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Review Article

The Role of Genetic Polymorphism in the Formation of Arterial Hypertension, Type 2 Diabetes and their Comorbidity

Author(s): Anna Shalimova*, Galyna Fadiieenko, Olena Kolesnikova, Anna Isayeva, Vira Zlatkina, Valeriya Nemtsova, Kostyantyn Prosolenko, Valentyna Psarova, Natalia Kyrychenko, Maryna Kochuieva.

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**Abstract:**

Background: Hereditary component plays a significant role in the formation of insulin resistance (IR) - one of the pathogenetic links of arterial hypertension (AH) and type 2 diabetes mellitus (DM2). However, the genetic predisposition to IR can not be realized and does not manifest itself clinically in the absence of appropriate factors of the environment (excessive nutrition, low physical activity, etc.).

Objective: The review summarizes the results of studies which describe the contribution of genetic polymorphism to the formation and progression of AH, DM2 and their comorbidity in various populations.

Results: In many studies, it has been established that genetic polymorphism of candidate genes is influenced by the formation, course and complication of AH and DM2. According to research data, the modulating effect of polymorphism of some genetic markers of AH and DM2 on metabolism and hemodynamics has been established. The results of numerous studies have shown a higher frequency of occurrence of AH and DM2, as well as their more severe course with adverse genetic polymorphisms. At the same time, the role of genetic polymorphism in the formation of AH and DM2 differs in different populations.

Conclusion: Contradictory data on the influence of gene polymorphisms on the formation of AH and DM2 in different populations, as well as a small number of studies on the combined effects of several polymorphisms on the formation of comorbidity, determine the continuation of research in this direction.

Keywords: Genetic polymorphism, arterial hypertension, type 2 diabetes, insulin resistance, risk factors, comorbidity.

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