

11. HORMONAL DISTURBANCES IN THE POLYCYSTIC OVARY SYNDROME



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Introduction. Polycystic ovary syndrome (PCOS) is an endocrine pathology that affects women of reproductive age. Hormonal disturbances in the PCOS are the central cause of heterogenous clinical presentation involving infertility, metabolic disorders and ovarian dysfunction.

Aim of study. To identify and emphasize the most important hormonal disorders that have a pathogenetic impact in PCOS.

Methods and materials. Current articles from PubMed, ScienceDirect and Medscape databases were included and evaluated in the study, using keywords such as: polycystic ovary syndrome, androgens, insulin.

Results. The study has revealed that the compromised function of the hypothalamic-pituitary-ovarian axis leads to an increased pulsatile secretion of gonadotropin-releasing hormone (GnRh), favoring the synthesis of the luteinizing hormone (LH). Therefore, LH will influence an increased anabolism of androgens in the theca cells of the ovarian stroma, causing hyperandrogenism. Elevated levels of androgens can lead to the tissue insulin resistance, directly affecting insulin signaling mechanisms. Thereby, tissue insulin resistance can cause a compensatory state of hyperinsulinism which will intensify LH-induced androgen synthesis. On the other hand, it will inhibit the hepatic production of sex hormone-binding globulin, thus increasing bioavailability of free testosterone.

Conclusion. Hormonal disturbances in the polycystic ovary syndrome are responsible for various metabolic changes. The long-term persistence of these metabolic errors can provoke dyslipidemia, obesity, cardiovascular events and type 2 diabetes mellitus.