabetic and non-diabetic individuals mean serum calcium were within normal levels with values 8.94 and 8.64 mg%respectively. The differences in serum phosphorus between diabetic and non diabetic individuals were not statistically significant (p value 0.086).

Conclusion: The small but significant difference in calcium levels between diabetic and non diabetic individuals appear to be due to the disease process. Persistent elevation in serum calcium levels may result in impaired intracellular calcium homeostasis and may contribute to insulin resistance.

Divya AS, Beegum MS. Study of serum calcium and phosphorus levels in diabetic and non-diabetic individuals. J Clin Sci Res 2014;3(Suppl 3):A209.

Abstracts of Poster Presentations (AMBICON – 2014)

Association of atherogenic index of plasma with glycated haemoglobin in type 2 diabetes mellitus

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Background: Atherogenic dyslipidemia in type 2 DM is associated with insulin resistance and impaired insulin secretion. It is defined by Atherogenic index of plasma (AIP) which is well-suited to capture non-LDL-related macrovascular risk.

Objective: To determine the association of AIP with HbA1c in type 2 DM.

Material and methods: This is a cross sectional study involving 173 type 2 DM patients (Male=98 and Female=75) who attended our institute from May 2014 to July 2014. Fasting Plasma Glucose, HbA1c and serum lipids were estimated. LDL-C, TC/HDL-C, LDL-C/HDL-CandAIP [log (TG/HDL-C)] were calculated.

Results: Based on HbA1c level, Patients were divided into two groups: group A Good Glycemic Control HbA1c <7% (n=58), group B Poor Glycemic Control HbA1c>7% (n=115).Group B had significantly higher value of log TG/HDL (0.321 ±0.274Vs 0.004 ± 0.157, p< 0.0001), TG/HDL (6.1±5.9 Vs 2.5 ±0.8, p<0.0001), TG mg/dl (199±153 Vs 109±30, p<0.0001), VLDL mg/dl (40±30 Vs 22±6, p<0.0001) and low HDL mg/dl (37±10Vs 46 ±10, p<0.0001) as compared to Group A. However, there was no significant difference in LDL-C levels and TC/HDL-C between the two groups. HbA1c significantly correlated with AIP- Log TG/ HDL(r= 0.78), TG/HDL(r=0.61), TG(r=0.57), VLDL(r= 0.57) and HDL(r=-0.55).

Conclusion: AIP, which can easily be calculated from standard lipid profile, a surrogate of small LDL particle size, can act as an adjunct of poor glycemic control i.e â cell function loss besides its primary role in predicting the extent of atherogenic dyslipidemia in type 2 DM.

Shiva Laxmi M, Chandran PA, Noorjahan M. Association of atherogenic index of plasma with glycated haemoglobin in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A210.

Relationship between serum magnesium levels in normal individuals and chronic type 2 diabetes mellitus patients with peripheral neuropathy

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Objective: The objective of this study was to find whether there is any relationship between serum magnesium (Mg) levels in normal individuals and prevalent long term type 2 diabetes patients with peripheral neuropathic manifestations.

Material and methods: The selected community was a total of 50 patients who came to diabetic OPD in shree balaji medical college and hospital, chromepet who are a known diabetic for minimum 7-10 years, 25 male patients and 25 female patients, aged 40–65 years. Postprandial serum magnesium levels are measured.

Results: The results showed that in patients with type 2 diabetes with significant neuropathic manifestations, the serum magnesium levels are found to be decreased 0.7- 1.4 meq/L than in normal individuals (1.5 to 3.0 meq/lit).The p value was < 0.01 (significant).

Conclusion: Hence according to the above study,it is being concluded that serum magnesium levels are found to be decreased with patients (Hypomagnesemia) with diabetic neuropathy when compared to normal individuals whose results showed normal magnesium levels. Hence, oral dose of magnesium supplementation can lower the postprandial glucose level and reducing blood sugar levels may subsequently reduce neuropathic manifestations.

Dinesh Kumar R. Relationship between serum magnesium levels in normal individuals and chronic type 2 diabetes mellitus patients with peripheral neuropathy. J Clin Sci Res 2014;3(Suppl 3):A211.

Abstracts of Poster Presentations (AMBICON – 2014)

Association of oxidative stress with HbA1c levels in type 2 diabetes mellitus

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Introduction: Type 2 diabetes mellitus is a chronic non communicable disease associated with altered glucose metabolism. The present study is intended to evaluate the association of HbA1c with MDA and FRAP levels in patients diagnosed with type 2 diabetes mellitus (DM).

Material and methods: 60 subjects were included and categorized into three groups based on oral GTT and HbA1c levels. (Group-I: patients diagnosed with type 2 DM and HbA1c levels >5.9%, group-II: patients diagnosed with DM withHbA1c levels d"5.9% and group III: age and sex matched controls). HbA1c levels, an indicator of glycation status in diabetes mellitus of 4-8 weeks duration measured by HPLC method, MDA as an oxidative stress marker estimated by TBARS method, FRAP as a measure of anti oxidant status by Spectrophotometric method were analyzed in all the subjects.

Results: A significant increase in MDA levels was observed across the study groups ($p<0.001$), whereas FRAP levels were decreased ($p<0.001$) across the study groups. A significant positive correlation was observed between elevated MDA and HbA1c levels in group I ($r=0.645$, $p<0.02$).

Conclusion: The findings of the present study suggest the presence and significant association of oxidative stress with poor control of diabetes mellitus. Hence, antioxidant therapy along with control of blood glucose levels is likely to be useful in the management of diabetes in preventing the development of oxidative stress that has been implicated in several complications like atherosclerosis.

Pemmaraju Venkata AK, Yajamanam N, Mohan A, Kiranmayi VS, Srinivasa Rao PVLN. Association of oxidative stress with HbA1c levels in type 2 diabetes Mellitus. J Clin Sci Res 2014;3(Suppl 3):A212.

Study of association between metabolic syndrome and dysfunctional uterine bleeding

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Objectives: A retrospective study was done among premenopausal women with irregular menstrual bleeding to assess the association between components of MetS (hyperglycemia, hypertension, dyslipidemia) and dysfunctional uterine bleeding (DUB).

Material and methods: 50 women with irregular menstrual bleeding and central obesity were compared to 50 healthy individuals of the same age group of 40-49 years.

Parameters studied

1. Physical Parameters; a) Waist Circumference (WC) b) Blood Pressure, Systolic (SBP) & Diastolic (DBP) 2. Biochemical parameters; a) Fasting Plasma Glucose (FPG) b) Lipid profile. All biochemical parameters were assayed on ERBA CHEM5X semiautoanalyser.

Results: The analysis of WC ($p<0.001$), blood pressure ($p<0.001$), fasting plasma glucose ($p<0.001$), Total Triglycerides ($p<0.001$) and high density lipoprotein cholesterol ($p<0.001$) were statistically highly significant.

Conclusion: Women with DUB had more than twice increased risk ofT2DMand significant rise in prevalence of Waist circumference, hypertension, and dyslipidemia than women without DUB. MetS can be reduced and development of T2DM and CVD can be postponed in premenopausal women with DUB by early screening for components of MetS and making appropriate life style changes at an earlier date.

Yerram S. Study of association between metabolic syndrome and dysfunctional uterine bleeding. J Clin Sci Res 2014;3(Suppl 3):A213.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of serum GGT and ALT levels in type 2 diabetes mellitus

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Objective: To estimate serum GGT and ALT levels in type 2 diabetes mellitus and to correlate it with normal population

Material and methods: This study was conducted in ESIC Hospital . Thirty five patients reporting to the OPD diagnosed for type 2 diabetes between the age group of 50-60 years of both sex [cases] and thirty five healthy age and sex matched individuals [control] were included in the study. Under aseptic precautions blood samples were collected and centrifuged to get serum and were used for estimation. Data were analysed by student t test and values expressed as the mean ± SD and Pearson's correlation coefficient is calculated to evaluate the relationship between 2 groups.

Results: The result of the present study showed that serum GGT and ALT levels are raised in type 2 diabetes but GGT levels was significantly raised($p<0.01$) in type 2 diabetes.

Conclusion : Oxidative stress plays a major role in pathogenesis of Diabetes mellitus and in our study it is found that serum GGT is more reliable marker of oxidative stress than ALT .Hence serum GGT can be used for assessment and monitoring the complications of diabetes.

Kumar S, Pratibha K. Study of serum GGT and ALT levels in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A214.

Study of lipid profile and non-HDL cholesterol as a biomarkers of cardiovascular risk in type 2 diabetes mellitus

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Introduction: Patients with type 2 diabetes have high rates of cardiovascular disease (CVD), much of which maybe preventable with appropriate treatment of dyslipedemia. The reduction of cardiovascular risk by lowering low-density lipoprotein cholesterol (LDL-C)is well documented,and LDL-C remains the main target of lipid lowering therapy. However, not all patients with cardiovascular risk have elevated LDL-C. There is growing recognition that non-high density lipoprotein cholesterol (Non-HDL-C)is strongly related to cardiovascular risk. Non-HDL cholesterol measurement provides a single index of all the atherogenic, apolipoprotein(apo) B–containing lipoproteins- LDL, VLDL, IDL, and lipoprotein(a). Target goal for LDL and non-HDL cholesterol in patients with diabetes are<100 and< 130 mg/dl respectively.

Objective: To study lipid profile and non-HDL cholesterol in patients with type 2 Diabetes mellitus.

Material and methods: A total of 100 diagnosed patients withtype2 Diabetes mellitus attending the diabetic OPD of Indira Gandhi Govt. Medical college &hospital, Nagpur were taken as cases. The lipid profile estimation was done on autoanalyserXL 640,Transasia. Non-HDL cholesterol was calculated by formula Total cholesterol-HDL cholesterol.

Results &Conclusion: This study indicates that non-HDL cholesterol is a strong predictor of cardiovascular risk as compared to LDL cholesterol (Odds Ratio=16.94, 95% C.I. [4.44-92.82], p value <0.0001, highly significant)in type 2 Diabetes mellitus.

Warjukar P, Ghangale S, Iyer CM. Study of lipid profile and non-HDL cholesterol as biomarkers of cardiovascular risk in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A215.

Abstracts of Poster Presentations (AMBICON – 2014)

Correlation between serum leptin levels with body mass index (BMI) in obese women with and without type 2 diabetes mellitus

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Objectives: To ascertain the relationship between serum leptin levels and Body Mass Index in Obese women with and without type 2 Diabetes.

Material and methods: Forty (40) obese women with type 2 Diabetes mellitus (test group) and forty (40) obese women without type 2 diabetes mellitus (control group) were enrolled in the study. In both the groups body mass index , waist circumference , hip circumference , and waist-to-hip ratio were measured .Serum leptin level were measured in both the test and control group.

Results and observation: Leptin was found statistically significantly lower in test group than the control group (20.64±5.64 ng/ml versus 29.14±6.81ng/ml, respectively ;p=0.0001).Leptin was well correlated with BMI in the test group (r=0.476 ,p=0.001) and with the control group (r=0.415, p=.007).Leptin also correlate positively with weight in both the groups.Comparing test group and control group regarding weight, height, waist circumference ,hip circumference ,waist-hip- ratio no difference was observed.

Conclusion: Plasma leptin levels correlate strongly with increased total adipose tissue, a known risk factor for type 2diabetes, yet the role of leptin in the etiology of diabetes remain unclear.Based on above findings, leptin concentration can be considered as a marker of the extent of obesity in humans.

Chetry N, Rohman SM, Correlation between serum leptin levels with Body Mass Index (BMI) in obese women with and without type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A216.

Study of uric acid levels and estimated glomerular filtration rate (eGFR) in diabetic and non diabetic individuals

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Introduction: Hyperuricemia is associated with type 2 diabetes mellitus in many studies. But study related to serum uric acid levels, eGFR and blood glucose levels in DM Type II is less. Hence this study is undertaken.

Objective: To study relation between blood glucose levels, uric acid levels and eGFR in diabetic and non diabetic individuals.

Material and methods: Hundred diabetic and hundred non diabetic individuals were selected to assess relation between blood sugar levels and eGFR, uric acid levels. Blood glucose, uric acid, creatinine measured using auto analyzer. eGFR estimated using Mayo Quadratic Formula.

Results and observations: Percentage of diabetic individuals with hypouricemia were 57% and non diabetic were 43%.Uric acid levels were negatively correlated with sugar values. ($p< 0.05$)Mean uric acid levels of diabetic – 3.8 ± 1.5 and that of non diabetic – 4.2 ± 1.7. Significant negative correlation was found between uric acid level and eGFR ($p < 0.05$).

Conclusion: Many studies shows that DM associated with hyperuricemia, but this study shows there is negative correlation between uric acid and diabetic status, it may be due to hyper filtration of uric acid or some other reason.

Jyothsna S, Beegum MS. Study of uric acid levels and estimated glomerular filtration rate (eGFR) in diabetic and non diabetic individuals. J Clin Sci Res 2014;3(Suppl 3):A217.

Abstracts of Poster Presentations (AMBICON – 2014)

Evaluation of antidiabetic effect of *Momordica charantia* juice in healthy and diabetic rats

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Background and objectives: Pharmacotherapeutic interventions in diabetes are expensive and associated with adverse effects hence the need for alternate treatment modalities. Momordica charantia is widely used as food and medicine by both diabetic and healthy people. The present study therefore aimed to investigate thehypoglycaemic effect of MC in both healthy and diabetic subjects using laboratory animal modeland its potency will be compared with a standard antidiabetic drug like pioglitazone.

Methodology: Albino rats were divided into 5 groups; Group 1(normal controls), Group 2(normal controls fed with bitter melon juice) Group 3(diabetic controls), Group 4(diabetic rats treated with bitter melon juice (BMJ) and Group 5(diabetic rats treated with pioglitazone). Type 1 Diabetes was induced by intraperitoneal injection of streptozotocin to group 3, 4 and 5.The Blood glucose level on the 3rd day following injection was considered as day 0. Blood glucose levels were estimated on day 0, 7, 14 21 and 28 days. Fasting blood glucose was estimated by glucose oxidase assay. Results were analyzed by one way ANOVA test.

Result: There was significant reduction in blood glucose levelsin group 2 rats when compared to normal controls.BMJ significantly reduced blood glucose levels in group 4 as compared to pioglitazone (p=0.05).

Conclusion: Blood glucose level in both group 1 and 2 remained within the normal range thus emphasising the role of BMJ in modulating the blood glucose.BMJ consumed over a period of time may prove useful in prevention and treatment of diabetes.

Swetha C, Akila P, Prashant V, Devananda D, Suma MN. Evaluation of antidiabetic effect of Momordica charantia juice in healthy and diabetic rats. J Clin Sci Res 2014;3(Suppl 3):A218.

Study of serum cystatin-C and microalbuminuria in type 2 diabetes mellitus

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Background: Diabetic kidney disease (DKD) is one of the most serious microvascular complications which significantly impacts morbidity, mortality and quality of life. DKD occurs in one third of all diabetics and is the leading cause of renal failure. The onset of DKD is signaled by microalbuminuria (Albumin/Creatinine ratio ACR = 30 to d" 300 mg/g) which is a risk factor in Type-2 Diabetic patients which progress to end stage renal disease.Cystatin-C has been identified as a new marker for early detection of renal damage and is more sensitive than creatinine.

Aim of the study: To study the usefulness of cystatin-C & microalbuminuria as early biomarkers of DKD in Type-2 Diabetes Mellitus.

Objectives:

1. To estimate the concentrations of serum cystatin-C and microalbuminuria in Type-2 Diabetes Mellitus and healthy controls.
2. To evaluate the correlation between serum cystatin-C and microalbuminuria as biomarkers in the diagnosis of DKD in type-2 Diabetics.

Methodology: In this study of 50 type-2 Diabetic patients and an equal number of age and sex matched healthy controls from whom blood was collected after overnight fasting and 24 hour urine sample also collected. Blood glucose, urea, creatinine, Cystatin-C, HbA1c and microalbuminuria were estimated by GOD, GLDH-Urease, Jaffe's and nephelometry methods, respectively. Appropriate statistical analysis was done.

Results:There was a significant positive correlation of serum cystatin-C (1.56 ± 0.76mg/dl) with FBG, HbA1C, urea, creatinine and microalbuminuria (175.04 ± 91.960 mg/l) and negative correlation with eGFR (34.76 ± 17.159ml/min) in type-2 Diabetes patients. (p value <0.001)

Conclusion: This study concludes that estimations of the serum cystatin – C enable the early detectionof DKD in patients with type-2 Diabetes Mellitus.

Shabnam S, Mallikarjun CR, Peersab MP. Study of serum cystatin-C and microalbuminuria in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A219.

Abstracts of Poster Presentations (AMBICON – 2014)

Association of serum uric acid with anthropometric variables, HbA1c and lipid profile in diabetic retinopathy

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Introduction: Diabetic Retinopathy (DR), one of the leading cause of visual impairment in adults is a kind of serious microvascular complication of diabetes mellitus. The present study was taken up to estimate and compare anthropometric and Biochemical parameters in Diabetic retinopathy patients, Diabetes without retinopathy and Non diabetes subjects and correlate serum uric acid levels with anthropometric and biochemical indices in DR.

Materials and Methods: Study group consisted total of 150 subjects divided into three groups- Group I (Clinically proven healthy controls), Group II (type 2 DM without retinopathy) and Group III (Diabetic retinopathy), visiting RL Jalappa hospital and Research centre Kolar. Anthropometric & Biochemical parameters were estimated by standard methods.

Results: Comparison of Anthropometric & Biochemical parameters were done between the three Groups, we observed Age, Obesity index, FBS, HbA1c, Total Cholesterol, HDL, LDL & Uric acid with significant p value <0.05 and also positive correlation was observed for BMI, TC, HDL & LDL with Uric Acid in Group III.

Conclusion: Hyperglcemia and oxidative stress in Type 2 DM leads to micro and macrovascular complications. In Group III, there was positive correlation of serum Uric Acid with Anthropometric & Biochemical Indices. Therefore uric acid can be considered as a reliable marker which is less expensive and helps clinicians in controlling the progression of DM to microvascular complications like DR.

Munilakshmi U, Prabhavathi K, Shashidhar KN, Madhavi Reddy, Lakshmaiah V. Association of serum uric acid with anthropometric variables, HbA1c and lipid profile in diabetic retinopathy. J Clin Sci Res 2014;3(Suppl 3):A220.

Study of serum homocysteine and microalbuminuria in patients of type 2 diabetes mellitus

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Objective: Serum total homocysteine has been recognized as an atherogenic factor promoting oxidative stress, inflammation, thrombosis, endothelial dysfunction and cell proliferation.Normal kidney metabolism and filtration plays aprominent role in removing homocysteine from the blood. Diabetic nephropathy is associated with an increased riskof cardiovasculardisease. Type II Diabetes patients with microalbuminuria have 10-20 times greater risk of developing diabetic nephropathy. So objectives of our study are to determine total homocysteine and microalbuminuria levels in patients of type 2 diabetes and to study correlation of microalbuminuria with homocysteine.

