

## THE RELATIONSHIP BETWEEN OBESITY AND CUSHING'S SYNDROME

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**Abstract:** Introduction: Cushing's syndrome (CS) consists of a set of clinical abnormalities resulting from interruption of the hypothalamic-pituitary-adrenal axis, caused by chronic supraphysiological exposure to circulating cortisol. Its etiology may or may not be dependent on the pituitary hormone ACTH. Cortisol is an immunosuppressive hormone produced by the adrenal glands, which helps regulate the metabolism of fats, carbohydrates and lipids. Clinically, excessive production of glucocorticoids has well-defined functions in hyperlipidemia, increased abdominal circumference (visceral fat), hypertension and peripheral insulin resistance, a set of factors that characterize metabolic syndrome and obesity. Thus, a strong interrelationship between increases in cortisol levels in patients with obesity is evident. The objective of this study is to analyze, based on current literature, the association of hypercortisolism present in Cushing's syndrome with obesity. As a methodology, a

bibliographical review of articles published on the Pubmed, Nature, The Lancet and Scielo platforms was carried out, during the periods from 1997 to 2023. As a result, it is concluded that hypercortisolism in Cushing's syndrome is related to obesity of several shapes. Patients with endogenous CS generally have higher levels of total cholesterol, LDL-C, triglycerides. Although glucocorticoids are known as anti-inflammatory drugs, there are higher levels of pro-inflammatory cytokines (IL-6 and IL-1B) in patients with CS than patients with high BMI. It is also suggested that the prevalence of CS is higher in at-risk populations with obesity and DM2. Furthermore, adipose stromal cells in omental fat can generate active cortisol from cortisone, through the  $11\beta$ -HSD1 enzyme, causing continuous exposure to the hormone. Therefore, these findings demonstrate a direct relationship between the hypercortisolism present in Cushing's syndrome and obesity.

**Keywords:** Cushing's Syndrome, Obesity, Cortisol, Hypercortisolism.