

# Polycystic Ovary Syndrome: Clinical Manifestations and Diagnostic

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## Perspective

Polycystic ovarian syndrome emerges as the most conspicuous endocrinopathy affecting 2.2-20% of women belonging to reproductive age group. Diagnosis of PCOS is established when 2/3 of the Rotterdam's criteria is met i.e., hyperandrogenism, ovulatory dysfunction and polycystic ovaries. (12 or more follicles of size 2-9 mm in each ovary and/or ovarian volume >10 ml). According to guidelines from endocrine society, early recognition of PCOD facilitate healthcare providers to prevent and treat adequately wide range of metabolic complications i.e., impaired glucose tolerance, type-II diabetes mellitus, metabolic syndrome, dyslipidemia, non-alcoholic fatty liver disease and non-alcoholic steatohepatitis, obesity, obstructive sleep apnea and cardiovascular diseases. Diagnostic workup and management of PCOS is based on correction of metabolic derangements, psychosocial problems, and control of menstrual cycle and prevention of endometrial hyperplasia, assessment of ovulation/fertility and reduction of dermatological manifestations.

Patient's desire for induction of ovulation and pregnancy plays a pivotal role in management of PCOS. This study emphasizes on potentially risk factors and impacts of PCOS on multiple systems along with various treatment modalities (pharmaceutical therapy, hormonal contraceptives and lifestyle modification) available to nullify them. Self-care and multidisciplinary approach to reduce the morbidity due to PCOS. The polycystic ovary syndrome (PCOS) is an important cause of both menstrual irregularity and androgen excess in women. When fully expressed, the manifestations include irregular menstrual cycles, hirsutism, acne, and, frequently, obesity. The clinical manifestations of PCOS will be reviewed here. The epidemiology and pathogenesis of, diagnostic criteria for and treatment of PCOS are described in detail separately. It is important to appreciate that PCOS is a syndrome, reflecting multiple potential etiologies and variable clinical presentations. Its key features are oligo- or anovulation and hyperandrogenism. Other features are polycystic ovaries on pelvic ultrasonography, infertility due to oligoovulation, obesity, and insulin resistance.

Polycystic ovary syndrome (PCOS) is of clinical and public health importance as it is very common, affecting up to one in five women of reproductive age. It has significant and diverse clinical implications including reproductive (infertility, hyperandrogenism, hirsutism), metabolic (insulin resistance, impaired glucose tolerance, type 2 diabetes mellitus, adverse cardiovascular risk profiles) and psychological features (increased anxiety, depression and worsened quality of life). Polycystic ovary syndrome is a heterogeneous condition and, as such, clinical and research agendas are broad and involve many disciplines. The phenotype varies widely depending on life stage, genotype, ethnicity and environmental factors including lifestyle and bodyweight. Importantly, PCOS has unique interactions with the ever

increasing obesity prevalence worldwide as obesity-induced insulin resistance significantly exacerbates all the features of PCOS. Furthermore, it has clinical implications across the lifespan and is relevant to related family members with an increased risk for metabolic conditions reported in first-degree relatives. Therapy should focus on both the short and long-term reproductive, metabolic and psychological features.

Given the aetiological role of insulin resistance and the impact of obesity on both hyperinsulinaemia and hyperandrogenism, multidisciplinary lifestyle improvement aimed at normalising insulin resistance, improving androgen status and aiding weight management is recognised as a crucial initial treatment strategy. Modest weight loss of 5% to 10% of initial body weight has been demonstrated to improve many of the features of PCOS. Management should focus on support, education, addressing psychological factors and strongly emphasising healthy lifestyle with targeted medical therapy as required. Monitoring and management of long-term metabolic complications is also an important part of routine clinical care. Comprehensive evidence-based guidelines are needed to aid early diagnosis, appropriate investigation, regular screening and treatment of this common condition. Whilst reproductive features of PCOS are well recognised and are covered here, this review focuses primarily on the less appreciated cardio metabolic and psychological features of PCOS.

Polycystic ovary syndrome (PCOS) is a frustrating experience for women, often complex for managing clinicians and is a scientific challenge for researchers. As research in PCOS is rapidly advancing, it is vital that research evidence is translated to knowledge and action among women, healthcare professionals and policy makers. PCOS is the most common endocrine abnormality in reproductive-age women. The prevalence of PCOS is traditionally estimated at 4% to 8% from studies performed in Greece, Spain and the USA. The prevalence of PCOS has increased with the use of different diagnostic criteria and has recently been shown to be 18% ( $17.8 \pm 2.8\%$ ) in the first community-based prevalence study based on current Rotterdam diagnostic criteria. Importantly, 70% of women in this recent study were undiagnosed. While the upper limit of prevalence for this study was imputed using estimates of polycystic ovaries (PCO) for women who had not had an ultrasound, non-imputed prevalences were calculated as  $11.9 \pm 2.4\%$ . PCOS has also been noted to affect 28% of unselected obese and 5% of lean women. In 2006, based on US data and traditionally lower prevalence estimates the anticipated economic burden of PCOS in Australia was AU\$400 million (menstrual dysfunction 31%, infertility 12% and PCOS-associated diabetes 40% of total costs), representing a major health and economic burden. With regards to fertility, the estimated cost per birth in overweight Australian women with PCOS is high. Promisingly, lifestyle intervention comprising dietary, exercise and behavioural therapy improve fertility and reduces costs per birth significantly.

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