Material and methods: Total 100 type 2 diabetics visiting Government Medical College and Hospital, Aurangabad were assessed & compared with normal 50 subjects without Diabetes. Diabetics were grouped as 50 patients with complications (Diabetic Nephropathy and Cardiovascular Diseases), and 50 patients without complication. Serum homocysteine, HbA1c, microalbuminuria and lipid profile levels were measured.

Results: Results were expressed as mean ± SD. ($p<0.05$) is considered statistically significant. Serum total homocysteine concentrations (µmol/L) and urinary microalbumin were significantly higher in type II diabetics with complications as compared to those without complication and controls. Urinary microalbumin had a significantpositive correlation with homocysteine.

Conclusion: Higher levels of serum homocysteine were associated with complications of type II diabetes especially Cardiovascular Diseases and nephropathy.Serum homocysteine may not only be a result but also a factor leading to the development of diabeticvascular complications.

Gulajkar S, Gadhiya B, Thorat AP. Study of serum homocysteine and microalbuminuria in patients of type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A221.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of C-reactive protein and sialic acid in type 2 diabetes mellitus

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Introduction: Role of inflammation has been proven in development of type 2 diabetes. Inflammatory biomarker like C-reactive protein (CRP) which is a mediator of acute phase response shown to be elevated in type 2 diabetes.Several studies shown that Sialic acid which is a cellular constituents of glycoprotein is elevated in type 2 Diabetes. The present study is designed to know whether sialic acid has any role as inflammatory marker and to correlate with CRP in type 2 diabetes.

Oblectives: To estimate serum sialic acid and CRP levels in type 2 diabetes.To correlate the serum sialic acid and CRP levels with Fasting blood sugar in type 2 diabetes.

Material and methods: Study was conducted on 50 cases of type 2 diabetes with equal number of age and sex matched healthy controls. Fasting Blood Sugar was estimated by GOD-POD method. Serum Sialic acid was measured by Warren's TBA method using Thiobarbuturic acid Serum CRP was measured by Immunoturbidimetric method.

Results: There was significant increase in serum sialic acid ($p<0.001$) and CRP levels ($p<0.001$) in cases compared to controls. Serum sialic acid and CRP correlated positively with fasting plasma glucose and a positive correlation was also seen between serum sialic acid and CRP.

Conclusion: The elevated levels of serum CRP proves the inflammatory pathology involved in type 2 diabetes. The positive correlation of serum Sialic acid with CRP levels supports the possible role of sialic acid as inflammatory marker in the pathogenesis of type 2 diabetes.

Patil R, Awanti SM. Study of C-reactive protein and sialic acid in type 2 diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A222.

A study of lipid profile in young adult hypertensive stroke / cerebro vascular accident patients

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Background: Cerebrovascular accident (CVA) is one of the leading causes of death and disability through out the world.in india about substantial proportion of all stroke cases occur in young. CVA has association with hypertension, diabetes melitus, dyslipidemia, smoking, alcoholism leading to vascular abnormalities.

Aim and objectives: To assess biochemical parameters like total cholesterol (TC), high density lipoproteins (HDL), low density lipoproteins (LDL) in CVA patients with hypertension

Material and methods: Study was conducted among ten cases of clinically diagnosed cva pts with hypertension (BP >130/84mmhg), in a age group of 25-49 years admitted at king george hospital, visakhapatnam. evaluation of lipid profile – TC, HDL, LDL were done by standard technique.

Results: There was a marked rise of total cholesterol, LDL levels and marked decrease of HDL levels among subjects.

Conclusion: This study concludes that storke/cva in young adults is closely associated with underlying risk factor like high blood pressure, dyslipidemia, modification of which may curtail the risk of stroke among the said population as primary prevention.

Manjusha K, Rajkumari DMM. A study of lipid profile in young adult hypertensive stroke / cerebro vascular accident patients. J Clin Sci Res 2014;3(Suppl 3):A223.

Abstracts of Poster Presentations (AMBICON – 2014)

Evaluation of procalcitonin and blood culture in suspected cases with bacterial sepsis

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Objective: To evaluate Procalcitonin (PCT) levels and Blood culture in suspected cases of Bacterial Sepsis.

Material and methods: 134 cases of suspected Bacterial sepsis were included in the study. Diagnosis of suspected bacterial sepsis was made based on clinical features and haematological findings. This was a retrospective study. Only those patients were included in the study for whom PCT and blood culture were done.

Results: Out of the 134 cases, 61 cases showed elevated levels of PCT when cut of > 2 ng/ml was taken as positive for bacterial sepsis. Out of the 134 cases, 16 cases were positive for bacterial culture. The sensitivity of PCT was found to be 45 %. The sensitivity of blood culture was found to be 12 %. The sensitivity for diagnosing Bacterial culture increases to 45 % when blood culture is combined with PCT in diagnosing bacterial sepsis.

Conclusion: PCT should be combined with blood culture in diagnosing cases of bacterial sepsis.

Nanda SK, Kanungo R. Evaluation of procalcitonin and blood culture in suspected cases of bacterial sepsis. J Clin Sci Res 2014;3(Suppl 3):A224.

Procalcitonin levels in sepsis

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Objective: Procalcitonin (PCT) belongs to the calcitonin superfamily of peptides. It is the precursor of calcitonin in healthy and non-infected individuals. In inflammatory states, particularly in response to infectious stimuli, local procalcitonin production rises, and since the tissues cannot further process procalcitonin to calcitonin, the levels increase in serum acting as marker of inflammation. Monitoring the levels of inflammatory markers plays an important role in treatment of septic patients. Compared to C-reactive protein (CRP), PCT is a stable marker whose concentration is not affected by neutropenia and immunodeficiency conditions. Objective of the study was to compare and correlate PCT and CRP levels with neutrophil count in septic patients.

Methods: 30 diagnosed cases of Sepsis, within the age group of 30-60 yrs were selected from ICU as study group while 30 healthy individuals acted as control group. Blood samples were analysed for Procalcitonin levels by Electrochemiluminescence and CRP levels by Immunoassay method. Neutrophil count was obtained from haematology cell counter.

Result: Levels of PCT, CRP and neutrophil count were raised in study group compared to control group. Positive correlation was found between PCT levels and neutrophil count, whereas significant co-relation was found between CRP and neutrophil count. PCT levels co-related strongly with CRP levels.

Conclusion: Procalcitonin can be used as an inflammatory marker for sepsis, as the levels positively co-related with the conventional markers of sepsis.

Singh V, Badade ZG, Gawali S. Procalcitonin levels in sepsis. J Clin Sci Res 2014;3(Suppl 3):A225.

Abstracts of Poster Presentations (AMBICON – 2014)

Renal parameters in acute hepatitis A cases

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Objectives: Acute hepatitis A, one of the most common infectious diseases affecting liver is a self limiting disease. Extrahepatic manifestations are uncommon but some cases have been reported associated with acute renal failure (ARF). Hepatocellular failure induces functional renal failure. Awareness of the potential renal involvement of hepatitis virus infection has become need.

Aim of the study: To compare and co-relate the serum levels of total bilirubin and alanine aminotransferase (ALT) with blood urea nitrogen(BUN) and creatinine levels.

Methodlogy: 40 patients diagnosed with Acute Hepatitis A, within age group of 30-60 yrs were selected. Blood samples were collected on day1, day 6 and day12 of hospitalisation and analysed for Total Bilirubin, Alanine aminotransferase (ALT), Blood Urea Nitrogen (BUN) and Creatinine by commercial kit on Autoanalyzer. These biochemical parameters on day1, 6 and 12 were compared and co-related statistically.

Result: Serum total bilirubin (13.7$\pm$2.5) was increased on day 1which further declined on day 6 (12.8$\pm$1.92) while significant decrease was observed on day12 (9.7$\pm$2.2, $p<0.0001$). Serum creatinine (2.54$\pm$1.2) and BUN (42.6±25.4) on day1 showed statistically significant increase on day 6, creatinine (3.8$\pm$1.34) and BUN (69.1±26) ($p < 0.05$), which remained elevated even on day 12, but showed insignificant difference when compared to day 1 levels ($p>0.05$). Strong positive correlation was observed on day 6 between Total bilirubin with levels of creatinine ($r=0.523$) and BUN ($r=0.405$)

Conclusion: Hyperbilirubinemia may be considered as one of the cause of functional renal impairment in Acute Hepatitis A infection.

Wadalkar S, Deepak AD, Samant P, Gawali S. Renal parameters in acute hepatitis A cases. J Clin Sci Res 2014;3(Suppl 3):A226.

Electrolyte disturbances in children with dengue infection

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Department of Biochemistry, Government Medical College, Anantapuram

Introduction:-Dengue infection is the most rapidly spreading mosquito born viral disease in the world and an estimated 50 million dengue infections occur annually.

Objectives:-To study the serum electrolytes levels before starting intravenous fluid therapy.

Materials and methods:- The samples were collected from Govt medical college and hospital Anantapuramu.61 serologically positive dengue cases with age group 5yr-18yrs are the subjects. In all subjects the serum electrolytes were estimated by electrolyte test kit method by using semi autoanalyzer.

Results:-The mean serum sodium, potassium and chloride levels in children with dengue fever are 133.4+/ -5.8.3.36+/-0.45 and 97.52+/5.18 respectively.

Conclusion: Mild hyponatremia and hypokalemia is a common electrolyte disturbance in children with dengue fever. There is a mild hypochloremia also observed. This study also gives a guide for Intravenous fluid therapy.

Bhagyamma SN, Sreenivasulu U. Electrolyte disturbances in children with dengue infection. J Clin Sci Res 2014;3(Suppl 3):A227.

Abstracts of Poster Presentations (AMBICON – 2014)

Role of vitamin D in pulmonary tuberculosis

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Objective: Vitamin D enhances host protective immune responses to Mycobacterium tuberculosis by suppressing Interferon-gamma (IFN-g) and reducing disease associated inflammation in the host. The objectives of this study were to determine whether vitamin D supplementation to patients with tuberculosis (TB) could influence recovery.

Material and methods: One hundred and patients with pulmonary TB were randomized to receive either 600,000 IU of Intramuscular vitamin D_3 or placebo for 2 doses. Assessments were performed at 4, 8 and 12 weeks. Early secreted and T cell activated 6 kDa (ESAT6) and Mycobacterium tuberculosis sonicate (MTBs) antigen induced whole blood stimulated IFN-g responses were measured at 0 and 12 weeks. Statistical comparisons between outcome variables at 0 and 12 weeks were performed using Student's t-test and Chi^2 tests.

Results: After 12 weeks, the vitamin D supplemented arm demonstrated significantly greater mean weight gain (kg) + 3.75, (3.16 – 4.34) versus + 2.61 (95% CI 1.99 – 3.23) p 0.009 and lesser residual disease by chest radiograph; number of zones involved 1.35 v/s 1.82 p 0.004 (95% CI 0.15, 0.79) and 50% or greater reduction in cavity size 106 (89.8%) v/s 111 (94.8%), p 0.035. Vitamin D supplementation led to significant increase in MTBs-induced IFN-g secretion in patients with baseline 'Deficient' 25-hydroxyvitamin D serum levels (p 0.021).

Conclusion: Supplementation with high doses of vitamin D accelerated clinical, radiographic improvement in all TB patients and increased host immune activation in patients with baseline 'Deficient' serum vitamin D levels. These results suggest a therapeutic role for vitamin D in the treatment of TB.

Keshari JR, Uday Kumar. Role of vitamin D in pulmonary tuberculosis. J Clin Sci Res 2014;3(Suppl 3):A228.

Reproductive hormones in HIV seropositive females

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Objective: To estimate levels of testosterone, estrogen and progesterone in HIV seropositive females and to correlate these with CD4+ cell counts.

Material and methods: The present study was conducted in the Department of Biochemistry in collaboration with Department of Microbiology; PGIMS, Rohtak. Fourty seven known females of HIV infection coming to ICTC for diagnosis of HIV infection and those attending ART centre for CD4 monitoring were taken along with fourty seven age and sex matched controls. An informed written consent was taken from the patients. CD4 cell counts weredone by flow cytometry and serum estrogen, progesterone and testosterone by chemiluminescence technology. Cases were divided into three groups on the basis of baseline CD4 cell counts as group A-CD4 cell counts < 200/mm3; Group B-CD4 cell counts 200-350/mm3; Group C-CD4 cell counts > 350/mm3. In female patients samples were taken on the second day of menstrual cycle.

Inclusion criteria and exclusion criteria

1. Age group 15-45 years. 1. Pregnancy. 2.Intake of ART, steroids or drugs known to affect hypothalamo-pituitary-gonadal axis. 3. New opportunistic infection within 4 weeks of study. 4. Patients with liver disease, DM, CRF, asthma etc.

Results: Significant decrease in testosterone level was seen in cases than controls in females (p value 0.001). Estrogen and progesterone levels were decreased non-significantly in female cases. Significant correlation was found in testosterone levels with CD4 + cell counts. Correlation was also found between BMI & testosterone levels.

Conclusion: Reproductive hormones decrease in HIV infection.

Kumari A, Seth S, Choudhary U, Ghalaut V S, Bansal P, Kulshreshtha MR. Reproductive hormones in HIV seropositive females. J Clin Sci Res 2014;3(Suppl 3):A229.

Abstracts of Poster Presentations (AMBICON – 2014)

Serum copper levels in patients with rheumatoid arthritis and osteoarthritis

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Aim: To measure serum copper (Cu) in patients with rheumatoid arthritis (RA) and osteoarthritis (OA) in comparison with healthy controls and to know its correlation with the overall disease activity in these patients. The role of Cu in RA has been of interest because of abnormally high cu levels in patients with RA. Most of the Cu is tightly bound to a specific carrier protein ceruloplasmin. This protein is known to behave as an acute phase reactant which increases nonspecifically in response to inflammation. RA is a chronic inflammatory disease with acute exacerbations and increase in acute phase proteins. Hence serum cu increases secondary to increased concentrations of ceruloplasmin and this correlated significantly with CRP and ESR.

Material and methods: 20 clinically diagnosed RA, 20 OA patients and 20 healthy controls were taken and their serum cu levels were measured using colorimetric method. T test has been applied for the data between the groups and Pearson correlation analysis has been done to find out the association and p value of <0.05 was considered significant.

Results: Significant elevation in mean serum cu values in RA group when compared to control groups with a p value <0.001. No difference noted between OA and control group with a p value of 0.1. The relationship between serum Cu and disease activity (CRP) was found highly significant with r value of 0.9 and p value of <0.001.

Conclusion: Based on the above result we can suggest that serum Cu might provide an additional and useful laboratory marker for the assessment of disease activity in RA.

Sahana GR, Sahukar SR, Tembad MM. Serum copper levels in patients with rheumatoid arthritis and osteoarthritis. J Clin Sci Res 2014;3(Suppl 3):A230.

Serum GDF-15 levels in patients with ulcerative colitis

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Background: Hepcidin is the central regulator of iron homeostasis. Our previous work has shown that serum hepcidin levels were decreased in patients with ulcerative colitis. Growth differentiation factor-15 (GDF-15) is a known negative regulator of hepcidin.

Aim: The aim of the study was to test the hypothesis that serum GDF-15 levels may be increased in patients with ulcerative colitis (UC), thus accounting for decreased levels of hepcidin in such patients and to determine whether it correlates with hemoglobin and markers of iron status (serum iron and ferritin).

Material and methods: Twenty patients diagnosed with UC, who were not on iron supplements or erythropoietin therapy, served as cases. Twenty age and gender-matched non-anaemic patients, who underwent upper gastrointestinal endoscopy for evaluation of dyspepsia and who were found to have no endoscopic abnormalities served as controls. A blood sample collected from each subject, after obtaining informed consent, was used to estimate haematological parameters and serum levels of GDF-15, iron, ferritin, and C-reactive protein (CRP).

Results: Serum GDF-15 levels were significantly higher (912.8 ± 430 pg/mL Vs 623.7 ± 285 pg/mL) and hemoglobin levels significantly lower in patients with UC, when compared to control subjects. Levels of GDF-15 and haemoglobin showed a negative correlation with one another.

Conclusion: Serum GDF-15 levels were increased in patients with UC. Such raised levels may account for decreased hepcidin levels that have been observed in such patients.

Jagadish C, Varghese J, Joseph AJ, Jeyaseelan V, Jacob M. Serum GDF-15 levels in patients with ulcerative colitis. J Clin Sci Res 2014;3(Suppl 3):A231.

Abstracts of Poster Presentations (AMBICON – 2014)

Severe hyperbilirubinemia: a case report

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Introduction: Jaundice in adults may be caused by benign to life threatening diseases. Conjugated hyperbilirubinemia usually suggests hepato-biliary disease whereas isolated increase in unconjugated fraction is rarely due to liver disease. The commonest benign cause of cholestatic hyperbilirubinemia is cholelithiasis with the maximum bilirubin level seldom above 15.0 mg/dL. Bilirubin levels above 20 mg/dL suggest the possibility of neoplastic obstruction.

Case presentation: A 40 years old male, chronic alcoholic for past 25 years presented with jaundice, right upper quadrant colicky abdominal pain associated with vomiting, flatulence, dark colored urine and clay colored stools since one month.

Patient was deeply icteric with hepato-splenomegaly, altered sensorium and was hemodynamically unstable. Intravenous fluid and vasopressors were administered. Nasogastric tube drainage revealed GI bleeding.

Laboratory investigations showed Total Bilirubin 72 mg%, Direct 56 mg%, AST 146 IU/L, ALT 62 IU/L, ALP 354 IU/L, BUN 44 mg% and Creatinine 3.0 mg%, Hemoglobin 6.7 gm%, Platelet count 98,000 /ìL, Prothrombin Time 30 seconds and 2.5 INR. Serum markers for HBV, HBA and HBC were negative. USG and CT abdomen showed cholecystitis, chlolelithiasis, dilated common bile duct & intra hepatic biliary radicals with porta-hepatic lymphadenopathy. Patient's condition continued to deteriorate and death occurred on 3rd day of admission.

Conclusion: Extensive literature search didn't reveal earlier reports of such severe hyperbilirubinemia. In this case it could be due to simultaneous occurrence of alcoholic steatohepatitis & Cholelithiasis. Although not shown by radiological findings, possibility of hepato-biliary or pancreatic malignancy cannot be ruled out.

Raul N, Ingale P. Severe hyperbilirubinemia: a case report. J Clin Sci Res 2014;3(Suppl 3):A232.

Study of hyponatremia in patients with cirrhosis of liver

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Introduction: Hyponatremia is a common finding in patients with decompensated cirrhosis due to an abnormalregulation of body fluid homeostasis. Low serum sodium concentration is an independent predictor of mortality in patients with cirrhosis.

Aims and Objectives: The aim of this study is to study the prevalence of hyponatremia in cirrhosis and evaluate the association between the serum sodium levels and the severity of complications in liver cirrhosis.

