POSTER PRESENTATIONS

POSTER AWARDS

P1

Serum Asymmetric Dimethylarginine (ADMA) Level and Insulin Resistance in Prediabetes and Diabetes

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Background
Both prediabetes and diabetes conditions are associated with insulin resistance and are at higher risk of atherosclerosis-related cardiovascular diseases. As asymmetric dimethylarginine (ADMA), a competitive inhibitor of nitric oxide synthase (NOS), is considered as an endothelial dysfunction marker; increased level could accelerate atherogenesis in prediabetics and diabetics.

Objective
To determine association between serum asymmetric dimethylarginine level and insulin resistance status in the study population

Materials and Methods
Total 92 participants were classified as normoglycemic group (n=28), prediabetes (n=34) and diabetes (n=30). Insulin resistance was determined by using homeostasis model assessment of insulin resistance; HOMA1-IR. Plasma glucose concentrations were measured spectrophotometrically and serum insulin and ADMA concentrations were measured using ELISA method.

Results
The mean serum ADMA level was significantly higher in prediabetes (0.85±0.1µmol/L) than normoglycemic group (0.61±0.04µmol/L) (p=0.01), while significant difference was not seen between normoglycemic and diabetic groups (0.67±0.06µmol/L) or between prediabetic and diabetic groups (both p>0.05). The median serum ADMA level of the study population was 0.63 µmol/L. Seventy percent of diabetes and 44.1% of prediabetes were found to be insulin resistant. No significant association was found between serum ADMA level and insulin resistant status (p=0.6). The total mean body mass index (BMI) was 26.08±0.44 and a positive correlation was seen between BMI and serum ADMA level (r=0.24, p=0.01).

Conclusion
Increased serum ADMA in prediabetes indicate increased atherosclerosis risk in that early glycemic impaired state and serum ADMA concentration was seemed to be more related to obesity rather than serum glucose level and insulin resistance status.