Study of the Level of Cystatin C in Type 2 Diabetes Mellitus with Obesity

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Abstract:
Background:

Obesity is a major factor in metabolic disorders and premature deaths in developing countries. The risk of type 2 diabetes mellitus (DM) increases many folds in association with obesity. Cystatin C is an early marker for nephropathy, and it can also predict peripheral neuropathy, retinopathy and arterial sclerosis apart from renal function. Cystatin C is also associated with cardiovascular events and limb ischemia Associated complications deteriorate the quality of life of patients and increase the morbidity rate.

Objective:

To investigate the level of cystatin C in type 2 DM patients with obesity.

Methods:

The study population consisted of 301 newly diagnosed patients with type 2 DM, 130 obese non-diabetic patients and 130 healthy controls. All participants were subjected to full history taking, clinical examination and estimation of serum Cystatin C using enzyme-linked immunosorbent assay (ELISA). Non-alcoholic fatty liver disease fibrosis score and body mass index (BMI) were assessed for the patients.

Results:

Serum Cystatin C level, non-alcoholic fatty liver disease fibrosis score, BMI and DM duration were significantly increased among the diabetic obese group than other groups (P<0.001). The sensitivity of serum cystatin C to detect obesity among obese diabetic versus non-obese diabetic was 95.6% and specificity was 72% at a cutoff value of 760.7 ng/ml and AUC 0.956 (P<0.001). There was significant positive correlation between serum cystacin C and BMI in addition to waist hip circumference

Conclusion: Serum cystatin C was positively correlated with obesity. Therefore, it can be counted as an early predictor of metabolic syndrome.

Keywords:

Cystatin C, nephropathy, Obesity, renal disease, type 2 diabetes Mellitus.