Material and methods: The serum sodium levels were analyzed by ISE in 20 diagnosed patients of cirrhosis liver in King George Hospital, Visakhapatnam. 20 healthy subjects were also included to compare the electrolyte levels. Results are presented as Mean$\pm$SD and compared by students t-test & ANOVA.

Results: The prevalence of dilutional Hyponatremia, classified as serum sodium concentrations of < 135 mEq/L and $\leq$130 mEq/L were 34% & 24% respectively. The serum sodium level was strongly associated with the severity of liver function impairment as assessed by Child-Pugh score ($p< 0.0001$). Sodium levels less than 130 mEq/L indicated existence of grade III or higher hepatic encephalopathy ($p<0.0001$) and hepatorenal syndrome ($p <0.0113$) Frequency was also increased in patients with mild reduction in serum sodium levels (131 – 135 mEq/L).

Conclusions: Dilutional hyponatremia is frequent in cirrhotic patients and low serum sodium levels in cirrhosis are associated with severe complications of liver cirrhosis like hepatic encephalopathy hepatorenal syndrome ad high morbidity and mortality. Treatment of hyponatremia is important to prevent possible complications of liver cirrhosis.

Konal D, Rajkumari DMM. Study of hyponatremia in patients with cirrhosis of liver. J Clin Sci Res 2014;3(Suppl 3):A233.

Multiple myeloma presenting as a clavicular swelling

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Introduction: Multiple myeloma is a proliferative disease of plasma cells. It is a malignant disorder characterized by proliferation of single clone of plasma cells derived from B-cells in the bone marrow. The plasma cell clone produces a monoclonal M-protein.

Prevalence of the disease is low constitutes 1% of all cancers. Incidence rises after the age of 60yrs. Male: Female incidence is 2:1.

Case Report:A 63-yr-old male presented with the complaints of swelling in the right side of the clavicular region since 1yr. The swelling is small in size and was associated with pain. Later it gradually increased in size and not associated with pain. He has a history of chronic kidney disease and no past history of TB. On examination size of the swelling 5x3cm noted in right medial end of clavicle.

CT scan showed destruction of medial end of the right clavicle with adjacent soft tissue. Lytic lesions proved to be plasmacytoma. FNAC report revealed plasma cells rich infiltration with few binucleated forms suggestive of plasma cell myeloma. Biochemical investigations were serum total protein- 7.6gm/dL, serum albumin- 2.4gm/dL, globulins- 5.2gm/dL, serum creatinine - 1.3 mg/dL. Serum agarose gel electrophoresis was done which showed the characteristic 'M' band in the ã region.

Conclusion: Serum electrophoresis can be routinely used for the diagnosis of multiple myeloma and is well correlated with biochemical, radiologicaland pathological findings.Based on the investigations and the electrophoretic pattern this is a case of multiple myeloma presenting as a clavicular swelling.

Kiranmai G, RajKumari DMM. Multiple myeloma presenting as a clavicular swelling. J Clin Sci Res 2014;3(Suppl 3):A234.

Association of high-normal serum uric acid levels with abnormal lipid profile and high atherogenic index of plasma in apparently healthy south Indian males

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Objective: The objective of this study was to investigate abnormalities in lipid profile and atherogenic index of plasma among apparentlyhealthy males with normal serum uric acid (SUA) levels.

Material and methods: A retrospective study was conducted using hospital records of 504 adult males having normal serum uric acid levels that came for routine health check-up. The subjects were divided into 4 quartiles: Q1 (n=198, 3.5-4.3 mg/dl), Q2 (n=107, 4.4-5.1 mg/dl), Q3 (n=89, 5.2-5.9 mg/dl) and Q4 (n=110, 6.0-7.0 mg/dl). For each patient, total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C) and triglycerides (TG) in serum were noted and using the data total cholesterol to HDL-C ratio (TC/HDL-C), triglyceride to HDL-C ratio (TG/HDL-C), LDL-C/HDL-C ratio and atherogenic index of plasma (AIP) were calculated.

Results: The mean values of TC/HDL-C, TG/HDL-C, LDL-C/HDL-C and AIP increased gradually with increasing SUA levels. In Q4,the levels of TC ($p < 0.001$ vs Q1 and Q2), TG ($p < 0.001$ vs Q1 and Q2), LDL-C ($p = 0.001$ vs Q1 and $p = 0.022$ vs Q2) TC/HDL-C ($p < 0.001$ vs Q1 and Q2), TG/HDL-C ($p < 0.001$ vs Q1 and Q2), LDL-C/HDL-C ($p < 0.001$ vs Q1 and Q2) and AIP ($p < 0.001$ vs Q1 and Q2) were significantly higher compared to both Q1 and Q2. There was no significant difference in HDL-C values between four quartiles ($p = 0.112$).Higher percentage of subjects had undesirable TC/HDL-C, TG/HDL-C, LDL-C/HDL-C and AIP in Q4 compared to both Q1 and Q2.

Conclusion: A high-normal SUA among apparently healthy males is a useful indicator to identify those individuals with increased risk of cardiovascular disease. In these patients, early intervention could play an important role in decreasing cardiovascular morbidity.

Ray L, Mohandas K, Shamraj M, Akila B. Association of high-normal serum uric acid levels with abnormal lipid profile and high atherogenic index of plasma in apparently healthy South Indian males. J Clin Sci Res 2014;3(Suppl 3):A235.

Abstracts of Poster Presentations (AMBICON – 2014)

Magnesium deficiency and stress

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Introduction: Stress releases catecholamine and corticosteroids. Magnesium deficiency intensifies the stress reactions leading to cardiovascular complications. Many studies have found out that low Mg/Ca ratio increases the release of catecholamine which further lower tissue Mg level and increases release of vasoconstrictors and platelet aggravating factors. Occupational stress is more common in Information Technology (I.T) employees which cause alterations in biochemical parameters and diseases.

Objective: With this background this study was designed to compare the serum magnesium levels, body mass index (BMI), blood pressure (B.P), and lipid profile in I.T employees with non I.T employees.

Material and methods: This was a comparative study. The study included 80 subjects of whom 40 were I.T employees and 40 were Non I.T employees. B.P and BMI were measured. Fasting blood samples were analyzed for Magnesium and lipid profile by auto analyzer.

Results: The serum magnesium, and HDLc were significantly higher ($p<0.001$,$p<0.01$) and all other parameters like BMI, Systolic and Diastolic Blood pressure ,TG were significantly lower ($p<0.05$,$p<0.001$,$p<0.001$,$p<0.05$) in IT employees compared to non IT employees.

Our correlation study revealed a significant negative association between Serum Magnesium (Mg) and BMI, Cholesterol, TG and VLDL in both IT and non IT employees. Serum Mg also depicted positive relation with serum HDLc in both the groups, which explains decrease serum Mg level is associated with dyslipidaemia and may lead to complications.

Conclusion: Serum Mg level is significantly higher in I.T employees may be due to their regular physical exercise, more health awareness and life style modification which were not seen in non I.T employees.Our study suggests that as Mg plays a key role in stress , people having occupational stress should take magnesium rich foods like whole grains, legumes, fruits and vegetables (especially dark-green, leafy vegetables) every day which will help to provide recommended intakes of magnesium and maintain normal storage levels of this mineral and prevents complications of stress.

Mishra S, Manju M, Vijayakumar KV, Toora BD. Magnesium deficiency and Stress. J Clin Sci Res 2014;3(Suppl 3):A236.

Atherogenic lipid profile of intrauterine growth retarded newborns

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Objective: Neonates with intrauterine growth restriction are under greater risk of Coronary artery disease in future .To compare the concentration of serum lipids of umbilical cord blood of neonates of intrauterine growth retardation with normal term neonates.

Material and methods: 100 newborns with intrauterine growth retardation and 100 normal term newborns, with 38 to 41 gestational weeks, were studied. Total Cholesterol, triglycerides, HDL, LDL and VLDL cholesterol were measured in umbilical cord blood samples. The study was carried out in Government Medical College and Hospital, Nagpur. The period of study was from January 2011 to October 2013. Blood samples were collected from the study population in the neonatal unit and all serum lipid profile level were measured with all accuracy in a computerized automated biochemical analyzer in Biochemistry department. Statistical analysis were done by using student's unpaired 't' test by using Graph Pad Prism software.

Results: Statistically significant difference in TC (Pvalue <0.001),TG(P value <0.05),LDL(P value <0.001) and VLDL(P value <0.05) observed in intrauterine growth retardation neonates. HDL –cholesterol (P value >0.05) were higher but not statistically significant in neonates with intrauterine growth retardation as compared with normal neonates..

Conclusion: Intrauterine growth retarded newborns were with worse lipid profile in Indian IUGR neonates. Further research is needed into the determinants of fetal growth and to the ways preventing fetal undernutrition.

Jadhao AN, Barapatre AR, Lokhande MC. Atherogenic lipid profile of intrauterine growth retarded newborns. J Clin Sci Res 2014;3(Suppl 3):A237.

Abstracts of Poster Presentations (AMBICON – 2014)

A prospective pilot study to evaluate thyroid function tests in post-menopausal females at a tertiary care hospital in india

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Objectives: The aim of the present pilot study was to investigate the thyroid functions in post-menopausal women of Aurangabad, Maharashtra, India.

Methodology: This was a cross sectional study of thirty healthy postmenopausal females of 45-70 years age groups. We conducted this study at Government Medical College, Aurangabad during June 2005 to December 2007. Blood was tested for serum thyrotropin concentrations and for free tri-iodothyronine and free thyroxin concentrations. The data was analyzed using the method of descriptive statistics and the results expressed as percentage of the total.

Results: In the present study out of total 30 postmenopausal females studied, only one (3.33%) was found with subclinical hypothyroidism. Subclinical hypothyroidism was defined by the presence of elevated TSH levels but normal free T_4 and free T_3. Fisher's exact test. The two-tailed P value is less than 0.0001. The association between Post-menopausal women having subclinical hypothyroidism and Post-menopausal women who do not have subclinical hypothyroidism is considered to be extremely statistically significant.

Conclusion: Our study indicates the importance of thyroid-status screening, especially in postmenopausal women. As our knowledge and awareness about thyroid function test increases and technology permits, the estimation of thyroid hormones should be done routinely in postmenopausal females as a precautionary measure for good health.

Patharkar SA, Bavikar JS, Bokankar DK. A prospective pilot study to evaluate thyroid function tests in post-menopausal females at a tertiary care hospital in india. J Clin Sci Res 2014;3(Suppl 3):A238.

Can serum vitamin B12 and folic acid levels suggest aetiology of chronic liver disease?

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Introduction: Cirrhotic patients often have nutritional disorders. There are several factors that can cause liver disease and, therefore, is treated differently. It is a priority to determine its etiology so that effective treatment would be provided to them from the very beginning. For the diagnosis of liver disease and its severity we rely, among others, in the clinical history, physical examination and laboratory measurements.

Objective: To study the serum levels of vitamin B12 and folate and determine if these parameters can help to find out the aetiology of the chronic liver disease.

Material and methods: 35 patients admitted for acute exacerbation of chronic liver disease (alcoholic etiology 25 and 10 from other causes) were studied and compared with 35 controls. The levels of serum vitamin B12 and folic acid levels were analysed. The other parameters analysed were serum AST, ALT, AST/ALT ratio and MCV.

Results: Serum levels of vitamin B12 in patients with decompensated chronic liver disease were 1213±306.2 pg / ml and 474.51 ± 98.69pg/ml in controls ($p < 0.05$). Serum folate levels were 8.8±1.32ng/ml in controls and 5.74±2.33ng / ml in patients with decompensated chronic liver disease ($p < 0.05$). Patients with alcoholic etiology of chronic liver disease had lower plasma levels of folic acid than patients with non alcoholic liver disease (4.38±0.67 vs. 9.16±1.07, $p < 0.05$) while levels of vitamin B 12 were higher in alcoholic liver disease as compared to other causes of chronic liver diseases(1310.4±308.63 pg/ml v/s 971± 93.5 pg/ml). We applied different statistical test and it was found that ratio of vitamin B12 and folic acid was better than other parameter like AST, ALT, AST/ALT ratio and MCV to assess the etiology of chronic liver disease.

Conclusions: Serum levels of vitamin B12 in patients with decompensated chronic liver disease are high, whereas serum folate levels are low. The ratio between vitamin B12 and folic acid may be useful in the differential diagnosis of the etiology of chronic liver disease.

Gupta G, Gehlaut VS, Malik K, Lokanathan V, Mahor DS. Can serum vitamin B12 and folic acid levels suggest aetiology of chronic liver disease?. J Clin Sci Res 2014;3(Suppl 3):A239.

Abstracts of Poster Presentations (AMBICON – 2014)

Lipid profile in cord blood of term and preterm low birth weight babies

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Objectives: Lipid profile of cord blood can predict the development of metabolic disease in later life. Considering this concept an observational study was conducted to estimate the lipid parameters in cord blood of term and preterm low birth weight (LBW) babies.

Methodology: The study was conducted from the month of january 2014 to june 2014in PGIMS Rohtak. The cord blood samples were collected after considering the inclusion and exclusion criteria and processed within one hour of collection. The lipid profile of the samples was analyzed in autoanalyzer by enzymatic method. The LBW babies (birth weight < 2.5 kgs) were divided according to their gestational age into two groups: term LBW [group-1 (>37weeks)] and preterm LBW [group-2 (<37weeks)].

Results: Mean ±SD values of total cholesterol, triglycerides and VLDL-C of group-1 and 2 were 66.94 ± 11.66, 45.53 ± 6.04, 9.11 ± 1.21 and 58.94 ± 8.26, 37.35 ± 7.4, 7. 47 ± 1.48 respectively. These values were significantlyhigher ($p < 0.05$) in group-1 as compared to group-2. HDL-C and LDL-C values were 35.47 ± 5.88, 22.84 ± 10.66 and 33.53 ± 6.42, 17.94 ± 7.08 respectively. The values were higher in group-1 as compared to group -2 but were not statistically significant ($p > 0.05$).

Conclusion: Total cholesterol and triglyceride levels were significantly higher in term LBW babies as compared to preterm LBW babies. This evaluation may help in predicting snapshot view of the health status of newborn.

Sarkar M, Ghalaut VS, Bala J, Lokanathan V. Lipid profile in cord blood of term and preterm low birth weight babies. J Clin Sci Res 2014;3(Suppl 3):A240.

Role of serum magnesium in critically ill patients

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Aim and objective: To study serum magnesium level in critically ill patients compared to healthy controls. To predict the correlation of magnesium level with patient's prognosis and outcome.

Material and methods: Study is conducted in sree balaji medical college during febraury 2014 – june 2014. It includes a total of 100 patients, of which 50 are patients from medical intensive care unit and 50 are healthy controls. Blood is collected in plain tube, centrifuged and serum is separated. Serum magnesium level is estimated using colorimetric method. Serum calcium and serum albumin levels was also estimated.

Results: Serum magnesium levels was found to be low in critically ill patients(1.8 ±0.3 mmol/l) compared to healthy controls(2.2 ±0.2 mmol/l). The p value was < 0.05, which is significant. Serum calcium and serum albumin values were also found to be in low.

Conclusion: Significant reduction of serum magnesium levels contributed to prolonged ICU stay, high mortality rate with poor prognosis. But, the need for correction and benefit of magnesium supplement requires further study.

Hemalatha D. Role of serum magnesium in critically ill patients. J Clin Sci Res 2014;3(Suppl 3):A241.

Correlation of serum and urinary magnesium with serum creatinine

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Objective: Kidney has a vital role in magnesium homeostasis, and serum magnesium has been described as an independent risk factor in CKD patients, as low levels of magnesium is associated with morbidity and mortality. The aim of our study is to correlate serum creatinine with serum and urinary magnesium levels.

Material and methods: This study is a prospective study with total of 30 CKD patients(stages I-V) admitted in nephrology ward, males(n=21) and females(n=9), with mean age of 62.37±12.41 years. Serum urea, creatinine, magnesium and spot urine magnesium, along with eGFR were estimated. eGFR was calculated by MDRD 4 variable equation. Pearson correlation done. P value of <0.05 is taken as significant.

Results: In patients with CKD the mean±SD of serum urea (mg/dl), creatinine(mg/dl) and magnesium(mg/dl) were 62.43±37.57, 4.35±3.5, 0.92±0.38 respectively. The mean±SD of urinary magnesium and eGFR is 2.2± 1.44,30.73±25.5respectively. There is a positive correlation between serum creatinine and serum and urinary magnesium (r=0.627, p<0.0001),(r=0.55, p<0.002) respectively, which was statistically significant. A significant negative correlation was observed between eGFR and serum and urinary magnesium(r=-0.372, p<0.043, r=-0.551, p value<0.02) respectively.

Conclusion: Our study shows increased magnesium levels in patients with high creatinine and low eGFR. This may be attributed to deterioration in renal function leading to decreased excretion of magnesium and cannot be compensated any longer by increased fractional excretion of magnesium. However more clinical research is needed to confirm and to understand.

Thummala S, Chandran PA. Correlation of serum and urinary magnesium with serum creatinine. J Clin Sci Res 2014;3(Suppl 3):A242.

Correlation between hormonal status and bone turnover markers – calcium, phosphorus and alkaline phosphatase in perimenopausal and postmenopausal women

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Objective: The aim of the present study was to correlate the serum bone turnover markers –calcium, phosphorus and alkaline phosphatase with the serum levels of estradiol , FSH , LH on bone turnover markers in apparently healthy perimenopausal & postmenopausal women.

Material and methods: 25 apparently healthy perimenopausal (45-49 years) & 25 postmenopausal (50-55 years) women were selected for the study. Serum calcium, inorganic phosphorus and alkaline phosphatase were measured by fully automated autoanalyser using standard kit methods. Serum hormone levels were measured by chemiluminiscent technology. Student's T test and Pearson's test of correlation were used for the statistical analysis.

Results: There were no significant changes in bone turnover markers during period of 45 to 55 years. The concentration of estradiol was significantly (p<0.001) lower in postmenopausal than perimenopausal women. The concentration of FSH, LH were significantly higher (p<0.05) in postmenopausal than perimenopausal women. Estradiol concentration had non-significant positive correlation with calcium & phosphorus. FSH concentration had non-significant (p>0.05) negative correlation with calcium. The concentration of LH had non-significantly (p>o.05) negative correlation with calcium & phosphorus.

Conclusion: Menopause leads to changes in bone turnover marker. Menopause is associated with increase in concentration of FSH, LH & decrease concentration of estradiol. These changes in bone turnover markers were caused by reduction of estrogen concentration during phases of menopause. From above findings it is suggested that health promotion strategies for preserving bone should be instituted well before the last menstrual period.

Bala M, Minakshi, Menaka K, Singh V, Prasanta, Ashuma. Correlation between hormonal status and bone turnover markers – calcium, phosphorus and alkaline phosphatase in perimenopausal and postmenopausal women. J Clin Sci Res 2014;3(Suppl 3):A243.

