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**Original article:**

**Evaluation of relationship between gamma glutamyl transpeptidase (GGT) and diagnosed cases of type2 diabetes mellitus: A cross sectional study in a tertiary health care centre**

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**Abstract:**

**Introduction -**Gamma glutamyl transpeptidase (GGT) is responsible for transferring glutamyl groups linked through the gamma carboxylic acid from peptides such as glutathione to acceptors. Increased GGT activity, may be a response to oxidative stress, which can increase the transport of glutathione precursors into cells is an independent predictor of many diseases, including cardiovascular diseases, type 2 diabetes and inflammation.

Aim was to estimate levels of GGT, fasting plasma glucose (FPG) and glycated hemoglobin (HbA1c) in type2 DM subjects and to investigate possible correlation of GGT with glycemic control (FPG and HbA1c) in diabetic subjects.

**Methods –** Fourty(40) diagnosed type2 Diabetes Mellitus patients between age group of 40-60 yrs, and fourty(40) age and sex matched healthy individuals were included in this cross sectional study. FPG, HbA1c and GGT were estimated using fully autoanalyser VITROS 5600 considering p value<0.05 as significant.

**Observations-** We found highly significant increase in mean BMI, waist: hip ratio, serum GGT, FPG and HbA1C levels in type2 DM patients compared to controls (p<0.05). We also found significant positive correlation of GGT levels with BMI (p<0.05), waist to hip ratio (p<0.05), Disease duration (p<0.001), FPG (p<0.0001) and HbA1c (p<0.0001) diabetic cases.

**Results with Conclusion-** oxidative stress due to poor glycemic control and it’s positive correlation with GGT probably indicates antioxidant role of GGT in response to oxidative stress. Therefore, it may be useful to determine serum GGT as a marker of oxidative stress in type2 DM patients with poor glycemic control.

**Key Words**- Gamma glutamyl transpeptidase, glycated hemoglobin, fasting plasma glucose, oxidative stress.