PO092 Fasting Plasma Insulin Level is Correlated with the Beta Cells Function in Patients with Type 2 Diabetes Mellitus

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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 groupwere: 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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