Abstracts of Poster Presentations (AMBICON – 2014)

Biochemical parameters of cerebrospinal fluid of hydrocephalus patients: clinical implication in predicting shunt dysfunction

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Objective: This aim of this study is to predict shunt block or malfunction during follow up in patients undergoing Ventriculo-peritoneal (VP) Shunt for hydrocephalus by Cerebrospinal fluid (CSF) analysis during surgery.

Material and methods: This retrospective study was conducted in hydrocephalus patients undergoing VP shunt at department of Neurosurgery at SCB Medical College, Cuttack from 2011-2014. We excluded the patients with shunt malfunction due to infection or malposition.

Results: The p value shunt malfunction for CSF protein level more than 100mg/dl was found to be <0.05 which is statistically significant in my study. Hence, we could predict the cases which may result in Shunt block by studying the CSF parameters of hydrocephalus patients, which will be of great help for proper alternate surgical planning or explaining the patients regarding the prognosis and need for regular check up and interval of such checkups and have great clinical implication.

Conclusion: With the increasing use of Endoscopic third ventriculostomy for hydrocephalus, the predictability of CSF parameters for shunt malfunction prior to surgery will definitely help a group of patients to avoid unnecessary complications of VP shunt and help the surgeons for appropriate surgical planning.

Bhanja SS, Mishra P, Deo RC, Mishra SS. Biochemical parameters of cerebrospinal fluid of hydrocephalus patients: clinical implication in predicting shunt dysfunction. J Clin Sci Res 2014;3(Suppl 3):A244.

Lipid status in psoriasis patients

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Aim and Objectives :

- To estimate the lipid profile in psoriasis patients and controls.
- To compare the lipid profile between psoriasis patients and controls.

Introduction: Psoriasis is a non infectious chronic inflammatory disease of the skin characterized by well defined erythematous plaques with silvery scales which have a predilection for the extensor surfaces and scalp and by a chronic fluctuating course. Psoriatic patients can have increased prevalence of atherosclerosis. Hyperlipidaemia has been suggested in the pathogenesis of Psoriasis.

Methods: In this study, we compared lipid profile in psoriatic patients with normal subjects. This was a case-control study with 30 cases and 20 controls. Serum levels of high-density lipoprotein (HDL), low-density lipoprotein (LDL), triglyceride (TGL), cholesterol, were estimated in both cases and controls.

Results: The serum LDL, cholesterol and triglycerides, was statistically, significantly higher and HDL is lowered in psoriatic patients when compared with controls ($P < 0.05$)

Conclusion: Abnormal lipid status seen in psoriatic patients when compared with controls. The increased cardiovascular events in psoriasis patients can be due to hyperlipidaemia. So regular lipid profile check should be done in psoriasis patients and cardiovascular risk should be assessed.

Jyothi N, Rajendra G, Lakshmana Kumar N, Mahapatra GS. Lipid status in psoriasis patients. J Clin Sci Res 2014;3(Suppl 3):A245.

Abstracts of Poster Presentations (AMBICON – 2014)

Maple syrup urine disease - a case report

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Introduction: Maple syrup urine disease is a rare autosomal recessive disorder with a reported incidence of 1 in1, 85,000 live births. It is due to the impaired activity of branched chain ketoacid dehydrogenase, requiring Thiamine pyrophosphate as a cofactor. It results in accumulation of essential branched chain aminoacids Valine, Isoleucine &Leucine. Based on clinical findings &Thiamine administration, five distinct clinical variants are noted. There is genetic heterogeneity due to mutations in E1á, â, E2 & E3 of branched chain ketoacid dehydrogenase complex.

Case report: A 2 1/2 yr old female child admitted in Neurology ward with history of developmental delay and regression of previously attained milestones. No history of seizures. MRI showed T2 hyper intense signals in Thalamus, Brainstem, GlobusPallidus, Dentate nuclei of cerebellum of both sides. Urine was sent for metabolic screening.

Lab investigations: In urine metabolic screening, Benedict's, Cetrimide, cyanide nitroprusside test were negative. Ferric chloride test showed apple green colour. DNPH test showed yellow precipitate. Serum Lactate -56mgs/dl Normal (0-26mgs/dl). Confirmation by Tandem mass spectrometry showed increased Leucine/Isoleucine-1551.06µmol/l, Normal (44-120), Valine-679.21µmol/l, Normal (54-220); Leucine alanine ratio-12.16Normal (0.12-0.53). Lab values were consistent with Maple syrup urine disease.

Conclusion: Children with late onset (intermediate forms/Thiamine responsive/deficiency of E3 subunit), may show some forms of developmental delay depending on residual enzyme activity. It is important to screen the patient earlier to prevent the deterioration of neurological function. Morbidity can be almost completely prevented by early diagnosis, trial of Thiamine therapy&diet devoid of branched chain aminoacids, combined with frequent amino acidmonitoring.

Anandhi S, Amudhavalli V, Mythili C. Maple syrup urine disease - a case report. J Clin Sci Res 2014;3(Suppl 3):A246.

Non radiological diagnosis for Conn's syndrome

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Case report: A 48years male was referred to RGGGH as a case of uncontrolled hypertension past 6 months,he complains of occasional headache,weakness upper and lower limb muscles for past one month. Patient had previously been hospitalized and diagnosed with periodic paralysis. On examination he is hypertensive (BP-160/110), Power in upper and lower limb muscles- 3/5.

Investigations: Normal fasting Blood glucose -81mg/dl; low serum potassium -2.5meq/L; sodium in high normal range-143meq/L; high urinary potassium -35mmol/L; metabolic alkalosis.(pH- 7.50, Bicarbonate-36meq/L); Aldosterone renin ratio of early morning sample (being recumbent for half an hour after waking up) is elevated,serum aldosterone concentration is 29.83 ng/dl and plasma renin activity is 0.31ng/ml/hr. Aldosterone renin ratio is 96.22 (>25), A second sample taken during noon time after being ambulant for thirty minutes has serum aldosterone28.62 ng/dl and plasma renin activity 0.32 ng/ml/hr. AR ratio is 89.43, fallen.aldosterone renin ratio assayed in two steps with early morning sample and noon sample after being ambulantcan differentiate primary from secondary causes of hyperaldosteronism. Overnight dexamethasone suppression test was normal. 24hours urinary metanephrines and normetanephrines were normal. MRI abdomen-Nodular lesion with fat content in right adrenal body.

Discussion: Biochemical investigations (Aldosterone renin ratio assayed in two steps) confirm the diagnosis of primary adrenal adenoma and correlates well with imaging studies. This proves that biochemical investigations are sufficient and imaging studies are not mandatoryin diagnosing Conn's syndrome.

Divya M, Amuthavalli V, Shanmugapriya C. Non-radiological diagnosis for Conn's syndrome. J Clin Sci Res 2014;3(Suppl 3):A247.

Abstracts of Poster Presentations (AMBICON – 2014)

Atypicalpresentation of galactosemia

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Case Report: A 31/2 months old male child 3rd born out of 3rd degree consanguineous marriage presented with complaints of fever, difficulty in breathing, vomiting, and refusal of feeds for a period of twodays.History of hypo pigmented hair over scalp and all over the body since birth.Normal milestones for his age, two other siblings are normal. On examination there was no organomegaly. Diagnosed and treated for bronchopneumonia with appropriate antibiotics intravenously, on the third day the child recovered. As the child had hypopigmented hair over the scalp and all over the body since birth urine was subjected tometabolic screening.

Lab Investigation: 1. Urine for Benedict's test positive (showed dark green precipitate) 2. Dipstick for glucose negative; 3. Ferricchloride test negative; 4. Mucicacid test for galactose showed typical crystals; 5. Paper chromatography of urine sample showed presence of galactose; 6. Blood galactose level normal; 7. GALT enzyme activity 87% of control.

Discussion: Child presenting with positive benedict's test for reducing sugars and negative for glucose/ fructose may predispose the possibility of galactosemia. Paper chromatography revealed the presence of galactosemia. Typical features of galactosemia are absent. Paper chromatography was negative for the presence of amino acids. GALT enzyme activity should be 100% in normal individuals (N/N). In this patient GALT enzyme activity is 87% of control which suggests the possibility of carrier type Duarte variant (N/D) galactosemia which has to be confirmed by gene study. Further study at the molecular level will probably confirm the aberration at genetic level which probably has influence on relevant gene expression.

Nirmaladevi P, Chitraa R, Shanmugapriya C. Atypical presentation of galactosemia. J Clin Sci Res 2014;3(Suppl 3):A248.

Role of trace element supplementation after major burns modulates antioxidant status

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Objective: Burns are a major health problem worldwide with high mortality and morbidity in addition to causing changes in the quality of life of burn patients. The present study as done to determine the alterations of the levels of trace elements (zinc, copper, selenium) in plasma in burn patients and to determine the use of trace element supplementation in patients with burn injury.

Material and methods; The study was designed as a case control study which includes 40 patients divided into 2 groups, 20 patients with 20 to 40 % burns. Control groups included 20 normal patients. Patient is supplemented with antioxidants (zinc, selenium and copper) from day 1. Blood samples should be collected on day one, two and three. Trace element concentration in samples were determined using flame atomic absorption spectrophotometry.

Results: There was significant decrease in serum copper, zinc, selenium ($P<0.005$) on day 1 of admission. Levels then gradually increased to normal levels by 3rd day after supplementation with antioxidants.

Conclusion: Supplementation with antioxidants was associated with higher circulating plasma and skin tissue content of selenium and zinc and improved antioxidant status. These changes were associated with improved clinical outcome, including few pulmonary infection and better wound healing.

Deepthi SK, Narayan GAR. Role of trace element supplementation after major burns modulates antioxidant status. J Clin Sci Res 2014;3(Suppl 3):A249.

Abstracts of Poster Presentations (AMBICON – 2014)

Vitamin D deficiency and associated morbidities in out-patient population of a tertiary care hospital

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Objective: More concern has now been shifting from the involvement of vitamin-D in bone health to its extra-skeletal effects. It has been established that vitamin-D deficiency is associated with various morbidities such as diabetes mellitus, hypertension, cancer, auto-immune diseases and many others. This study is carried out with the objective of assessing the co-morbid conditions associated with low vitamin-D levels in an out-patient hospital population.

Materials and methods: Estimated vitamin-D levels were obtained from the medical records who were attending the OPD of a tertiary care hospital. Details of the patients including age, gender and associated co-morbid illness were taken from the medical records. Vitamin-D levels <20ng/mL were classified as vitamin-D deficiency (VDD). VDD was further classified based on Lips classification as mild (10 to <20ng/mL), moderate (5 to <10ng/mL) and severe (<5ng/mL)

Results: The study included 100 patients who were vitamin-D deficient. It included 41 males and 59 females. Among males, 24 had mild VDD, 15 had moderate and 2 had severe VDD. Of the 59 females, 6 had severe and 22 had moderate VDD. Further analysis showed that the most common morbidities associated with vitamin-D deficiency were systemic hypertension and type-2 diabetes mellitus. The other common co-morbidities associated were autoimmune diseases, neurological disorders and thyroid disorders.

Conclusion: Epidemic of vitamin-D deficiency in India is likely to significantly contribute to the enormous burden on the healthcare system. Adequate supplementation of vitamin-D to the population could have a major impact in the prevention of vitamin-D deficiency and thereby reducing the trouble caused by the most common co-morbidities associated with its deficiency.

Gayathri B, Sujatha R, Ghalib N. Vitamin-D deficiency and associated morbidities in out-patient population of a tertiary care hospital. J Clin Sci Res 2014;3(Suppl 3):A250.

Study of liver function tests, total cholesterol and triglyceride estimations in hepatic disorders in patients admitted in medical wards of GGH

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Objective: 1.To study Liver function tests in hepatic disorders in patients admitted in medical wards of GGH Anantapurm, Andhra Pradesh. 2. To study the total cholesterol and Triglyceride levels in the same group.

Materials and Methods:-The present study is aimed to study Liver enzymes: AST, ALT, ALP, GGT, Albumin, serum bilirubin, total cholesterol and triglyceride levels in patients with Hepatic disorders admitted in medical wards of GGH Anantapur Andhra Pradesh. The total number of cases are 60(sixty) and 52 controls..

Results: Significant raise is seen in AST & ALT levels, significant decrease is seen in serum albumin levels, a decrease in Serum cholesterol level is observed in the study group.

Conclusion: Study of liver function tests, total cholesterol and triglyceride estimations in hepatic disorders was carried out in the study group and its role in diagnosis, treatment and prognosis of hepatic disorders should be evaluated further with the help of pathological, micorbiological and radiological Investigations.

Srivani S, Bhagyamma SN, Shyam Prasad BR. Study of liver function tests, total cholesterol and triglyceride estimations in hepatic disorders in patients admitted in medical wards of GGH. J Clin Sci Res 2014;3(Suppl 3):A251.

Abstracts of Poster Presentations (AMBICON – 2014)

How effective are salivary biomarkers in assessing the severity of periodontitis?

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Introduction: The use of saliva as a diagnostic fluid for dental diseases has yet to see practical utility in routine investigations. Changes in enzyme levels have been found to reflect severity of inflammation in gingiva and periodontium.

Aims and objectives: The purpose of this study was,

1) To determine the salivary levels of transaminases (AST, ALT), alkaline phosphatase (ALP), Lactate dehydrogenase (LDH) in gingivitis/periodontitis patients.

2) To evaluate effectiveness of these enzymes as biochemical markers for gingivitis/periodontitis.

Material and methods: Saliva samples of 74 patients attending the periodontic out-patient clinic were collected and systemic diseases like heart failure, diabetes affecting periodontal conditions were excluded. The diagnosis was based on the WHO criteria and patients divided into four groups as control, mild (gingivitis), moderate and severe.

Saliva samples were immediately transferred to refrigerated container at 4ÚC and then transported to the clinical chemistry laboratory and the measurements of enzymes were carried on the same day. The results were analyzed by various appropriate statistical methods and discussed in detail comparing previous studies.

Results: The transaminases were found to be with significant sensitivity of ALP, 84.5%; P<0.0001 and ALT, 93.1%; P<0.001 than specificityof ALP, 62.5% and ALT, 56.25%. Their cut-off values were determined by receiver operating (ROC) curves. ALP had sensitivity 41.38% and specificity 87.5% while LDH had sensitivity 63% and specificity 75%. ANOVA highlighted AST as a significant (P<0.05) assessor of grading gingivitis/periodontitis.

Conclusion: LDH with reasonably high sensitivity and specificity proves to be a useful salivary biomarker compared to other enzymes.

Lekhwani S, Ghalaut P, Singh V, Narula SC. How effective are salivary biomarkers in assessing the severity of periodontitis? J Clin Sci Res 2014;3(Suppl 3): A252.

Serum prolidaseactivity in major depression

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Objective: Proline, amino acid, is associated with cognitive function of the brain. Prolidase,is a specific imidodipeptidase, involved in chronic inflammation. Inflammation is reported to be one of the etiological factors of depression. So, we aimed to evaluate the relationship between prolidase activities with major depression.

Methods: Serum prolidase activity was evaluated in 60 patients diagnosed with depression (DSM IV), and compared with 40 healthy controls. The age group of the sample and the controls was between 18-60 years, both males and females were equally represented in the groups. Serum prolidase activity was measured by spectrophotometric technique.

Result: Serum prolidase activity in cases (109 ± 26.71 with median 103.56 mmol $min^{-1}L^{-1}$) was significantly increased as compared to controls (57.91 ± 10.97 with median 58.38 mmol $min^{-1}L^{-1}$) (P < 0.0001).

Conclusion: Prolidase activity is increased in major depression and supports the inflammation theory in the causation of depression.

Bajpai A, Verma AK, Srivastava M, Srivastava R, Kumari R. Serum prolidase activity in major depression. J Clin Sci Res 2014;3(Suppl 3):A253.

Abstracts of Poster Presentations (AMBICON – 2014)

Correlation of thyroid hormones with cytological features

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Objective : To correlate thyroid hormones with cytological features in 60 persons out of which 20 are controls and 40 are hypo or hyperthyroid patients for whom FNAC is done and the features are compared with thyroid hormones.

Material and methods: Vitros ECi Enhanced chemilumniscence immunoassay technology is used to estimate thyroid hormones and Haematoxylin and Eosin staining of FNAC slides.

Results: Total 60 samples were compared out of which 20 were normal controls , 20 were hypothyroid individuals and 20 were hyperthyroid individuals. In 20 hypothyroid individuals it is found that TSH is raised , T3 and T4 levels are decreased and the p value for both is 0.001 and cytologically they are correlating with Hashimotos thyroiditis and Lymphocytic thyroiditis . In 20 hyperthyroid individuals it is found that TSH is lowered , T3 and T4 are increased and the p value for both is < 0.001 and cytologically correlated with multinodular goiter, thyroid adenoma and lymphocytic thyroiditis. With reference to age and sex it is found that the thyroid disorders are more common at the age of 42-46 years in males and 50-54 years in females.

Conclusion: Vitros ECi is based on competitive immunoassay using enhanced chemilumniscence technology. The normal levels of T3 is 0.97 – 1.69 ng/mL, T4 is 5.53 -11.0 µg/mL and TSH is 0.465 – 4.68 µIU/mL. Hyperthyoidism is a diseased condition were TSH is lowered, T3 & T4 are raised. Multinodular goiter and adenoma thyroid are hyperthyroid conditions and in this study 20 hyperthyroid cases are correlating with the cytological features.Hypothyroidism is a diseased condition were TSH is raised ,T3& T4 are lowered. Hashimotos thyroiditis is most commom hypothyroid condition seen . In this study 50% of hypothyroid cases are correlating cytologically with Hashimotos thyroiditis. Lymphocytic thyroiditis is both hyper and hypothyroid condition , so some hyper and some hypothyroid cases are correlating cytologically with lymphocytic thyroiditits. So finally it can be concluded that the thyroid level abnormalities are correlating with cytological features.

Roopalatha, Preethi, Raghavi. Correlation of thyroid hormones with cytological features. J Clin Sci Res 2014;3(Suppl 3): A254.

A study on the melting point of subcutaneous fat in surgical patients

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Objective: To measure the melting point of subcutaneous fat collected from patients undergoing surgery.

Material and methods: Subcutaneous fat samples were collected from 56 surgical patients suffering from different conditions. Each sample was crushed with pestle and mortar in presence of sufficient quantity of chloroform, to ensure their dissolution in the solvent. The entire mixture was filtered and the filtrate was evaporated to remove the chloroform. The leftover lipid was completely frozen in the freezer chamber of refrigerator. It was then removed and allowed to thaw partially and temperature was noted with the help of a mercury thermometer. The process was repeated again to ensure fidelity. This was repeated with every sample obtained.

Results: 1) Specimen were found to have different melting points. 2) Melting points ranged in between 9 Úand 26ÚC. 3) Mean value was 16.19 ± 4.23, 4) Most patients had a melting point ranging in between 15Ú-19ÚC.

