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Comparative evaluation of the effect of diabetic retinopathy progression factors on the content of the marker of endothelial damage interleukin-8 in the blood at the metabolic syndrome

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Background: Clinical studies indicate an increase in the levels of pro-inflammatory cytokines, adhesion molecules in the blood serum, activation of immune cells at diabetes and their correlation with the progression of Diabetic Retinopathy (DRP).

Objective: In patients with Metabolic Syndrome (MS), the concentration of blood circulating interleukin-8 (IL-8) was studied at various stages of DRP and a comparative evaluation of the effect of the factors of the progression of DRP on its content in the blood was performed. Researches were carried out in 64 patients with MS and DRP (men and women, mean age 61.55±2.37 years, average Type-2 Diabetes (T2D) length from registration date 11.23±2.11 years, mean level of glycated hemoglobin (HbA_1C) 9.89±0.78%, mean BMI 34.55±3.75 kg/m^2), which were divided into 3 groups depending on the stage of the DRP.

Method: The ANOVA and regression analysis were used as statistical analysis.

Result & Conclusion: It has been shown that the factor of age of patients (up to 60 years), the duration of diabetes (more than 10 years), the sub-compensation of carbohydrate metabolism and the peculiarity of hypoglycemic therapy (oral administration) may influence on the level of IL-8 in blood in patients with MS on the proliferative stage of DRP. A statistically significant negative association (r=-0.29, R2=8.6%, p=0.03) of the level of IL-8 in the blood and the age of the patients and the trend (r=-0.25, R^2=6.3%, p=0.06) to the inverse relationship of the duration of T2D and the concentration of IL-8 in the blood of patients with DRP and MS. The conclusion is drawn regarding the association of IL-8 with DRP, especially in patients under 60 years of age.

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