

Abstract : Basic Sciences

Levels of Serum TNF- α and Serum Interleukin-10 in Women with Pre-eclampsia

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INTRODUCTION

Pre-eclampsia is a pregnancy specific syndrome characterized by hypertension (140/90 mmHg) and proteinuria greater than 300 mm/day after 20th week of gestation. The purpose of the present study was to evaluate the status of inflammatory markers TNF- α and interleukin-10 in patients with pre-eclampsia.

METHODS

This study was carried out on 140 patients of pre-eclampsia and 140 normal healthy pregnant women. Biochemical analytes measured were serum alanine aminotransferase, aspartate aminotransferase, uric acid, TNF- α , interleukin-10, and urinary protein.

RESULTS

The mean serum levels of TNF- α and interleukin-10 in pre-eclampsia women were 41.02 ± 11.33 pg/ml and 2.1 ± 0.72 pg/ml while in normal healthy pregnant women these were 15.37 ± 8.42 pg/ml and 4.32 ± 0.98 pg/ml, respectively. These values were found to be statistically highly significant ($p < 0.0001$).

CONCLUSION

Levels of TNF- α were increased whereas levels of interleukin-10 were decreased in women with pre-eclampsia.

Levels of Serum Visfatin and Serum Adiponectin in Patients with Impaired Glucose Tolerance

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INTRODUCTION

Impaired glucose tolerance, a prediabetic state, is defined as fasting plasma glucose level ranging from 110-126 mg/dl and 2 hour post glucose (75 gms glucose OGTT) level range from 140-200 mg/dl. The purpose of this study was to assess the levels of various adipocytokines like visfatin and adiponectin in patients with impaired glucose tolerance.

METHODS

The study was carried out on 120 subjects of impaired glucose tolerance and 120 healthy controls. Biochemical analytes analysed were fasting plasma glucose, glycosylated hemoglobin (HbA1c), serum insulin, visfatin, and adiponectin.

RESULTS

The mean serum levels of visfatin and adiponectin in impaired glucose tolerance subjects were 4.95 ± 1.81 mg/ml and 3.1 ± 1.1 μ g/ml while in healthy subjects (controls) these were 2.91 ± 1.21 mg/ml and 8.5 ± 2.2 μ g/ml, respectively. These values were found to be statistically highly significant ($p = 0.0001$).

CONCLUSION

Levels of visfatin is increased whereas levels of adiponectin is decreased in patients with impaired glucose tolerance.

A Comprehensive Study to Assess Status of Liver Function Tests in β -Thalassemic Major Patients in Jhalawar Medical College, Jhalawar

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INTRODUCTION

β -thalassemia major patients develop moderate to severe degree of anaemia. Multiple blood transfusions lead to iron overload which causes injury to various organs including liver. Extent of liver injury can be measured by assessing liver function tests (LFTs). The aim of present study was to assess status of LFTs and to find out their correlation with serum ferritin in beta thalassemia major patients.

METHODS

A total of 80 β -thalassemia major patients were studied for their serum levels of ferritin, total bilirubin, SGOT, SGPT, ALP, and total proteins. Statistical analysis was done by using SPSS 20.0 Software (trial version). Unpaired-t test, correlation, and one-way ANOVA tests were used in data analysis.

RESULTS

Mean values of serum ferritin, total bilirubin, SGOT, SGPT, ALP, and total proteins were 2336.29 ± 1422.11 ng/ml, 1.5288 ± 1.0626 mg%, 101.26 ± 49.76 U/L, 95.34 ± 50.76 U/L, 193.49 ± 50.98 U/L, and 6.8875 ± 0.6026 mg%. There was a positive correlation between serum ferritin and total bilirubin, SGOT, SGPT, and ALP. Correlation with total bilirubin, SGOT, and SGPT was statistically significant ($p < 0.001$). Statistically significant negative correlation was found with total protein levels ($p < 0.001$).

CONCLUSION

SGOT showed the strongest correlation with serum ferritin. Therefore, SGOT levels can be used as an alternative investigation to serum ferritin levels to guide the chelation therapy, when the latter is not available or accessible.

Study of Insulin Resistance, β Cell Function, and Lipid Profile in Type-2 Diabetes Mellitus

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INTRODUCTION

Type 2 diabetes mellitus (DM) is associated with a cluster of interrelated plasma lipid and lipoprotein abnormalities. The aim of the study was to demonstrate the serum insulin level and serum lipid profile and calculate the HOMA index and β -cell function in type 2 DM.

METHODS

This cross-sectional study was conducted on 104 established cases of type 2 DM with age more than 40 years and compared with healthy subjects. Biochemical parameters viz. sugar and lipid profile, HbA1C, serum insulin, HOMA2-IR, and HOMA-beta scores were recorded. Updated HOMA models (HOMA2 IR and HOMA-B) were calculated using fasting glucose and fasting insulin in a steady-state condition by HOMA calculator for specific insulin version.

RESULTS

Significant statistical differences were observed in sugar and lipid profile alongwith HbA1C, serum insulin, HOMA2-IR, and HOMA-beta scores of both diabetic and control group. No significant statistical difference was observed for serum HDL levels. The mean HOMA2-IR was significantly higher in diabetics as compared to non-diabetics, whereas the mean HOMA2- β was lower in diabetics as compared to non-diabetics ($p < 0.001$).

CONCLUSION

Altered lipid profile, serum insulin, HbA1C, HOMA-IR, HOMA-B, and fasting insulin are independent predictors of type 2 DM. These simple investigations can aid to estimate future cardiovascular morbidity and mortality among type 2 DM subjects.

A Case Control Study of Heart Rate Variability in Newly Diagnosed Cases of Essential Hypertension

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INTRODUCTION

Essential hypertension is one of the most preventable risk factor associated with premature death worldwide. The aim of present study was to compare and assess time domain and frequency domain measures and poicare plot measures of heart rate variability in newly diagnosed essential hypertensives with controls.

METHODS

A total of 70 newly diagnosed hypertensive patients from medicine OPD and 70 normotensives from employees of Medical College were enrolled in the study.

RESULTS

Time-domain measures, SDNN, RMSSD, and pNN50; and frequency domain measures, power of high frequency HF (ms^2) and normalised HF were significantly reduced in newly diagnosed hypertensives. Power of low frequency LF (nu) and LF/HF ratio were found to be significantly increased in newly diagnosed hypertensives ($p < 0.05$). The non-linear measures SD1, SD2, and SD1/ SD2 were significantly decreased in hypertensives.

CONCLUSION

The reduced time domain measures and increased frequency domain measures LF(nu), and LF/HF ratio suggest sympathovagal imbalance and reflects para-sympathetic inhibition and sympathetic activation in the early stages of essential hypertension.