Conclusion: The difference in the melting point of lipids is suggestive of the relative amounts of fatty acids of different chain lengths and with degrees of saturation. These variations could be due to a differences in the dietary composition or individual metabolic differences.

Chaturvedi S, Chaturvedi UC, Sarkar G. A study on the melting point of subcutaneous fat in surgical patients. J Clin Sci Res 2014;3(Suppl 3):A255.

Abstracts of Poster Presentations (AMBICON – 2014)

A study on salivary pH in health and disease

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Objective: To measure salivary pH as a means to assess the acid-base status in individuals with different diseases, as compared to healthy controls.

Material and methods: 100 IPD patients from different wards were chosen at random for the study. The test was performed two hours post breakfast. Patients were asked to swallow the existing saliva in their mouth. A pH paper (range 5-7.5) was applied on the tongue and allowed to remain there with the mouth closed, for a period of around 5 seconds. Then the pH paper was matched with the colour code, to assess the pH. The same was repeated with all 100 controls, which were selected from healthy staff in this department and elsewhere in the hospital.

Results: The mean pH in the patients was 5.4 ± 0.49 and the mean pH in the controls was 7.035 ± 0.40.

Conclusion: The distinct difference between the test and control values strongly indicates the association between low pH and several diseases. A study with a larger sample size and specific diseases needs to be carried out for in depth understanding of this finding.

Mittal A, Gangopadhyay S, Sarkar G. A study on salivary pH in health and disease. J Clin Sci Res 2014;3(Suppl 3):A256.

Neuro wilson – a case report

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Background: Wilson ‘s disease is a autosomal recessive hereditary disease characterised by deficiency of ceruloplasmin with more pronounced involvement of the liver,eyes and brain. We report here a case of Wilsons disease presenting with only neurological manifestations without hepatic involvement.

Clinical history: A 12 years female IV born child to III degree consanguineous parents had been brought to Paedriatic Neurology with complaints of slurred speech , tremors both extremities, abdominal pain ,with h/o drooping of right shoulder ,and worsening academic performance.Other siblings normal, but a niece with h/o similar complaints and on treatment. Clinical findings –O/E palpable liver, bilateral KF rings ,drooping of right shoulders, tremors,gait disturbances were present. Patient was subjected to ultrasonogram, blood and urine investigations.

Results: CBC - Anaemia and Thrombocytopenia, Liver function tests – normal,Renal function tests – normal , Coagulation profile -normal, ABG –normal, serum Copper- low normal range, serum Ceruloplasmin - reduced , 24 hrs urinary Copper - normal . USG showed mild hepato splenomegaly.

Conclusion: Along with clinical profile, Laboratory investigations are also essential for diagnosis.The conclusion is neurological feature may be the only presenting manifestation of Wilson disease even in the absence of clinical evidence of hepatic involvement.

Uma T, Mahalakshmi R. Neuro wilson – a case report. J Clin Sci Res 2014;3(Suppl 3):A257.

Importance of cyst and drain fluid analysis in pre-and post-operative management of pancreatic cyst – a case report

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Objective: Cystic abnormalities of the pancreas comprise variety of lesions ranging from non-malignant pseudo-cyst to neoplastic lesions. Although cystic neoplasms are rare, the increasing use of abdominal imaging has resulted in the detection of pancreatic cysts in a large number of patients. Differentiation of these cysts is therefore important for proper management.

Case report: A 56-year-old female presented with upper abdominal pain with no palpable lump. Per abdomen examination revealed right hypochondrial tenderness. CT scan showed a cystic mass of 2.8 x 3.5 x 3.8 cm which was well-circumscribed and homogeneous with few thin septations and mild contrast enhancement of the fibrous wall located in the head of the pancreas.

Cyst fluid analysis results: Percutaneous diagnostic aspiration of the cyst fluid was performed under ultrasound guidance for proper diagnosis and management. Biochemical analysis revealed high CEA and CA 19-9 values (12.3 ng/mL and 22.43 U/mL respectively), with low Amylase and Lipase values (43 U/L and 121 U/L respectively). This supports the diagnosis of mucinous cystadenoma rather than serous cystadenoma or pseudo-cyst. With these findings, the patient underwent cyst excision. Pathological analysis coincided with biochemical findings which revealed a mucinous cystadenoma of the pancreas.

Drain fluid analysis results: The patient had symptoms of pain and fever, with drain fluid about 300 ml on 10^{th} day. This points towards pancreatic fistula or acute pancreatitis. Biochemical analysis of drain fluid revealed a high Amylase >10,000 U/L and Lipase >10,000 U/L values, with normal Serum Amylase and Lipase values (53 U/L and 96 U/L respectively), which is more in favour of fistula development. MRCP report coincided with the findings.

Conclusion: Thus it can be concluded that pre-operative cyst fluid analysis provide a clue for the type of pancreatic cysts and post-operative drain fluid analysis provide a clue if any complications are developed. More studies are required in this area.

Raj Kumari DMM, Anil Kumar T, Keerthana BL. Importance of cyst and drain fluid analysis in pre-and post-operative management of pancreatic cyst – a case report. J Clin Sci Res 2014;3(Suppl 3):A258.

Relationship between free T3 and ICU mortality: a prospective observation

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Objective: Low T3 syndrome is emerging as the most sensitive independent predictor of short term survival and is associated with adverse outcome in ICU patients .This study was conducted to assess the prognostic value of the complete thyroid indicators in unselected ICU patients.

Material and methods: Patients admitted in ICU and without known thyroid diseases were included in the study, Blood samples were analysed for Free T3 ,Free T4,Total T3,Total T4 and TSH and were compared with APACHE Score,Hemoglobin,ESR, Serum Lactate Dehdrogenase , Serum Albumin and eGFR.

Results: Total T3 and freeT3 is significantly decreased with p value (<0.0001), FT3 has negative correlation with APACHE II score ($r=-0.34, p<0.001$) lactate dehydrogenase($p<0.0005$)and erythrocyte sedimentation rate ($p<0.0001$) and has positive association with Hemoglobin ($r=0.290, p<0.001$) ,albumin ($r=0.450, p<0.001$) and eGFR ($r=0.224, p<0.001$).

Conclusion: Free T3 has a significant predictive value in assessing the prognosis in ICU patients and the addition of Free T3 to APACHE II score would significantly improve the ability to predict ICU mortality.

Sripad DV, Chowdary NVS, Sivaprabodh V, Shekhar R. Relationship between free T3 and ICU mortality: a prospective observation. J Clin Sci Res 2014;3(Suppl 3):A259.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of microalbuminuria, serum calcium and urinary calcium/creatinine ratio in post menopausal women

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Aim and objective: Deficiency of estrogen increases generation and deposition of extracellular protein which causes glomerular injury. Microalbuminuria is a reflection of vascular damage and marker of early arterial disease in normal healthy individual without diabetes and hypertension . Calcium/creatinine ratio is a well defined marker indicating the rate of bone resorption and duration of menopause. Aim of the study is to find out the presence of Microalbuminuria and estimation of serum calcium and calcium/creatinine ratio in postmenopausal cases and compare to that of controls.

Material and methods: The study was conducted by taking 35 no of cases and 35 no of healthy controls. Cases included non diabetic non hypertensive postmenpausal women of 45 to 60yr age group without taking vitD, calcium & hormone replacement therapy. Controls were of normal premenopausal women of 35 to 45yr age group. Urinary microalbumin measurement was done by Immunoturbidometric method, serum calcium and urinary calcium by ion selective electrode. Urinary creatinine by Jaffe's alkaline picrate method.

Results- The study showed that urinary microalbumin and urinary calcium/creatinine ratio was significantly increased in cases as compared to that of controls showing $p<0.05$. Serum calcium was significantly decreased in cases as compared to that of controls showing $P<0.05$. The study shows that Microalbuminuria is an early indicator of subclinical organ damage .Serum calcium and urinary calcium/creatinine ratio can be used as early marker of bone resorption in postmenopausal women. So the above parameters can be used as screening methods for detection of high risk groups who are prone to future cardiovascular disease and osteoporosis, so that early intervention Can be done.

Sahu RR, Mandal MK, Study of microalbuminuria, serum calcium and urinary calcium/creatinine ratio in post menopausal women. J Clin Sci Res 2014;3(Suppl 3):A260.

Impact of various teaching tools on first M.B.B.S students

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Background: Teaching tools play a very important role in Teaching-Learning process. Every individual has the tendency to forget. Proper use of teaching aids helps to retain more concepts permanently. Students can learn better when they are motivated properly through different teaching aids, such as whiteboard or chalkboards and power point presentations are commonly used to pique students' interest and demonstrate how things work, to clarify better and can facilitate the proper understanding, help to keep classroom live and active.

Aim: Present study was thus conducted to investigate the impact of conventional and modern teaching methods in the learning process in 1st M.B.B.S. students of Mahatma Gandhi Institute of Medical Sciences, Sevagram.

Material and Methods: Questionnaire constitutes 25 different questions were filled by 65 students (Male=32, Female=33) regarding advantages and disadvantages of various teaching tools. Statistical analysis was done by using proper statistical formula.

Observations & Discussion: : 54 students thought that conventional chalk board teaching is still the best teaching method in terms of increased attentiveness, to clarify the concepts and to understand the topic more effectively with statistically significant **p-value of 0.004** as compared to other approaches. However, 61 students felt power point technique although provides superficial impact with **p-value=0.036,** but it gives highly statistically significant visual impact of diagrams and less time consuming with **p-value=0.0069** over the chalk board**.**

(Nonsignificant p-value >0.05, Significant value <0.05)

Conclusion: The traditional blackboard approach was most favoured by students.The use of blackboard might help the students to understand the biochemistrymore easily & effectively.

Jayshri J, Kumud H. Impact of various teaching tools on first M.B.B.S students.J Clin Sci Res 2014;3(Suppl 3):A261.

Abstracts of Poster Presentations (AMBICON – 2014)

In vitro reducing, phenolic and antioxidant activities of ethanolic extract of *Momordica Charantia* (Bitter Melon)

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Objectives: To determine the total phenolic content, reducing and antioxidant activity in different concentrations of ethanolic extract of *Momordica Charantia*.

Material and methods: *Momordica Charantia* (MC) fruit was purchased, washed in distilled water, weighed and paste was prepared of whole fruit using a regular household mixer without adding any additional water. The paste was then lyophilized using freeze dryer and the powder obtained was stored at -80°C in air tight plastic container. *Momordica Charantia* ethanolic extract (MCE) was prepared by graded ethanol fractionation method. The extracts were concentrated, freeze dried and reconstituted in ethanol for the assessment of (a) Total phenols - using Folin–Ciocalteu (F–C) reagent**;** (b) Reducing activity using 3,5-Dinitrosalicylic acid (DNS) method; and (c) Paper chromatography for qualitative analysis of type of reducing sugar in the extract. Next, the antioxidant activity was determined using ferric reducing antioxidant power (FRAP) and 2,2-diphenyl-1-picrylhydrazyl (DPPH).

Results: The total phenolic content, of MCE decreased with increasing ethanol concentration from 50% to 100% (p=0.0001). The 50% MCE has more potent antioxidants when compared to 70% and 100% MCE in DPPH method (p=0.015). Glucose was identified as the major reducing sugar present in the extracts, which was also found to be significantly high in 50% of MCE (p=0.0001).

Conclusion: The data showed that the 50% MCE contain high percentage of reducing sugar, phenolic content and antioxidant potential than 70% and 100%. Further studies identifying the key antioxidants in this extract are under way.

Shobha CR , Prashant V, Akila P, Suma MN, Parveen D. In vitro reducing, phenolic and antioxidant activities of ethanolic extract of Momordica Charantia (Bitter Melon). J Clin Sci Res 2014;3(Suppl 3):A262.

A study of association between BMI and menstrual cycle in M.B.B.S pursuing students

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Introduction: Various variables may influence length and regularity of menstrual cycle. Studies have revealed that menstrual cycle abnormalities may also be associated with psychosocial stress, socioeconomic status, physical exercise, body weight, endocrine disturbances and others.

Objectives: To study the association between Body Mass Index (BMI) and menstrual cycle in MBBS pursuing students

Materials and Methods: The cross sectional study was conducted over a period of six months at a Private tertiary care Medical Teaching Hospital & Research Centre on randomized sample size of 100 MBBS pursuing students of age group 17 to 25 years. A questionnaire was distributed among these girls to know regarding - details of menstrual cycle: age of menarche, duration of cycle, regularity of cycle, amount of flow, passage of clots, association of dysmenorrhea, number of pads changed every 24 hours. Height and weight were recorded. BMI was calculated. The statistical analysis was done by using Pearson correlation analysis.

Results: In the present we found that menstrual cycle abnormality and body mass index were positively correlating (r = 0.08) and was statistically significant (p = 0.0284).

Conclusion: Diagnosis and management of these problems will not only improve the girls current health, sense of wellbeing and overall quality of life but may also lower her risks for future disease and ill health after proper advice about diet and exercise.

Swapnali, Kisan R, Prateeksha. A study of association between BMI and menstrual cycle in MBBS pursuing students. J Clin Sci Res 2014;3(Suppl 3):A263.

Abstracts of Poster Presentations (AMBICON – 2014)

High glycosylated hemoglobinlevels in corelation with ageing in non-diabetics

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Background: Glycosylated Hemoglobin A1c (HbA1c) is a measure of the degree to which hemoglobin is glycosylated in erythrocytes and is expressed as a percentage of total hemoglobin concentration. Glycemia is recognized to change with age. Some reports have demonstrated an association of HbA1c with age. Even in non-diabetic adults with normal fasting glucose, HbA1c steadily increase with age.

Aims and Objectives: This study was aimed to find the effect of ageing on the HbA1c levels in non-diabetic subjects and to find any correlation between HbA1c and fasting and 2 h post load glucose levels.

Material and methods: The study included 100 non- diabetic patients, aged 30-70 years, of both genders visiting the Medicine OPD of Guru Gobind Singh Medical College and Hospital, Faridkot, Punjab. These were further subdivided into 4 subgroups of age (i.e., 31- 40, 41-50, 51-60 and 61-70 years). Fasting blood sugar (FBS) and 2 h post load glucose (PP) levels were estimated. HbA1c levels were estimated using boronate affinity assay.

Results: This study showed that HbA1c levels rise with age, with the 97.5th upper limits for 40 years being 5.72 compared with 6.61or even higher for those aged upto 70 years. Association found was extremely significant as all the p-values were <<0.05. To determine whether FBS and PP contribute to the increase in HbA1c observed with age, we analyzed FBS and PP by age categories which showed marginal increase but the values were in normal range as per ADA guidelines for non- diabetics.

Conclusion: In summary, our study found clearly that HbA1c increases with age with minimal increase in FBS and PP levels. The possible explanation for this association of higher HbA1c with increasing age in non-diabetics is that factors unrelated to glucose metabolism are affecting HbA1c levels.

Sheenam, Gitanjali, Panag KMDS, Batta A. High glycosylated hemoglobin levels in corelation with ageing in non-diabetics. J Clin Sci Res 2014;3(Suppl 3):A264.

Serum hepcidin levels in the course of normal pregnancy

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Aim of the study: The aim of the study was to determine serum hepcidin levels in women with uncomplicated pregnancies.

Materials and methods: Thirty healthy pregnant women (10 in each trimester), without any pregnancy-related complications, were chosen as subjects. They were recruited from the antenatal clinic of the Community Health and Development (CHAD) hospital, at Christian Medical College (CMC), Vellore. Ten healthy age-matched non-pregnant females were selected as control subjects. The study protocol was approved by the Institutional Review Board of CMC, Vellore. Informed consent was obtained to collect 10ml of blood from each subject at the time of recruitment. Levels of serum hepcidin, ferritin, C-reactive protein and haematological parameters were estimated in each sample. Data were analysed by appropriate statistical tests, using SPSS, version 16. A p value of <0.05 was considered to be statistically significant.

Results: Serum hepcidin levels decreased with progression of pregnancy; the decrease was, however, not statistically significant (p value- 0.427). Haemoglobin levels in the third trimester were significantly lower than those in control subjects (p value-0.05). Haemoglobin and ferritin levels showed significant positive correlations with one another (p value- 0.015). Serum hepcidin levels did not correlate with any of the parameters measured.

Conclusion: Serum hepcidin levels tended to decrease with progression of pregnancy. It will be necessary to study a larger sample size to confirm these findings.

Gnanapraba P, Varghese J, Prasad J, Jeyaseelan V, Jacob M. Serum hepcidin levels in the course of normal pregnancy. J Clin Sci Res 2014;3(Suppl 3):A265.

Abstracts of Poster Presentations (AMBICON – 2014)

Analysis and comparison of surrogate measures of insulin sensitivity with hyperinsulinemic euglycemic clamp study in an Indian population

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Objective: Surrogate measures of insulin sensitivity such as HOMA-IR, QUICKI etc. were validated against hyperinsulinemic euglycemic clamp studies in western population. Though extensively used for clinical research, validity of these measures remains to be proven in Indian population. This study was done to verify the validity of surrogate measures of insulin sensitivity and to identify the most appropriate method in Indian population

Methods: Study was done on 16 normoglycemic healthy male south Indian subjects (Age = 29.81±7.51 years, BMI=21.99±3.38 kg/m^2, Fasting glucose = 90.75±8.94 mg/dl). After an overnight fast, blood samples were collected for glucose, insulin and lipid profile measurements. Stepped euglycemic hyperinsulinemic clamp studies were performed on all of these subjects. Steady state glucose infusion rates (M value) during low and high insulin phase were calculated from the clamp study. Correlations of M value with surrogate markers of insulin sensitivity were analysed.ROC curves of surrogate measures to diagnose insulin resistance were also analysed.

Results: Clamp derived M value showed a strong and significant correlation ($p<0.01$) with the following surrogate markers: Fasting insulin($r = -0.714$), FGIR($r = 0.747$), FIGR($r = -0.699$), FIGP($r=-0.560$), Raynaud($r=0.714$). ROC curve analysis of FGIR showed an AUC of 0.905 to diagnose insulin resistance.

Conclusion: Among the surrogate measures evaluated, Fasting glucose to insulin ratio (FGIR) had the strongest correlation with clamp derived M value and also it had greater AUC of ROC curve to diagnose insulin resistance. These findings suggest that FGIR is the most appropriate surrogate measure of insulin sensitivity in normoglycemic Indian subjects.

Venkatesan P, Gupta RD, Jambugulam M, Inbakumari M, Christina F, Geetanjali FS, Fleming J, Thomas N, Hawkins M. Analysis and comparison of surrogate measures of insulin sensitivity with hyperinsulinemic euglycemic clamp study in an Indian population. J Clin Sci Res 2014;3(Suppl 3):A266.

A study on serum acid phosphatase level in malarial patients

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Objectives: Malaria is endemic throughout most of the tropics. Technically, detection of malaria parasite may be missed due to low parasite density at sampling time and poor blood film preparation. It is therefore, desirable to search for markers for diagnosis of malaria is ongoing efforts. The study was conducted to evaluate the serum Acid phosphatase levels as a possible diagnostic marker for malarial infections.

