

PATHOPHYSIOLOGY OF OBESITY-ASSOCIATED HYPERTENSION AND THE IMPACT OF NEW INCRETIN-BASED THERAPIES.

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RESUMO

ABSTRACT Introduction: Systemic Arterial Hypertension (SAH) is a multifactorial clinical condition, diagnosed by high and sustained blood pressure levels, resulting from the complex interaction between genetic, epigenetic, environmental and lifestyle factors. Among the main modifiable risk factors, excess body weight stands out due to its high prevalence and because it frequently coexists with hypertension. The relationship between these pathologies is bidirectional and complex and involves physiological, metabolic and inflammatory mechanisms, which significantly contribute to the increased risk of cardiovascular compromise. Objectives: To analyze the main pathophysiological mechanisms that explain the interaction between obesity and hypertension, as well as discuss the clinical implications of new therapeutic approaches. Methodology: This investigation is characterized as an integrative literature review with a qualitative and descriptive approach. Data were obtained through scientific evidence available in PubMed, Scielo, Clinical Hyperthersion covering the period from 2019 to 2025. The search strategy used (MeSH/DeCS) such as obesity, hypertension, cardiovascular risk and treatment. Eligibility criteria were applied to select clinical studies and reviews that addressed the pathophysiology of neurohormonal activation and contemporary pharmacological interventions. Results: Obesity contributes to the development of hypertension through several mechanisms, including insulin resistance, activation of the Sympathetic Nervous System and physical compression of the kidneys by retroperitoneal fat. Additionally, adipose tissue dysfunction promotes excessive secretion of leptin and pro-inflammatory cytokines, which stimulate the activation of the Renin-Angiotensin-Aldosterone System (RAAS), resulting in greater sodium reabsorption and vasoconstriction. Individuals with a normal BMI but a high percentage of visceral fat are at increased metabolic risk. Therefore, although lifestyle changes are the initial pillar, low adherence requires pharmacological support. Incretin-based therapies, such as Liraglutide, Semaglutide and Tirzepatide, have demonstrated superior results in concomitantly reducing weight and blood pressure, while bariatric surgery and renal denervation remain options for severe or resistant cases.

Conclusion: Systemic arterial hypertension (SAH) and obesity intensify cardiovascular risk through integrated metabolic pathways. Thus, incretin- based therapies promote a significant reduction in body weight and blood pressure, mainly mediated by weight loss, in addition to exerting direct hemodynamic and nephroprotective benefits "The management of these conditions therefore requires integrated and individualized therapeutic strategies to reduce damage to target organs and reduce cardiovascular mortality.

Palavras-chave: Obesity Hypertension Treatment Interaction.