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Euro Diabetes 2017: The correlation between Serum Omentin-1 Levels and insulin resistance in Type 2 Diabetic women- Sherry Elisha Mata- Cairo University

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Type 2 diabetes may be a disorder presented by decrease insulin secretion from pancreatic B cells, insulin resistance, and hyperglycemia. it had been estimated by the International diabetes federation (IDF) that diabetes affected 387 million people worldwide in 2014 and 592 million people by the year 2035 are expected to suffer from diabetes with a rise of 55%. Mostly the increasing prevalence is present in Asia and Africa by 2030. it is estimated that Egypt will have 8.6 million adults with diabetes to be one among the 10th largest country suffering from diabetes by the year 2030 and therefore the sixth most vital explanation for disability burden in Egypt. the increase in diabetes prevalence is usually linked to obesity and bad lifestyle habits.

Obesity may be major ill health mostly linked to type 2 diabetes and results in increased morbidity and mortality. Increased abdominal fat results in the secretion of inflammatory bioactive peptides (adipokines) from the fat. These adipokines have crucial effects on glucose and lipid metabolism, insulin resistance, diabetes, atherosclerosis, vascular endothelium, inflammation, and cardiovascular function. Therefore, novel adipokines linked to obesity-related disorders are important subjects for research. Adiponectin, resistin, leptin, TNFα, IL-6 are some samples of many secreted adipokines. Yang et al. had discovered the omentin gene extracted from the human omental fat also named intelectin, endothelial lectin, and intestinal lactoferrin receptor.

Adipose tissue has been referred to as a source of a spread of bioactive peptides called adipokines. Recently, a replacement protein omentin-1 (also named intelectin-1, endothelial lectin, and intestinal lactoferrin receptor) has been identified as a serious visceral (omental) fat secretory adipokine. Omentin is extremely and selectively expressed in visceral fat associated with subcutaneous fat and alongside visceral obesity play important roles in carbohydrate and lipid metabolism, homeostasis, insulin resistance, diabetes, and cardiovascular function. Insulin resistance links nutrition, glucose, insulin, and adipokines in various metabolic important tissues. While, omentin is very expressed in human visceral fat tissue, circulating omentin levels are reduced in obese subjects. Omentin is additionally down-regulated in association with obesity-linked metabolic disorders including insulin resistance, glucose intolerance, and sort 2 diabetes. The aim of our study was to extend our knowledge about omentin-1 and its relationship with type 2 DM, insulin resistance, and obesity. The study included 60 female patients with type 2 DM with their age bracket (40-60). 30 aged-matched female subjects formed the control group. All subjects were subjected to full clinical examination, weight, height, BMI, waist, and hip circumference, fasting plasma glucose, fasting insulin, fasting serum lipid profile, HbA1c and fasting omentin-1 levels. Insulin resistance was calculated as HOMA-IR. We found the serum Omentin-1 significantly lower in cases as compared to the control group (p value<0.001). We also found that plasma omentin-1 is inversely associated with obesity (negatively correlated to BMI, weight, waist and hip circumference). A statistically significant direct correlation between weight, BMI, waist, hip circumference, fasting glucose, HbA1c, insulin and insulin resistance within cases were detected in our study. In our study, the ROC curve analysis showed that the cutoff value of serum omentin-1 levels were 22.2 pg/mL (yielding sensitivity and specificity values of 100% for both). These results emphasize the usefulness of the discriminant ability of plasma omentin -1 to differentiate between cases (who were obese and having high insulin resistance) and controls. Our study showed that omentin-1 levels are low in type 2 diabetic and insulin-resistant females. We also found that plasma omentin-1 is inversely associated with obesity (BMI, weight, waist and hip circumference).

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