Material and Methods: This study included a total of 100 subjects who presented to the Department of Medicine, PESIMSR, Kuppam. They were categorized into 40 patients with malaria (different parasites), 30 age and sex matched controls and 30 non-malarial patients with fever. Venous blood sample (5ml) was collected from all patients. This serum sample was used for estimating Acid Phosphatase (ACP) level. Estimation of ACP was be done by kit (Raichem Diagnostics kit) using auto analyser Chemwell. Data were analyzed using appropriate statistical methods.

Results: ACP level was highly significantly elevated in malarial group (3.14±1.22) when compared with control(1.33±0.72) and non malarial (1.81±0.30) groups (P value <0.001.)

Conclusion: In this study there was a significant increase in the serum ACP levels in malarial patients as compared to other groups in the study. This suggests that serum ACP levels could serve as a marker for haemolysis which indicating the active stage of disease. There is a need for further study to use this enzyme as a marker in malaria in addition to the routine tests involved.

Suvarna Devi C, Suma HR, Sharma PN, Nadiger HA. A study on serum acid phosphatase (ACP) level in malarial patients. J Clin Sci Res 2014;3(Suppl 3):A267.

Abstracts of Poster Presentations (AMBICON – 2014)

Elevated free fatty acid - a predictive indicator of insulin resisitance in healthy ageing

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Objective: Elevated Free Fatty Acids (FFA) is a common feature of aging in non- dia-betic humans. The present study investigates the free fatty acid level in the serum of non- diabetic elderly population belonging to different age groups of both genders and to study its correlation with insulin resistance.

Method: A total of 97 (male 47, female 50) elderly subjects >60 years of age were recruited for this study. Serum free fatty acid was estimated by colorimetric method. Serum fasting Insulin level was estimated by Sandwich ELISA method. Insulin resistance was calculated by the HOMA IR index.

Results: Serum FFA levels were found to increase significantly with age in elderly male ($p< 0.001$) and female ($p<0.01$) subjects. Significant increase was also observed in case of Insulin level in elderly male ($p= 0.015$) and female ($p=0.003$) subjects. When compared to men, women were found to have significantly elevated FFA, insulin and insulin resistance across all age strata. Correlation studies reveal a positive relationship between FFA and insulin and HOMA IR index.

Conclusion: Thus elevated fasting free fatty acid levels in blood could predict the presence of insulin resistance in healthy geriatric population

Jaya Singh CMS, lakshmipraba S, Jaiprabu J, Shanmugapriya V. Elevated free fatty acid - a predictive indicator of insulin resisitance in healthy aging. J clin sci res 2014;3(suppl 3):A268.

Effect of obesity and obesity with hypertension on renal function – a cross sectional study

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Introduction: Obesity is a common nutritional disorder. Abnormal excess weight gain causes adaptation of different organs including cardiovascular and renal system leading to development and progression ofhypertension and chronic kidney disease. The present study was conducted to know the effect of obesity and obesity with hypertension on renal function

Objectives: 1) To estimate renal profile in study groups. 2)To compare and correlate renal profile with BMI and blood pressure of study groups.

Materials and methods: Cross sectional study conducted on 90 subjects divided into three groups consisting of obese, obese with hypertension and healthy controls. Serum sample was used to analyze renal profile and lipid profile using standard laboratory methods. BMI was calculated and GFR (Glomerular filtration rate) was estimated.

Results: In the present study there was significant difference ($p<0.05$) in BMI, lipid and renal profile in obese and obese hypertensive patients in comparison to healthy controls and there was a significant positive correlation of BMI with serum creatinine in obese hypertensive patients($r=0.777$). Serum Total cholesterol, triglycerides & diastolic blood pressure showed significant negative correlation with estimated GFR in obese hypertensive patients.

Conclusion: Hypertension per se may cause alteration in renal vasculature and progression to chronic kidney disease. Obesity is associated with altered lipid profile with increased triglyceride and decreased HDL-C level,cause structural changes in the kidney leading to additive decline in kidney function in obese hypertensive patients.Hence periodic evaluation of renal function tests can help in detection of early renal damage in obese hypertensive patients.

Raghunandana R, Desai GM. Effect of obesity and obesity with hypertension on renal function – a cross sectional study. J Clin Sci Res 2014;3(Suppl 3):A269.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of fibrinogen and oxidative stress in nondiabetic obese male

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Aims and Objectives: The present study aims at correlating oxidative stress with plasma fibrinogen in nondiabetic obese male. Hyperfibrinogenemia causes increase in viscosity of blood which could be additive to the effects of oxidative stress in causation of atherosclerosis in obesity.

Material and methods: The study group comprised of 40 nondiabetic obese male attending the medicine OPD at MKCG medical college and hospital . All patients with chronic disorders like diabetes, hypertension , thyroid disorders, smokers and persons taking lipid lowering drugs were excluded. An equal number of age and sex matched healthy people were taken as control group .Obesity measured by BMI.Fibrinogen quantitated by phenol reagent (commercial) method.Total oxidant load measured by Fox-2 assay.Total antioxidant capacity measured by FRAP assay.

Result: Significant difference was observed in BMI of obese (33.4±5.6kg/m^2) and control subjects(22.4±1.8 kg/m^2) $p<0.050$. A significantly raised fibrinogen level (258.37±4.3 mg/dl) found in obese than controls (210.62±4.9mg/dl) $p<0.005$. Total oxidant capacity in obese was significantly higher (14.2±3.8 µmol/l) than control (5.61±2.1µmol/l) p value <0.005. Correspondingly total antioxidant level showed significantly lower values in obese (95±5.89 µmol/l) than control (380±12.7µmol/l)$p<0.001$. Plasma fibrinogen had significant positive correlation with Oxidant load ($r=787$, $p<0.01$) and significant negative correlation with antioxidant capacity ($r=789$, $p<0.01$). Statistical analysis was done using SPSS version 16.

Conclusion: We found a positive correlation between BMI , FOX-2 and fibrinogen and negative correlation with FRAP . This study highlights that hyperfibrinogenemia correlates positively with oxidative stress in obesity.

Panda S, Swain B, Mahapatra S, Devi N, Rasmita Padhi, Rattan R. Study of fibrinogen and oxidative stress in nondiabetic obese male. J Clin Sci Res 2014;3(Suppl 3):A270.

Does obesity paradox really exist in all CAD patients?

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Background: The prevalence of obesity is not only increasing in westernized countries, also shows an increasing trend in developing countries like India. Although obesity has been implicated as an important risk factor for cardiovascular diseases (CVD), there is a growing recognition that a paradoxical relationship exists between obesity and cardiovascular prognosis. Abdominal obesity is emerging as an important factor in the progression of cardio metabolic risk factors. This study was an attempt to explore whether such relationship applies for CAD patients of Salem population.

Aim and objectives: To observe the distribution of risk factors for CVD and check for obesity paradox among obese and non obese CAD patients.

Material and methods: This cross sectional study included 40 obese (BMI>24.9) and 40 non obese (BMI<24.9) established CAD patients from cardiology department of VMKVMC and Hospital. Cardiovascular risk profile (age, gender, diabetes mellitus, dyslipidemia, hypertension, cigarette smoking and family history of coronary artery disease) was noted. Lipid profile and blood glucose were analyzed by standard methods. Appropriate statistical analysis was done.

Results; The proportion of hypertension (50% vs 37%) and diabetes (57% vs 50%) were significantly higher in the obese than the non obese group. Dyslipidemia was observed in both the groups. The effect of obesity paradox was seen in terms of high triglycerides (216.10±86.96 vs 190.53±106.30 mg/dL) and low HDL (36.65±4.5 vs 39.77 ±8.9 mg/dL) in non obese CAD patients but it was not statistically significant (p-value = 0.30 & 0.08) compared with obese CAD patients.

Conclusion: High triglycerides and low HDL were observed in non obese CAD patients suggesting a possible obesity paradox though it was not statistically significant. WHR ratio was significantly higher in non obese than obese CAD patients signifying the importance of abdominal obesity.

Kavitha R, Sudha R, Jones E. Does obesity paradox really exist in all CAD patients?. J Clin Sci Res 2014;3(Suppl 3):A271.

Abstracts of Poster Presentations (AMBICON – 2014)

Metabolic syndrome in patients with central obesity

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Background: The Metabolic Syndrome is a constellation of metabolic abnormalities that confer increased risk of CVD and DM. Dominant risk factors for metabolic syndrome are central obesity and insulin resistance, exacerbating factors are physical inactivity, advancing age and genetic factors. Greater industrialization worldwide is associated with rising rates of obesity which leads to increased prevalence ofthe metabolic syndrome.

Objectives: To assess parameters of obesity (WC, BMI, WHR) in metabolic syndrome patients and levels of FBG associated with dislipidemia. To compare hsCRP, Microalbuminuria,GGT with the parameters of metabolic syndrome.

Material and methods: The study comprised of 50 cases with central obesity and 50 healthy controls. FBG, lipid profile, HsCRP, GGT and microalbuminuria were estimated.

Results: In this study the WC (107.25± 3.62), BMI (31.77±3.62), WHR (1.05±0.12) were significantly high compared to control group (WC 71.8±8.5, BMI 22.44±1.83, and WHR 1.05±0.12). A significant increase ($p < 0.0001$) in lipid parameters and FBG were seen in cases compared to controls. The levels of GGT (48.23± 23.92), HsCRP (1.47± 0.21) and microalbuminuria (0.06± 0.03) were highly significant in cases as compared to controls.

Conclusion: The present study showed that increased WC, FBG and dyslipidemia are associated with increased GGT, HsCRP and microalbuminuria. There is a close relationship between components of metabolic syndrome and HsCRP, GGT, microalbuminuria. Insulin resistance causes glomerular damage which leads to microalbuminuria in metabolic syndrome. hsCRP is induced by the cytokines of adipocytes and GGT is a marker of body fat content and oxidative stress. Our study has revealed that hsCRP, GGT and microalbuminuria can also be predictors of metabolic syndrome.

Khan SN, Kodliwadmath MV. Metabolic syndrome in patients with central obesity. J Clin Sci Res 2014;3(Suppl 3):A272.

Comparitive study of plasma nitrates an index of nitric oxide in passive smokers and non-smokers

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Objectives: The study is to evaluate the effect of passive smoking on vascular endothelium by estimating plasma nitrates an index of nitric oxide (NO) .Nitric oxide is synthesized by vascular endothelial cells from L- arginine by endogenoussystem nitric oxide synthetase (NOS) which regulates resting vascular tone, local blood flow and tissue perfusion. Hence NO is otherwise called as endothelium derived relaxing factor (EDRF). It is known fact that cigarette smoking is a risk factor for cardiovascular diseases. This detrimental effect is not only limited to active smoking but also passive smoking causing endothelial dysfunction, a key early event of atherogenesis.

Material and methods: 100 subjects were taken and randomized into two groups. Group 1 non-smokers (controls) n=50 who had never been regularly exposed to tobacco smoke. Group 2 passive smokers (cases) n=50, exposed to tobacco smoke for 1-2 hours for 3-6 years. Blood samples were collected and nitric oxide was estimated as plasma nitrates by Griess method, calorimetrically.

Results: Data was analyzed by MS-excel, SPSS17.0 software system. Comparison of two groups done by students t test. Mean plasma nitrate level in controls was 28.23 micro moles/lit cases 14.1 micro moles/ lit P-value is 0.001 which is statistically significant.We found significant decrease in plasma nitrate levels in passive smokers (cases) compared to non smokers (controls).

Conclusion: In our study the plasma nitrate levels in passive smokers is decreased which can be considered as biochemical marker for endothelial dysfunction a forerunner of atherosclerosis, thrombosis and cardiovascular events.

Lavanya R. Yelamanchi, Yerram S. Comparitive study of plasma nitrates an index of nitric oxide in passive smokers and non smokers. J Clin Sci Res 2014;3(Suppl 3):A273.

Abstracts of Poster Presentations (AMBICON – 2014)

Evaluation of oxidative stress markers in pregnant women with altered thyroid status

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Objectives: To assess the status of oxidative stress markers in pregnant women with altered thyroid status

Material and methods: Study was conducted after obtaining institute ethical clearance. Study consisted of 3 groups, group 1 comprised of 15 healthy pregnant mothers [Control group], group 2 with 15 hypothyroid and group 3 with 15 hyperthyroid pregnant mothers. Serum Malondialdehyde [MDA] by Thiobarbituricacid Reactive Substances method and superoxide dismutase [SOD] by pyrogallol method. Data presented as mean ± SD. Statistical analysis was performed using unpaired t-test. p Â0.05 was accepted as statistically significant.

Results: Serum MDA level was significantly higher [1.43±0.82µmol/Lvs 0.661 ±0.371µmol/L, $p < 0.05$] and SOD level was low [0.451 ± 0.269 U/mL vs 0.813 ± 0.299 U/mL, $p < 0.05$] in hyperthyroid pregnant mothers compared to control group. Serum MDA and SOD showed no significant alterations in hypothyroid pregnant motherscompared to control group.

Conclusion: There is a significant oxidative stress associated with thyroid dysfunction in pregnant mothers as shown by increased serum MDA and decreased SOD levels.

Anusha C, Kavitha S. Evaluation of oxidative stress markers in pregnant women with altered thyroid status. J Clin Sci Res 2014;3(Suppl 3):A274.

A study of serum paraoxonase 1 activity and its Q192R polymorphism in hypertensive patients and its correlation with lipid profile

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Objectives: Paraoxonase1 Q192R polymorphism causes inter individual variability of its activity. Study was conducted with an objective to compare PON1 activity and Q192R polymorphism in hypertensives and normotensive controls and to check for its correlation with lipoproteins.

Materials and Methods: Study included 50 diagnosed hypertensive patients with blood pressure > 140/90 mm of Hg; and who are not on lipid lowering drugs. It also included age and sex matched 50 normotensive controls. Serum paraoxonase activity / Arylesterase activity was measured spectrophotometrically using p-Nitrophenyl acetate and phenyl acetate as substrates. PON1 Q192R polymorphism was assessed by double substrate hydrolysis assay using phenyl acetate and p-Nitrophenyl acetate. Serum lipoproteins were measured by ERBA-Transasia automated analyser and kits. Serum lipoprotein levels were correlated with PON1 activity and Q192R polymprphism.

Results: Serum PON1 / aryl esterase activity was significantly decreased in hypertensives as compared to normotensive controls ($p<0.05$). PON1 activity was positively correlated with HDL levels and negatively correlated with LDL levels in hypertensives. No association was noted between PON1 Q192R polymorphism and lipoprotein levels in hypertensives and normotensives.

Conclusion: PON1 activity is decreased in hypertensives and correlated with lipoproteins. However, PON1 Q192R polymorphism does not affect association of PON1 with lipoproteins.

Vittal BF, Jaweed SA. A study of serum paraoxonase 1 activity and its Q192R polymorphism in hypertensive patients and its correlation with lipid profile. J Clin Sci Res 2014;3(Suppl 3):A275.

Abstracts of Poster Presentations (AMBICON – 2014)

Study the lipid profile in preeclampsia

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Objectives: To study the lipid profile in the patients of preeclampsia and normal pregnant women and to find the comparison between these two.

Materials and Methods: Serum fasting lipid profile were estimated in 100 normal pregnant women (controls) and 100 pregnant women with preeclampsia (cases) and comparison between cases and age matched controls of age group 18-35 years done using unpaired two-tailed Student 't' test. All statistical analyses were performed using GRAPH PAD PRISM version 5.00 software.

Results: Serum Triglyceride (TG), very low density lipoprotein (VLDL), low density lipoprotein (LDL) were significantly elevated ($p < 0.0001$) while high density lipoprotein (HDL) was significantly decreased ($p < 0.0001$) in preeclamptic group than in control group. No significant difference found in total cholesterol level in either group.

Conclusion: This study concluded that dyslipidemia contributed for developing preeclampsia.

Lokhande M, Ghosh K, Ghangle S. Study the lipid profile in preeclampsia. J Clin Sci Res 2014;3(Suppl 3):A276.

Serum high sensitivity CRP and lipid profile in preeclampsia

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Objective of the study: The aim of the study is to determine the role of hsCRP as a pro inflammatory marker in preeclampsia.To determine the role of serum lipids (T.Cholesterol, non HDL,Triglycerides) in the pathogenesis of preeclampsia,as the reports on lipid abnormalities in preeclampsia were inconsistent.

Material and methods: It is a cross sectional study conducted in the Department of Biochemistry, RRMCH. The study group includes 50 preeclamptic women and age matched (20-35years) 50 healthy pregnant women. Study group were selected according to inclusion and exclusion criteria. Fasting blood samples were collected to perform serum hs CRP by Immunoturbidimetry method. T.cholesterol by CHOD-PAP method, Serum TG by GPO-PAP method, non HDL were calculated according to formula (T cholesterol-HDL C)

Results: The data was analysed by students t test,p value of <0.05 considered statistically significant.The mean values of serum hsCRP was statistically significant with p value<0.0001 values high in cases. Expect LDL other parameters like T.cholesterol, Non HDL, Triglycerides were statistically significant (p value0.0001).

Conclusion: The significantly high levels of serum hsCRP in preeclampsia shows an exaggerated systemic inflammation which could be a marker of pathological uteroplacental perfusion a characteristic feature of preeclampsia. Adaptive changes in lipid levels in healthy pregnancies occurs to meet the demands of rapidly developing fetus, these adaptive metabolic responses are exaggerated in preeclampsia.Abnormal lipid profiles may have a role in promotion of oxidative stress and maternal endothelial dysfunction which is a classic hallmark of preeclampsia.Hence early detection of these parameters may aid in better management providing a better maternal and fetal outcome.

Vijayalakshmi P, Usha SMR, Sailakshmi. Serum high sensitivity CRP and lipid profile in preeclampsia. J Clin Sci Res 2014;3(Suppl 3):A277.

Abstracts of Poster Presentations (AMBICON – 2014)

Serum levels of calcium, magnesium and electrolytes in preeclampsia

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Objective: To study serum levels of calcium, magnesium and electrolytes (sodium, potassium) inpreeclamptic and normal pregnant women.

Material and methods: Study consisted of 60 cases diagnosed with preeclampsia and 60 normotensive pregnant womens as control in age group of 21-30 yrs from Obstetrics and Gyaenecology department of Govt Medical college, Nagpur. Serum calcium was estimated by Erba kit, Arsenazo III method; magnesium by Calmagite method on semi-autoanalyser; sodium and potassium by flame photometric method.

Result: Serum calcium in preeclamptic women was significantly lower (7.3 ± 0.5) compared to control whose value was 8.81 ± 0.61 ($p < 0.001$).Serum magnesium in preeclamptic women was significantly lower (1.28 ± 1.06) compared to control group whose value was 1.84 ± 0.47 ($p < 0.001$).Serum sodium in preeclamptic women was significantly higher as compared to control but there was no significant decrease in serum potassium level in cases as compared to control ($p< 0.45$).

