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The investigations of Genetic determinants of the Metabolic syndrome

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Abstract

Metabolic syndrome is the aggregation of cardiovascular risk factors that increases the risk of type 2 diabetes and cardiovascular diseases. Family and twin studies, heritability spectrum for its components and different prevalence among ethnicities, have provided genetic susceptibility to the metabolic syndrome. The investigations of genetic base for the disorder have recognized numerous chromosomes, various DNA polymorphisms in candidate genes and many gene variants, that are associated with metabolic syndrome as an entity or its traits, which mostly are related to lipid metabolism. In addition, recent finding of the role of rare variants, epigenetic mechanisms, non-coding RNAs and evaluating the function of genes in molecular networks have improved our knowledge. However, a common genetic basis explaining the co-occurrence of its components has not identified and more research are essential.

Keywords: Metabolic syndrome, Genetic variants, Genetic study methods.

1. Introduction

Sedentary lifestyle and caloric excess result in Obesity that is common health problem and is the central factor for developing chronic diseases like type 2 diabetes, metabolic syndrome, cardiovascular disease, stroke and cancer. The metabolic syndrome (MeS) refers to the clustering of some metabolic disturbances including central obesity, insulin resistance, atherogenic dyslipidemia and hypertension (are known as metabolic syndrome components) [1]. Individuals