



# Polycystic ovary syndrome

Dear colleagues,

Polycystic ovary syndrome (PCOS) is a complex disorder combining features of reproductive, metabolic and psychological disturbances. It is considered to be one of the most common conditions affecting 8-13% of reproductive-aged women. Patients suffering from PCOS cope with a spectrum of diverse symptoms and signs comprising irregular menstrual cycles, hirsutism, infertility and pregnancy complications and cardiovascular risk factors, anxiety, depression, body image which compel patients to seek medical attention throughout their lifetime.

According to the ESHRE/ASRM 2003 definition, PCOS diagnosis in adults requires the presence of at least two of the following criteria – oligo/anovulation (OA), hyperandrogenism (HA) and polycystic ovarian morphology (PCOM), and the exclusion of other endocrinologic disorders presenting with similar clinical manifestations. This definition elicit the need for further refinement of PCOS patient categories into, at least, four different phenotypes. In 2018, clinical, biochemical and ultrasonic criteria for the diagnosis of PCOS are reviewed aimed to improve the experience and health outcomes of women with PCOS. However, further research is still needed especially in improving the accuracy of diagnostic criteria of PCOS as well the specificities of different PCOS phenotypes.

There is a huge pile of studies aimed to unveil the aetiology of PCOS. Studies focused on finding the link between genes and hormonal disturbances associated with predisposition for PCOS have identified over 200 candidates among which the majority is involved in encoding the androgen, LH FSH and leptin receptors. In genetically predisposed individuals, environmental factors such as diet, unhealthy lifestyle and infectious mediators are considered to be responsible for triggering the cascade of events leading to development of PCOS associated clinical and biochemical features. In this cascade, there are investigations attributing the pivotal role to insulin resistance. Others identified ovary as the primary source of the disorder rather than the target of a neuroendocrine disturbance. The term functional ovarian hyperandrogenism (FOH) was assigned to describe the suggested dysregulation of 17-hydroxylase and 17,20-lipase activities, two activities of the single enzyme cytochrome P450c17 (CYP17) encoded by CYP17A1 leading to hyperandrogenism and anovulation. Great work is still ahead in improving the understanding of etiology of this comprehensive syndrome.

The goal of this special issue is to provide well established and novel data from original articles and reviews dealing with the etiology as well as with the clinical challenges associated with PCOS.

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