Conclusion: Deficiencies of calcium, magnesium may be causative factors for aetiology of preeclampsia, and preeclampsia associated with increase in serum sodium and decrease in serum potassiumlevel.Adjuvant supplementation of calcium, magnesium, potassium with dietary restriction of sodium may minimize further progression of preeclampsia. Constant monitoring of serum calcium, magnesium, sodium and potassium may reduce severity of manifestation and complications of preeclampsia.

Rathi B, Tadas A. Serum levels of calcium, magnesium and electrolytes in preeclampsia. J Clin Sci Res 2014;3(Suppl 3):A278.

Study of serum ferritin levels in preterm labor

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Objectives of the study: To estimate the serum ferritin levels in patients of preterm labor and to compare with normal pregnant women matching with same gestational age.To determine if elevated serum ferritin level is associated with preterm labor.

Material and methods: The study was conducted at Rajarajeswari Medical College and Hospital, Bengaluru. A total of 50 cases preterm labor were taken for the study after satisfying the inclusion and exclusion criteria. Fifty cases of normal pregnant women matching with same gestational age were included in the study under the control group. All patients were evaluated in detail and serum ferritin level was estimated by particle enhanced immunoturbidimetric method.

Results: Mean serum ferritin values of preterm labor is81.296µg/L and in control subjects is 28.576µg/L. The difference was evaluated by Student's unpaired t-test and was found to be statistically signiûcant (P value=0.0062).

Conclusion: Serum ferritin may be considered as a biochemical marker for detecting preterm labor.

Nandini, Shetty HV, Rupkala. Study of serum ferritin levels in preterm labor. J Clin Sci Res 2014;3(Suppl 3):A279.

Abstracts of Poster Presentations (AMBICON – 2014)

Link between oxidative stress and hyperuricemia in preeclampsia

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Introduction: Free radicals play an important role in the pathophysiology of preeclampsia. Recent studies suggest that hyperuricemia may play a pathogenic role by contributing to the vascular damage and hypertension.

Objective: The present study was undertaken to estimate plasma malondialdehyde (MDA) , RBC reduced glutathione and serum uric acid levels in preeclamptic women.

Material and methods: 30 preeclmaptic women and 30 normotensive pregnant women attending the antenatal clinic at Narayana general hospital, Nellore was taken up for the study. All the subjects were primigravida between 18-30 yrs of age and were in their third trimester. Venous blood samples were collected. Plasma MDA was measured by Thiobarbituric acid reactive substances (TBARS) method, RBC reduced glutathione(GSH) and serum uric acid(enzymatic method) by using spectrophotometer.

Results: Mean plasma MDA levels (n= 30, mean ± SEM 24.4 ± 2.38 nmol/ ml , p value = 0.000) and serum uric acid levels (n= 30 , 7.2 ± 0 .25 mg/dl ,p value = 0.000) were significantly increased in preeclamptic women compared to normotensive pregnant women. Mean RBC reduced glutathione (3.8± 0.17 µmol/g Hb , pvalue =0.000) was significantly decreased in preeclamptic women compared to normotensive pregnant women.

Conclusion: We conclude that hyperuricemia is associated with preeclampsia and the plausible culprit of this is increased ROS generation . Soluble uric acid impairs nitric oxide production and induces endothelial dysfunction, further aggravating hypertension in preeclampsia. Uric acid can be used as a marker of oxidative stress injury and thus may be useful in managing maternal and fetal complications of preeclampsia.

Krishna TS, Rajarajeswari D, Deepthi SK, Naidu JN. Link between oxidative stress and hyperuricemia in preeclampsia. J Clin Sci Res 2014;3(Suppl 3):A280.

Prevalence of gestational diabetes mellitus in south Indian population using WHO and ADA guidelines

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Objectives: To find the prevalence of gestational diabetes mellitus using WHO and ADA guidelines and to compare the markers of accuracy between the above mentioned guidelines.

Research design and methods: This study was a retrospective analysis of the medical records of data of all pregnant women who underwent 75 g oral glucose tolerance test between October 2010 and October 2012 at JIPMER, India. Pre-gestational diabetic subjects were excluded from this study. The glucose was estimated using glucose oxidation and peroxidation method. Prevalence of GDM was expressed as frequencies and percentages. Sensitivity, specificity along with predictive values was calculated by considering WHO criteria as gold standard. Kappa statistics was used to determine the agreement between the guidelines used.

Results: OGTT data of 559 pregnant women was collected. Prevalence of GDM in the study population positive by either one of the criteria was 10.91%. Prevalence was 8.7% with WHO criteria alone whereas by ADA criteria it was 8.1%. Sensitivity, Specificity, Positive Predictive Value and Negative Predictive Value of ADA was 67.3%, 97.6%, 73.3% and 96.9% respectively when compared to WHO criteria. Agreement between ADA and WHO criteria was 0.675.2 hour post-load cut- off of WHO identified all the cases where as with ADA it was 2.1%.

Conclusion: Prevalence of GDM in the study population was found to be nearly same as reported previously. Both ADA and WHO guidelines detected similar prevalence rate in this population. The efficacy of WHO 2 hour post-load cut-off alone was found to be superior in diagnosing GDM than other cut-off used in this study.

VijayaVani SA, Suganya S, Soundravally R, Ananthanarayanan PH. Prevalence of gestational diabetes mellitus in south Indian population using WHO and ADA guidelines. J Clin Sci Res 2014;3(Suppl 3):A281.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of serum magnesium in preeclampsia and normal pregnancy

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Objective: To compare the serum Magnesium (Mg) levels in preeclampsia and normal pregnant women.

Material and methods:A prospective case control study was conducted in ESIC Medical College, Bangalore from May to August 2014 wherein 35 normal pregnant women and 35 preeclamptic women in their third trimister were compared for their serum magnesium levels. The age and the gestational age of the study groups were matched. Preeclampsia was classified into mild and severe according to ACOG (American Council of Obstetricians and gynaecologists) classification, 2014. All routine investigations along with serum Magnesium levels were checked. Serum Magnesium levels were estimated in an auto analyser using colorimetric method. The two study groups were compared using independent t-test for their statistical significance.

Results: The serum Mg levels were significantly lower in Preeclamptic group (P value <0.001). The mean serum Mg level in preeclampsia group was 1.26mg/dl (±0.059) and 2.04mg/dl (±0.048) in normal group. The mean serum Mg level in severe preeclampsia group was found to be 1.02mg/dl (±0.093) which is significantly lower compared to mild cases (P value 0.0159). Serum Mg values of 9 cases of severe preeclampsia had passed the normality tests for statistical analysis.

Conclusions: Serum Mg levels are significantly lower in preeclampsia when compared to normal pregnancy and can be used as a serum marker to diagnose as well as predict its severity.

Guruprasad R, Vijayakumari V. Study of serum magnesium in preeclampsia and normal pregnancy. J Clin Sci Res 2014;3(Suppl 3):A282.

Correlation of maternal age and free beta hCG in first trimester of pregnancy: effect on pregnancy outcome

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Background: Free β hCG is a glycoprotein synthesized by the syncitiotrophoblast of the placenta.It appears in maternal circulation soon after implantation and increases in concentration till 10thweek.It promotes the maintenance of the corpus luteum during pregnancy which secretes the hormone progesterone during first trimester.The maternal free β hCG is correlated with amount of placental tissue and placental function.Advanced maternal age is thought to be associated with placental insufficiency.

Objective: To estimate the levels of free β hCG between age group of 20- 40 years during first trimester of pregnancy.To investigate the correlation of maternal age with serum free β hCG level and the correlation between maternal BMI and baby's birth weight.

Materials and methods: The study group comprises of pregnant women within the age of 20-40yrs with singleton pregnancy who came for routine first trimester screening.Maternal serum free β hCG level was measured by ECLIA.BMI was calculated using formula.Baby's birth weight was obtained from the hospital records.

Result: In our study p value <0.01 was taken as significant in both cases i.e.maternal age inversely correlated with serum free β hCG level and maternal BMI correlates linearly with baby's birth weight and number of sample(n number) is 60.

Conclusion: The study shows maternal age has a negative correlation with serum free β hCG level which may be due to placental insufficiency withadvanced maternal age.The study alsoshows maternal BMI has a positive correlation with baby's birth weight.As there are several maternal factors related to infant birth weight, it is not possible to single out any particular factors affecting birth weight.

GhoshalY I, Varashree BS, Rao N, Prabhu K. Correlation of maternal age and free beta hCG in first trimester of pregnancy: effect on pregnancy outcome. J Clin Sci Res 2014;3(Suppl 3):A283.

Abstracts of Poster Presentations (AMBICON – 2014)

Hypoglycemia following glucose challenge test (GCT) as a predictor of pregnancy induced hypertension

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Background: Pregnancy induced hypertension (PIH) affects about 2-8% of all pregnancies. WHO estimates that one woman die every minute due to complications of hypertensive disorders of pregnancy. In addition PIH also affects foetus and causes IUGR, perinatal death. Early identification and treatment of PIH is the need of time.

Objective: To assess Hypoglycemia following Glucose Challenge Test (GCT) as predictor of development of Pregnancy induced hypertension.

Material and methods: 30 normal pregnant women in early second trimester (14 to 20 weeks) were selected from ANC clinic from ESIC Model hospital for the study. Glucose Challenge test level was measured by Hexokinase(HK) / Glucose-6-phosphate dehydrogenase(G6PD) method by Cobas integra 400 according to IFCC standards. The statistical analysis of GCT level was done using Mean±SD, individual changes were analysed by students "t" test and Pearson's cofficent of correlation.

Results: The mean GCT level among 16 women who subsequently developed Pregnancy induced hypertension was 60±5mg/dl. And the mean GCT level among 14 women who did not develop PIH was 95±10mg/dl respectively.

Conclusion: GCT can be used as a predictor of Pregnancy induced hypertension

Nandini, Pratibha K. Hypoglycemia following glucose challenge test (GCT) as a predictor of pregnancy induced hypertension. J Clin Sci Res 2014;3(Suppl 3):A284.

Study of serum cystatin C, beta-2- microglobulin and uric acid levels in preeclamptic patients

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Background: Preeclampsia (PE), a hypertensive disorder of pregnancy, is one of the leading causes of maternal and fetal mortality and morbidity. Cystatin C (CC) and β–2 microglobulin (β2-MG) are low molecular weight proteins produced by all nucleated cells at a constant rate. Their serum values are used as markers of glomerular filtration rate (GFR) and of renal impairment in PE. Uric acid (UA), a nitrogenous compound, is the major product of purine catabolism. Increased UA may not just be used as a marker of PE, but may contribute to its pathogenesis.

Objectives: a) To evaluate and compare the concentrations of serum CC, β2-MG and UA in cases and controls. b) To study the interrelationship of serum CC, β2-MG and UA with the degree of severity of PE.

Methods: The study included 50 clinically proven cases of PE and about 50 age and gestation matched healthy pregnant women as controls. The cases included 25 mild and 25 severe PE patients. About 3 ml of blood was drawn under aseptic precaution from both cases and controls to estimate serum CC by nephelometry, β2-MG by ELISA and UA by spectrophotometry method.

Results: Serum CC and β2-MG concentrations were highly significantly elevated in mild ($p<0.001$) and severe preeclamptic patients ($p<0.001$) compared to controls. Their serum concentrations were highly significantly ($p<0.001$) elevated in severe preeclamptic patients compared to mild preeclamptic patients. Serum UA concentrations were highly significantly elevated in severe preeclamptic patients compared to controls ($p<0.001$) and mild preeclamptic patients ($p<0.001$). However, there was no significant difference ($p>0.05$) in serum UA levels between controls and mild preeclamptic patients.

Conclusion: The study suggests that serum concentrations of CC and β2-MG are correlated to the severity of preeclampsia. Hyperuricemia is associated with severe preeclampsia.

Hebbar SR, Nagarajappa K. Study of serum cystatin C, beta-2-microglobuln and uric acid levels in preeclamptic patients. J Clin Sci Res 2014;3(Suppl 3):A285.

Abstracts of Poster Presentations (AMBICON – 2014)

Lipid profile in pre-eclampsia: a short study

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Objectives: The objective of the case control comparative study is to establish lipid profile changes& its use as an early marker in diagnosis of pre-eclampsia.

Material and methods: Study included a total number of 60 subjects which comprised of 30 healthy controls and 30 pre-eclampsia cases.Fasting blood samples were collected and lipid profile was estimated by automated methods.

Results: In our study, the lipid parameters –Triglycerides level was significantly increased ($p<0.0001$) in pre-eclampsia cases as compared to normal control group which is statistically significant and had positive correlation with preeclampsia. HDL cholesterol level was significantly decreased ($p<0.0001$) in pre-eclampsia cases as compared to normal control group , which was statistically significant and had negative correlation with preeclampsia

Conclusion: In our study, cases of pre-eclampsia showed significant increases in Triglyceride levels, LDL-C and slight increases in Total Cholesterol levels as compared to normal control subjects. Significant decreases in HDL cholesterol was seen in Pre-eclampsia cases in comparison to normal control subjects .During pregnancy there is increase in the hepatic lipase activity and decrease in lipoprotein lipase activity. This causes dyslipidemia mediated activation of the endothelial cells and placentally derived endothelial disturbing factors like lipid peroxides which could play an important role in the pathogenesis of Pre-eclampsia , hence Lipid profile can be used as a marker in early diagnosis of Pre-eclampsia.

Anandpara KG, Javarappa D. Lipid profile in pre-eclampsia: a short study. **J Clin Sci Res 2014;3(Suppl 3):A286.**

Study of serum lipids in pre eclampsia and normal pregnancy

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Objective: To study the levels of serum lipids in mild, severe pre eclamptic woman and normal pregnant woman.

Material and methods: We included 30 patients of normal pregnant woman (GR I), 30 patients of mild pre eclamptic woman (GR II) & 30 patients of severe pre eclamptic woman (GR III) who are attending the POD of ob & Gyn department of Prathima Hospital, Karimnagar during Nov 2013 to April 2014. The fasting blood samples were collected & analysed for total cholesterol, TG, HDL, LDL and VLDL by Erbachem 7 semi auto analyser. The data was analysed using analysis of variance (ANOVA)

Results and conclusions: Serum total cholesterol, TG, LDL, VLDL are significantly elevated in pre eclamptic patients when compared with normal control subjects.

Yashsoda L, Sangeeta S, Sunanda V. Study of serum lipids in preeclampsia and normal pregnancy. J Clin Sci Res 2014;3(Suppl 3):A287.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of biochemical parameters to detect cardiovascular risk in gestational diabetes mellitus

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Introduction: Gestational diabetes mellitus is present in 1-3% of the population. But risk factors associated with it affects not only mother but also the product of conception. It is also associated with preeclampsia, eclampsia, pregnancy induced hypertension, intra uterine death and still birth. Gestational diabetes mellitus may also predispose to cardiovascular risk.

Aims and Objectives: The objective of the study is to see the cardiovascular risk in gestational diabetes mellitus with different biochemical parameters like lipid profile, uric acid, serum creatinine and liver function tests and to calculate artherogenic index of plasma (AIP) in gestational diabetes mellitus.

Material and methods: About 50 normal pregnant females and 50 patients with gestational diabetes mellitus attending the Obstretics and Gynaceology OPD of Indira Gandhi Govt. Medical College & Hospital are being taken as cases for study. The lipid profile, serum uric acid, serum creatinine and liver function tests estimation were done on autoanalyser XL-640, Transasia. The AIP was calculated by the formula log (TG/ HDLc). The patients were classified into three classes according to AIP (<0.11 - low risk, 0.11 to 0.22- intermediate risk, >0.22- high risk)

Result and Conculsion:Till date the data in the study shows that patients with gestational diabetes have a high lipid profile with other biochemical parameters raised as compared with normal pregnant females. The statistical details and discussion will be presented during the conference.

Dung Dung S, Iyer CM, Suryawanshi NP.Study of biochemical parameters to detect cardiovascular risk in gestational diabetes mellitus. J Clin Sci Res 2014;3(Suppl 3):A288.

Increased risk of cardiovascular disease in patients of hypothyroidism

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Objectives: The present study was aimed to study alterations in levels of lipid profile and C - reactive protein (CRP) in hypothyroid patients.

Methods: 46 patients of hypothyroidism and 46 age and sex matched euthyroid healthy subjects were included for study. Serum lipid profile, Triiodothyronine (T_3), Tetraiodothyronine (T_4), Thyroid Stimulating Hormone (TSH) and CRP were estimated to diagnose hypothyroidism.

Results: Significantly increased levels of TSH, Total cholesterol (TC), Very Low density lipoproteins cholesterol (VLDL-C), Low density lipoproteins cholesterol (LDL-C), triglycerides and CRP were found in hypothyroid patients as compared to controls. Also, levels of T3, T4 and High density lipoproteins cholesterol (HDL-C) were found to be significantly decreased as compared to controls.

Conclusion: The thyroid hormones play an important role in maintaining metabolic homeostasis in adults. Inflammation is found in hypothyroidism as evidenced by raised CRP levels. Dyslipidemia and inflammation predisposes hypothyroid patients to premature atherosclerosis and future cardiovascular risk.

Rai PSK, Seth S, Aggarwal HK. Increased risk of cardiovascular disease in patients of hypothyroidism. J Clin Sci Res 2014;3(Suppl 3):A289.

Abstracts of Poster Presentations (AMBICON – 2014)

Serum uric acid levels in hypothyroidism

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Objective: This study was conducted to assess the uric acid levels in hypothyroid patients.

Methodology: A case control study conducted on 30 euthyroid and 30 hypothyroid patients referred for thyroid function testing in Victoria Hospital, attached to Bangalore Medical College and Research Institute, Bangalore. Serum uric acid levels were measured in both euthyroid and hypothyroid patients.

Results:

- The cases and control groups were similar in regard to age and gender.
- Thyroid function tests: Serum T3 and T4 values were significantly lower and TSH levels were higher in Hypothyroid group as compared to the control group ($p<0.01$)
- Uric acid: Serum uric acid levels were significantly elevated in hypothyroid patients (cases) compared to euthyroid patients (controls).

Conclusion:

- Hypothyroidism is one of the most common disorder seen in present days. It causes derangement in normal excretion of uric acid resulting in hyperuricemia

Champakalakshmi A, Vishwanath HL. Serum uric acid levels in hypothyroidism. J Clin Sci Res 2014;3(Suppl 3):A290.

Study of prevalence of subclinical hypothyroidism in Trichy

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Background: Subclinical hypothyroidism (SCH) is defined as a state of increased serum thyroid-stimulating hormone (TSH) levels, with circulating thyroxine (T4) and tri-iodothyronine (T3) concentrations within the population reference range. SCH is generally classified in two categories according to serum TSH level: mildly increased TSH levels (4.5–10.0 mU/l) and more severely increased serum TSH value (>10mU/l).The most important implication of SCH is high likelihood of progression to clinical hypothyroidism leading to cardiovascular complications and metabolic derangements.

