WNT5A and IL10 in obese patients with insulin resistance

A.A. Komar, D.A. Skuratovskaia, M.A. Vulf and L.S.Litvinova,
Immanuel Kant Baltic Federal University, Russian Federation

Introduction: The anti-inflammatory cytokine interleukin-10 (IL10) may play a protective role in type 2 diabetes (T2D). The Wnt5a signaling pathway regulates the production of a wide range of cytokines in stellate cells of the liver, so we suggest a relationship between the expression of the WNT5a gene in the liver and the content of IL-10 in the circulation in obese patients with and without T2D.

Methodology & Theoretical Orientation: Serum glucose levels were determined on a biochemical analyzer; the concentration of IL10 in blood plasma- by flow fluorimetry; WNT5a gene expression level- by PCR; quantitative content of protein WNT5A – by Western Blotting.

Findings: Expression of the gene Wnt5a in the group of obese patients without diabetes increased by 1.7 times ($p<0.05$); the group of obese patients with diabetes increased by 1.47 times ($p<0.05$). Liver protein Wnt5a levels consistent with gene expression Wnt5a. Plasma blood IL10 levels in patients with type 2 diabetes were lower than in patients without type 2 diabetes [1]. Pereira C. et al. was found the inhibitory effect of Wnt5a overexpression on the anti-inflammatory cytokine IL10 in a culture of isolated macrophages and a decreased in the release of pro-inflammatory cytokines [1]. While a low IL10 concentration in blood plasma can contribute to the development of chronic inflammation in patients with T2D [2]. The level of IL10 negatively correlated with the level of expression of the WNT5a gene in the liver in patients with type 2 diabetes ($r=-0,548$, $p<0.05$). High expression of WNT5A in the liver was associated with a high IL10 plasma level in patients with obesity without type 2 diabetes and a low IL10 plasma level in patients with obesity with type 2 diabetes.

Conclusion & Significance: Thus, a high level of WNT5a gene expression can be associated with the protective effect of IL 10 in obese patients without T2D.

Biography

Komar Aleksandra is a biologist at the Center for Immunology and Cellular Biotechnology (Kaliningrad, Russian Federation). She studied cell technology in a cell laboratory in 2018 (Vilnius, Lithuania). She studied genetic and biochemical methods for a year of study in postgraduate school. This work is part of future PhD thesis.

alexandkomar@gmail.com