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PO092**FASTING PLASMA INSULIN LEVEL IS CORRELATED WITH THE BETA CELLS FUNCTION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS**

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Background: Insulin Resistance (IR) is a common finding in diabetes mellitus and may serve as a measure of efficacy of therapies (exercise, exogenous insulin, sulfonylureas, and PPAR gamma agonists) for diabetes mellitus and as a possible marker for risk of developing type 2 diabetes mellitus (T2DM). Insulin Resistance is widely believed to be able to be predicted using measurement of plasma insulin level and usually marked by existence of fasting hyperinsulinemia. However, recently fasting hyperinsulinemia itself was found to have a primary pathogenic role in the development of diabetes, independent of insulin resistance. Further analyses revealed that individuals with a high relative fasting plasma insulin concentration (for their degree of adiposity and insulin resistance) are at increased risk for a decline in early phase insulin secretion, but not in insulin sensitivity, before the onset of diabetes. Since beta cell dysfunction is the core of the pathogenesis of T2DM, therefore the aim of this study is to determine whether fasting plasma insulin level correlates with residual beta-cell function.

Method: The study was a cross-sectional study, which had enrolled men and women subjects with type 2 diabetes (T2DM) that were on routine follow up in a private outpatient diabetic clinic. The study included T2DM patients with age >40 years old. Informed consents were obtained from all patients. Exclusion criteria for the study group were: history of alcohol use, history having cardiovascular or cerebrovascular disease. Patients with end stage renal disease or on dialysis and with active hepatitis disease were also excluded from the study. Fasting Plasma Insulin Levels were measured as well as beta-cell function using HOMA-B. Fasting plasma insulin was considered within normal range if the value was <25mIU/L, above that was considered hyperinsulinemia. Statistical analysis was performed using SPSS for Windows 17.0 and Spearman's correlation rank test.

Result: A total of 206 subjects were enrolled, consisting of 144 (69.9%) males and 62 (30.1%) females. Mean laboratory result for fasting plasma insulin level was 13.7±4.1, while mean result for HOMA-B was 65.17±3.34. Fasting plasma insulin level is significantly correlated with HOMA-B ($p < 0.05$ 95% CI), respectively.

Conclusion: Fasting plasma insulin level was significantly correlated with beta cell function, however further study is needed to clarify.

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PO093**ASSOCIATION BETWEEN RED BLOOD CELL DEFORMABILITY AND DIABETIC RETINOPATHY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS**

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Background: Red blood cell (RBC) deformability is an ability of RBC to change shape under stress. RBC deformability has been demonstrated to be impaired in diabetes mellitus. But, little is known about the association between impaired RBC deformability and type 2 diabetes mellitus (T2DM). The aim of this study was to determine the influence of RBC deformability on T2DM.

Method: We conducted a cross-sectional study with 198 patients with T2DM who visited in Yeungnam university hospital from Mar. to Jul. 2014. Patients with end stage renal disease and who are taking a pentoxifylline and ginkgo biloba were excluded. RBC deformability was measured by using a Rheoscan-D (Rheo-Meditech, Seoul, Korea), and expressed as elongation index (EI). The EI was measured at 3 Pa. We divided the EI into quartile (Q1, Q2, Q3, Q4 from lowest to highest EI).

Result: 193 patients (mean age 59.82±12.29 years, M:F = 100:93) were finally included. EI had significantly negative correlation with the levels of glycated hemoglobin, and positive correlation with HOMA-B, respectively (β -23.52, $p = 0.01$ and β 520.03, $p = 0.02$, respectively). Patients with micro complications had lower EI compared with patients without complications (EI 0.303623 vs. 0.310637, $p = 0.01$). Of them, patients with retinopathy had lower EI compared with patients without retinopathy (EI 0.300449 vs. 0.309653, $p = 0.00$), whereas patients with nephropathy or neuropathy and macro complications had no significant difference in EI. After adjustment for age, sex, hypertension, smoking, and lipids, lower EI remained significantly associated with the prevalence of diabetic retinopathy (Odds ratio for Q1 compared with Q4, 4.16; 95% confidence interval, 1.43-12.13).

Conclusion: In patients with T2DM, there are significant relationship between RBC deformability and glycemic control, beta cell function and diabetic retinopathy. These results suggest that decreased RBC deformability is a useful surrogate marker for predicting diabetic retinopathy.

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Healthcare delivery**PO094****INSULIN PUMP THERAPY PROGRAM FOR CHILDREN IN KAZAKHSTAN - PUBLIC/PRIVATE PARTNERSHIP**

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Background: In recent years concerns regarding childhood diabetes in Asian countries have raised taking in consideration