Aim: To identify cases of subclinical hypothyroidism during routine health checkup & to prevent the complications of hypothyroidism .

Materials and Methods: Around 500 patients, who attended the non communicable disease OPD without any complaints and family history of thyroid disorder were randomly selected in the age group of 30 – 50 years, in MGMH Trichy, from January 1, 2014 to AUGUST 31, 2014 andthyroid profile estimation done by sandwitch ELISA technique .

Results: Of the 500 patients 22(4.6%) had TSH levels between 4. 5- 10mIU/Land 18 (3.6%) had TSH levels more than 10 mIU/L with T_3 and T_4 ranging within normal limits. Our study shows that the prevalence of subclinical hypothyroidism is 8.2 % and prevalence is more in females and increases as age advances. They were kept under observation and monitored at intervals clinically and biochemically.

Conclusion: The study shows subclinical hypothyroidism is emerging as major health problem and routine screening is essential to detect, treat and prevent the complications of hypothyroidism.

Latha J, Begum A. Study of prevalence of subclinical hypothyroidism in Trichy. J Clin Sci Res 2014;3(Suppl 3):A291.

Abstracts of Poster Presentations (AMBICON – 2014)

Study of serum vitamin D, calcium in hypothyroidism – a case-control study

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Objectives: Vitamin D deficiency has become a global public health problem. It has role as an immune modulator and there is an increasing evidence of significant role of vitamin D in reducing the incidence of autoimmune diseases.

The objectives of the study were: a) To estimate and compare the levels of serum vitamin D, calcium in cases of hypothyroidism and controls b) To comprehend the association between serum vitamin D , calcium and TSH levels

Materials and methods: It was a case control study. Thirty(30) cases of hypothyroidism and thirty (30) age and sex matched healthy controls in the age group 20-40 years of either sex attending medicine OPD of HSK hospital were included in the study. Serum fT3 ,fT4 ,TSH and vitamin D levels were measured in venous blood of both groups by chemiluminescence method using Maglumi 1000. Serum calcium levels were measured in both groups by Arsenazo method using spectrophotometric method .

Results : Serum vitamin D ($t=10.18, p<0.05$)and calcium levels ($t=9.8, p<0.05$) were significantly reduced in cases than controls.Vitamin D ,calcium showed significant negative correlation with TSH levels.

Conclusion : Hypothyroidism is associated with vitamin D deficiency and reduced calcium levels,which is associated with severity of hypothyroidism. Vitamin D supplementation along with calcium is presumed to prevent future complications associated with hypothyroidism .

Ganiger A, Bhutal MB, Prasad DSS, Swamy KM. Study of serum vitamin D, calcium in hypothyroidism – a case-control study. J Clin Sci Res 2014;3(Suppl 3):A292.

Evaluation of insulin resistance using HOMA IR index in hyperthyroidism

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Objective: To investigate insulin resistance using HOMA IR index in patients with overt and subclinical hyperthyroidism.

Material and methods: It is a case control study. 30 women with overt hyperthyroidism, 30 women with subclinical hyperthyroidism and 30 age and sex matched euthyroid controls were enrolled in this study. Total T_3, Total T_4, TSH, Fasting insulin, Fasting blood glucose were estimated in autoanalysers and HOMA IR index was calculated using formula [fasting insulin in uIU/ml × fasting blood glucose in mg/dl /405]. Statistical analysis was done using Mean±SD, individual changes analyzed by students "t" test and pearson's coefficient of correlation.

Results: HOMA IR was significantly high in cases than controls ($p < 0.05$), insulin levels were significantly high in cases than controls ($p < 0.05$). In our study HOMA IR index and Insulin levels were negatively correlated with TSH in cases [$r= - 0.5$, $P = 0.15$, $r=-0.16$, $P=0.1$ respectively].

Conclusion: Both overt and Subclinical hyperthyroid cases have been associated with insulin resistance which was calculated by using HOMA IR index, had good results. One underlying mechanism of insulin resistance could be due to altered insulin secretion. Thus care must be given in evaluating such hyperthyroid cases who may develop glucose related disorder such as diabetes, due to insulin resistance.

Pratibha K, Thanuja N. Evaluation of insulin resistance using HOMA IR index in hyperthyroidism. J Clin Sci Res 2014;3(Suppl 3):A293.

Abstracts of Poster Presentations (AMBICON – 2014)

T4/T3 ratio: a better parameter than T3 or T4 as an indicator of creatine kinase levels in hypothyroidism

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Objective: A large proportion of hypothyroid patients have myopathy which can be managed by reversing hypothyroid state as well as physical exercise. Muscle markers like creatine kinase (CK) and lactate dehydrogenase (LDH) have been rational candidates to measure the degree of myopathy. The ratio between thyroid hormones- tetra-iodothyronine (T4) and tri-iodothyronine (T3) has been found to be altered in certain thyroid related conditions. Reports on the association between thyroid hormone levels & their ratios with muscle markers have been limited.

The objective is to study the relationship between the components of standard thyroid profile and their ratios with CK and LDH.

Materials and methods: CK, LDH, T3, T4 and TSH were measured in 38 patients with hypothyroidism and 20 controls using automated analyzers.

Results: When compared to controls, hypothyroid patients had significantly different levels of T3 ($p= 0.048$), T4 ($p= 0.009$), TSH ($p < 0.0001$), CK ($p=0.033$) & LDH ($p=0.0003$), but not T4/T3 ratio ($p= 0.19$). CK in hypothyroids showed a negative correlation with T4/T3 ratio ($r= -0.53$, $p= 0.0006$) which is better than that of with isolated T4 ($r= -0.49$, $p= 0.0020$), whereas it did not show any correlation with T3 and TSH. LDH had no correlation with any of the parameters.

Conclusion: T4/T3 ratio has a significant negative correlation with CK. This readily computable ratio has the potential of alerting the physician to developing myopathy in hypothyroidism

Jyothi S, Baliarsingh S, Pratibha K. T4/T3 ratio: a better parameter than T3 or T4 as an indicator of creatine Kinase levels in hypothyroidism. J Clin Sci Res 2014;3(Suppl 3):A294.

Effect of TSH levels on lipid parameters in non-diabetic euthyroid and subclinical hypothyroid subjects

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Objectives: Altered lipid levels in thyroid dysfunction cannot be fully attributed to the effects of T_3 and T_4 alone. Elevation in TSH without any change in thyroid hormone levels also seems to affect lipid profile. This study was designed to observe the association of serum TSH levels with lipid parameters independent of thyroid hormone levels.

Materials and methods: The study was laboratory based data collection which spanned over a period of 6 months. 120 non-diabetic individuals without any known thyroid complications were included. Lipid parameters, levels of TSH, T_3, T_4 and Glycemic status were determined. Association between TSH and serum lipids was studied by categorizing subjects into three groups based on thyroid status Group 1[TSH= 0.27-2.5 mIU/L], Group 2[TSH= 2.6-4.12 mIU/L] and Group 3[TSH= 4.13-9.9mIU/L].

Results: Increase in TSH was positively and significantly associated with higher prevalence of elevated TC ($p = 0.013$) in Group 3 and LDL-C ($p = 0.040$) in Group 2 and Group 3 ($p = 0.006$). Though Group 2 consisted of people with higher levels of TSH within the current reference range, their lipid status was comparable ($p = 0.657$ for TC; $p = 0.826$ for LDL-C) with that of Group 3 which included subclinical hypothyroid subjects.

Conclusion: TSH directly influences lipid component LDL, independent of thyroid hormone levels even in euthyroid state, especially when TSH is greater than 2.5 mIU/L.

Jaseem T, Hegde A, Manjrekar AP, Rukmini MS, Rao S, Chakrapani M. Effect of TSH levels on lipid parameters in non-diabetic euthyroid and subclinical hypothyroid subjects. J Clin Sci Res 2014;3(Suppl 3):A295.

Abstracts of Poster Presentations (AMBICON – 2014)

Complex relationship between thyroid stimulating hormone and free thyroid hormones in regulation of thyroid function

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Introduction: Thyrotropin releasing hormone (TRH) from the hypothalamus enters the hypothalamic-pituitary portal system to release thyroid stimulating hormone from anterior pituitary thyrotrophs. TSH stimulates the release of T4 and T3 from the thyroid gland, although most T3 comes from peripheral monodeiodination of T4 to T3.More than 99% of T4 and T3 is bound to various thyroid hormone binding proteins. The unbound fraction of circulating thyroid hormone is the biologically active form, so FT4 concentrations correlate more closely with the clinical status of the patient than do that total T4 concentrations.

Objectives: To study the relationship between thyroid stimulating hormone and free thyroid hormones.

Material and methods: A group of 643 patients including both gender and age were taken from the Biochemistry laboratory, Govt. medical college Trivandrum who underwent thyroid function testing during July 2014 to August 2014.

Results: The correlation between FT4 and Log TSH was found to be negatively correlated, with a Pearson correlation coefficient r = -0.041,which is found not significant(P value = 0.299). But there is a significant negative correlation found between FT4 and Log TSH values in hypo and hyperthyroid patients. (r= -0.580,-0.335 respectively and P values < 0.01 and 0.01 respectively).

Conclusion: Beyond the upper and lower normal limits of FT4 level, the TSH level are controlled by the negative feedback mechanism. There is not much correlation between the TSH and free T4 values in normothyroid individuals.

Sam S, Beegum MS. Complex relationship between thyroid stimulating hormone and free thyroid hormones in regulation of thyroid function. J Clin Sci Res 2014;3(Suppl 3):A296.

Incidence of thyroiditis in children with goitre

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Objectives: To determine the occurrence of antithyroid antibodies in children with goitre.To correlate autoantibodies (TPO) with FNAC findings and Ultrasound of thyroid.

Material and methods: TFT and Anti thyroid antibody testing TPO was done on fifteen children with goitrous hypothyroidism by Access2-Beckman-Chemiluminescence. Children with evidence of autoimmunity were subjected to USG and FNAC.

Results: 80% of the children, presented with only a swelling in the neck. The remaining 20% were symptomatic. 93% were female. Family history of Hypothyroidism was seen in 53%. Only 13% cases were obese and 10% short statured. 86% had diffuse goitre, the rest being asymmetric. 40% had WHO grade1 goitre and 60% had grade 2 or 3. Thyroid function tests were deranged in all cases. TPO antibodies were elevated in 73%. In 87.5% of these cases the FNAC correlated well with the antibody concentration. Ultrasound was not found to be a good modality for the diagnosis of autoimmunity with only 33% showing evidence of thyroiditis. A very striking observation was that very high antibody levels did not correlate either with severity of hypothyroidism or with the size of the goitre.

Conclusions: 1) Autoimmunity is seen in a significant proportion of children with goitrous hypothyroidism. 2) All children, especially adolescent girls, with goitre of any size should have initial antibody testing along with FT4 and TSH.

Mohan T, Anusha R. Incidence of thyroiditis in children with goitre. J Clin Sci Res 2014;3(Suppl 3):A297.

Abstracts of Poster Presentations (AMBICON – 2014)

A study on prevalence of thyroid dysfunction in coastal population visiting tertiary health care hospital

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Objective: To determine the prevalence of thyroid dysfunction in coastal population attending NRI Institute of Medical Sciences & its associated hospital.

Material and methods: The present study was conducted in coastal population which included 186 females between 20 to 50 years of age. These patients were evaluated for thyroid hormone assay tri-iodo thyronine (T3), tetra –iodo thyronine (T4), & thyroid stimulating hormone (TSH) by VIDAS auto analyzer using Enzyme Linked Fluorescent Assay (ELFA). In this study we compared thyroid profile of both normal and abnormal subjects to determine the thyroid dysfunction.

Result: In the present study out of 186 subjects 104 (56%) were normal and 82 (44 %) were abnormal. Our study revealed that out of 44% of thyroid disorders the prevalence of Subclinical hypothyroidism 16.1%, Low T3 syndrome 10.7%, Hyperthyroidism7.5%, Primary hypothyroidism 4.8%, Hypothyroidism 3.7% and Secondary hyperthyroidism 1%.

Conclusion: Public awareness regarding the thyroid disorder is important especially among the females and untreated thyroid disease can produce serious consequences to the health.

Yarasani A, Rao SS, Preethi B, Rama Krishna C. A study on prevalence of thyroid dysfunction in coastal population visiting tertiary health care hospital. J Clin Sci Res 2014;3(Suppl 3):A298.

Evaluate risk of hypothyroidism in patients on treatment for MDR-TB

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Objectives: 1) To analyze Serum TSH level in patients on treatment for MDR-TB (Multidrug-resistant Tuberculosis);2) To evaluate risk of hypothyroidism in patients on treatment for MDR-TB.

Methodology: This cross-sectional study was conducted on 50 known cases of MDR- TB undergoing treatment at SSG Hospital and Medical College Baroda, Vadodara for at least 6 months (Group I). 50 normal age & sex matched healthy individual were taken as control group (Group II). In all these subjects Serum TSH was measured on microplate ELISA Reader by ELISA technique. Results are expressed as mean ± SD

Results: S. TSH (Normal Range 0.4 - 3.5 mIU/L) was significantly higher in groupI when compared to group II [4.8 ±1.8 and 1.6±0.7 in ($p < 0.000$)] Significantly higher levels of S.TSH were found in patients on treatment for MDR-TB.

Conclusion: We conclude that drugs given in MDR- TB (Ethionamide & para-aminosalicylic acid) increases the chances of developing hypothyroidism. So, the patients on treatment for MDR-TB should be regularly screened for thyroid status.

Rana HS, Jandial S, Jain S. Evaluate risk of hypothyroidism in patients on treatment for MDR-TB. J Clin Sci Res 2014;3(Suppl 3):A299.

Abstracts of Poster Presentations (AMBICON – 2014)

Creatine kinase as the prognostic biochemical marker in acute organophosphorus poisoning

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Objectives: The objective of the study is to assess the role of Creatine Kinase as a prognostic marker and to establish its correlation with severity of poisoning.

Material and methods: A cross sectional descriptive study was done with 30 patients in the age group of 18-60 years who intentionally took organophosphorus poisoning ,admitted in the Emergency ward of Sree Mookambika Institute of Medical Sciences, Kulasekharam from June 2013 to May 2014. Estimation of serum Creatine Kinase was doneat the time of admission, on 3rd, 7th day in fully automated analyser.

Results: Out of 30 patients, 3(10%) died. 2 on day1 , one on 7th day. Mean and SD of serum Creatine Kinase level on Day1, day3 and day7 were 464.07±750.26, 259.64±90.22, 205.14±74.92 .. On Day1 there was no significant difference in its level among categories of severity of poisoning or survival status. On Day3 it was 526.00 in dead category ,249.78±74.99 in survived category (p- Value 0.001). On Day7 it was 496.00 and 194.37±49.55 respectively (p- Value 0.000). Among various grades of poisoning, On Day3 it was 223.85±51.69, 261.82±84.23 ,370.00±130.81 in Grade1, Grade2 and Grade3 (p- Value 0.012). On Day7 it was 186.62±45.83, 183.82±11.01 and 324.00±140.45 respectively (p- Value 0.001).

Conclusion: Serum Creatine Kinase levels are significantly higher among higher grade of poisoning, significantly coming down in the survived patients on day3 and day7. So it can serve as a prognostic marker.

Lydia Y, Poonguzhali B, Jeya S, Nagendran. Creatine kinase as the prognostic biochemical marker in acute organophosphorus poisoning. J Clin Sci Res 2014;3(Suppl 3):A300.

Massive thyroxine poisoning: a case report

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Case report: A 23 year old clinically depressed femalepatient a known case of hypothyroidism for 4 years on Levothyroxine 100mcg for the past one year presented to the emergency department (ED) of Sree Balaji Medical College, Chennai with an alleged history of consumption of 60 tablets of levothyroxine100mcg. On examination, the patient was drowsy, conscious and oriented. Her vital signs were temperature 37.1°C, heart rate 106 beats per minute, respiratory rate 28 breaths per minute, blood pressure 130/90 mm Hg, and oxygen saturation 99% on room air. Her physical examination was normal. Gastric lavage was given. Supportive treatment given and the patient serially monitored for a period of 1 week. No serious complication occurred.

Discussion: In literature, no fatalities have been reported after acute thyroid hormone preparation overdose. The onset of symptoms can be delayed for up to 6±11 days which correlate with pharmacokinetics, metabolism and its half-life. Common effects include nervousness, insomnia, mild tremor, tachycardia, mild elevation of body temperature, blood pressure elevation and loose stools. More serious effects have been described, but rarely, including coma, convulsions, acute psychosis and myocardial infarction. Nevertheless serial monitoring of thyroid hormone profile is necessary. Chronic ingestion of large amounts of thyroid hormone preparations result more often in more severe symptoms, including angina pectoris, myocardial infarction, myocarditis, ventricular and atrial arrhythmias, high output heart failure, circulatory collapse, left ventricular hypertrophy, thyrotoxicosis and thyroid storm.

Conclusion: Although serious complications are not common they can appear several days later, and the patients therefore should be closely monitored. Caution is needed in case of chronic thyroxine overdose.

Vidhyalogini, Shanthi, Manjuladevi AJ, Mythili, Kalaiselvi. Massive thyroxine poisoning: a case report. J Clin Sci Res 2014;3(Suppl 3):A301.

Aluminium toxicity in patients undergoing regular haemodialysis

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Objectives: Aluminium toxicity is commonly encountered in chronic kidney disease (CKD) patients who are on maintenance hemodialysis. Over time it leads to defective bone mineralization, microcytic anemia and encephalopathy. Sources of aluminium include exposure to aluminium in dialysis fluid and ingestion of aluminium-containing phosphate binders.Present study wasundertaken to find out whether there is any significant increase in serum aluminium values inCKD patients on maintenance hemodialysis when compared with healthy individuals.

Material and methods: The study comprises of 100 subjects in the age group of 40-60 years. The control group consists of 50 apparently healthy individuals who came for routine health check-up to Sri Ramachandra Medical College & Research institute. The case group includes CKD patients undergoing chronic low-flux hemodialysis for more than 6 months in the Nephrology Department. Aluminium was measured inthe Inductively Coupled Plasma-Optical Emission Spectrophotometer (ICP-OES) - Perkin Elmer Optima 5300 DV. SPSA statistical software version 22 was used; p-value of < 0.05 was considered statistically significant.

Results: The mean and SD values of CKD patients were significantly higher than healthy individuals with p value of <0.0001.

Conclusion: Although the prevalence of aluminium toxicity in hemodialysis patients is decreasing, it is still a problem affecting significant number of patients. Measures should be taken to reduce all sources of aluminium thus decreasing the morbidity in CKD patients.

Silambanan S, Prabu Kumar CM, Manikandan A, Palaneeswari S, Malar J. Aluminium toxicity in patients undergoing regular haemodialysis. J Clin Sci Res 2014;3(Suppl 3):A302.