

Comparison of Serum Levels of Secreted Frizzler Protein 5 in Patients with Type 2 Diabetes Mellitus Treated and Not Treated with Metformin

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Abstract : Introduction: Type 2 Diabetes Mellitus (T2DM) is characterized by combination of insulin resistance and deterioration of insulin secretion. Sfrp5 is a protein that antagonizes Wnt5a proteins by preventing it from reaching its receptor and activating the Wnt/ β -catenin signaling pathway, this pathway is one of the most important regulators of adipogenesis. Although metformin decreases glucose levels its mechanisms of action are not fully known but it has been implicated in the inhibition of the Wnt/ β -catenin signaling pathway. Objective: The objective was evaluating the effects of metformin on serum levels of Sfrp5 in patients with T2DM treated and not treated with metformin. Methods: Two groups of patients were selected: one group of T2DM patients treated with metformin (n = 35) and another group of subjects with recent diagnosis of T2DM untreated (n = 35) with a mean age of 48 ± 9 years. In these subjects anthropometric measures were taken as weight, height, waist and hip circumference, were calculated the percentage of body fat, visceral fat and muscle mass. In addition, were measured glucose levels, lipid profile, adiponectin and Sfrp5. Results: Sfrp5 were higher in metformin-treated patients compared to the untreated group (19.9 vs 13.6 ng/mL $p < 0.001$), a negative correlation was found between Sfrp5 levels and total cholesterol levels ($r = -0.25$, $p = 0.03$) and percentage of visceral fat ($r = -0.26$, $p = 0.03$) and a positive correlation with HDL cholesterol levels ($r = 0.31$, $p = 0.01$) and adiponectin ($r = 0.65$, $p = < 0.001$). Conclusions: The findings show that metformin consumption increased levels of Sfrp5, which may lead to a decrease in the activation of the WNT/ β -catenin pathway impacting on adipogenesis.

Keywords : adiponectin, diabetes, metformin, Sfrp5

Conference Title : ICDM 2018 : International Conference on Diabetes and Metabolism

Conference Location : Rome, Italy

Conference Dates : May 03-04, 2018