

# IGF-1 IN PREDICTION OF THE DEVELOPMENT OF PREDIABETES IN PATIENTS WITH ARTERIAL HYPERTENSION

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**The purpose** of the study is to determine the value of IGF-1 in predicting the development of prediabetes in patients with AH.

**Materials and methods.** 120 people were examined, including 100 patients and the control group – 20 healthy volunteer people. All patients were divided into 2 groups. The 1st group – 60 patients with AH, the 2nd – 40 patients with a combined course of AH and type 2 diabetes mellitus (T2DM), in which patients with AH and signs of prediabetes are separated into a separate subgroup of 21 people. The level of somatomedin IGF-1 in the blood serum was determined by the ELISA method.

**The results obtained.** In the presence of metabolic disorders, the values of indicators change. In paired multiple group comparisons of the level of IGF-1 between groups, it was established that the average level of IGF-1, in the blood serum of patients with AH and the combined course of AH and T2DM was significantly higher than in the control group. A high level of IGF-1 was established in the group of patients with AH and signs of prediabetes ( $104,29 \pm 5,54$  ng/ml).

In the group of patients with AH with signs of prediabetes, there are strong direct statistically significant correlations between the level of IGF-1 and the level of insulin in the blood serum ( $r = 0,7031$ ,  $p = 0,0004 < 0,05$ ), between the level of IGF-1 and the level of glycosylated hemoglobin (HbA1c) in the blood serum, ( $r = 0,6792$ ,  $p = 0,0007 < 0,05$ ), between the level of IGF-1 and the value of the HOMA-IR index ( $r = 0,7598$ ,  $p = 0,0068 < 0,05$ ).

The conducted study showed an increase in the level of IGF-1 in the blood serum of people with the combined pathology of AH and T2DM, in particular, already at the stage of prediabetes. This indicates the importance of further study of the pathophysiological mechanisms of the role of somatomedin IGF-1 in the development of AH in the presence of carbohydrate metabolism disorders.

The presence of the combined pathology of AH and T2DM are accompanied by the appearance of risk factors. The established high level of IGF-1 in the blood serum of patient with AH and signs of prediabetes can be considered as a compensatory reaction in the conditions of the development of initial disorders of carbohydrate metabolism.

**Conclusion.** The presence of T2DM in patients with AH is associated with a significant increase in the level of IGF-1 in the blood serum compared to the indicators in patients with an isolated course of AH, which indicates the role of IGF-1 somatomedin in the development of metabolic disorders.

The indicator of the level of somatomedin IGF-1 in the blood serum can be considered as an additional marker in the assessment of the risk of developing prediabetes in patients with AH. Prioritizing the diagnosis of risk factors for T2DM in the prediabetes stage can help prevent the development of T2DM and related complications.