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Original article

Metabolic syndrome in children and adolescents. Clinical and genetic parallels

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ABSTRACT

Background: Metabolic syndrome in children and adolescents is a growing concern due to its association with increased cardiovascular risk and long-term health implications. This study aims to explore the clinical and genetic parallels of metabolic syndrome in this population.

Methods: A comprehensive literature review was conducted to gather evidence on the clinical manifestations and genetic factors associated with metabolic syndrome in children and adolescents. Key findings were analyzed and synthesized to highlight the clinical and genetic parallels of the condition.

Results: Metabolic syndrome in children and adolescents is characterized by a cluster of clinical manifestations, including central obesity, dyslipidemia, hypertension, and insulin resistance. These clinical features often persist into adulthood, increasing the risk of cardiovascular disease and type 2 diabetes. Genetic factors play a significant role in the development and progression of metabolic syndrome, with several genes implicated in metabolic pathways, adipocyte function, and insulin regulation. Genetic variations contribute to individual susceptibility to metabolic abnormalities and influence the response to lifestyle modifications and pharmacological interventions.

Conclusion: Metabolic syndrome in children and adolescents exhibits clinical and genetic parallels. Early identification and intervention are crucial in preventing the progression of metabolic abnormalities and reducing long-term health risks. Healthcare providers should assess clinical manifestations, including central obesity, dyslipidemia, hypertension, and insulin resistance, in this population. Furthermore, understanding the genetic factors underlying metabolic syndrome can aid in risk stratification, personalized management strategies, and the development of targeted therapies. Future research should focus on elucidating the specific genetic variants associated with metabolic syndrome and their functional implications.

Keywords: *Metabolic Syndrome, Children, Adolescents, Clinical Manifestations, Genetic Factors*

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