ISSN: 2659-2029
Proceedings of the 3rd Research Symposium of the Faculty of Allied Health Sciences
University of Ruhuna, Galle, Sri Lanka
October 02, 2020

PP 02

Association of Serum Gamma Glutamyltransferase with Random Plasma Glucose and Body Mass Index in Selected Diabetic and Non-Diabetic Subjects

Bandara G.P.D., Thennakoon S. M., Withanage N.D.[#]
Department of Medical Laboratory Sciences, Faculty of Allied Health Sciences, University of Sri Jayewardenepura, Sri Lanka

[#]***Corresponding author**: withanagend@sjp.ac.lk*

Background: Gamma glutamyltransferase (GGT) is known as a predictor for several diseases such as metabolic syndrome, cardiovascular disease, liver diseases and alchol abuse. There is a strong association of obesity with hepatic insulin resistance. According to studies, Sri Lanka is among the countries with highest prevalence rates for diabetes in the world. Despite several studies reported worldwide, correlation between serum GGT and diabetes considering plasma glucose level and body mass index (BMI), are less supportive in Sri Lankan context.

Objective: To investigate the association of serum GGT in diabetics and non-diabetics and analyzed associations of GGT with random plasma glucose (RPG) and BMI in a selected Sri Lankan setting

Methods: A case control study was conducted with 147 subjects (n = 72; controls/healthy individuals, n = 75; cases/type 2 diabetics) between 20-60 years of age. Height and weight was measured and BMI was calculated. Venous blood (5 mL) was collected for serum GGT and RPG analysis and were estimated using semi-automated clinical analyzer. A subgroup analysis was conducted classifying subjects into two BMI subgroups (group 1: underweight, normal and group 2: overweight, obese).

Results: Serum GGT was significantly higher (p = 0.024) in diabetics (median GGT 21.11 U/L) than non-diabetics (median GGT 14.40 U/L). A significant positive correlation (r = 0.375, p = 0.001) was observed between serum GGT and RPG in cases. Serum GGT had no significant correlation with BMI in either cases or controls. Serum GGT was significantly higher (p = 0.007) in overweight subjects (median GGT 24.14 U/L) compared to underweight subjects (median GGT 10.91 U/L) in diabetics. In BMI subgroup analysis, group 2 in cases (median GGT 21.84 U/L) showed significantly higher (p = 0.048) serum GGT levels compared to group 1 (median GGT 16.05 U/L).

Conclusions: Elevated serum GGT level was associated with type 2 diabetes and GGT levels showed a positive correlation with plasma glucose levels. Higher seum GGT levels were associated with increased BMI in diabetics.

Keywords: *Body mass index, Gamma glutamyltransferase, Random plasma glucose, Type 2 diabetes*