

Weerasooriya S.N.A., Ranathunga T.D.

POLYCYSTIC OVARY SYNDROME AS ONE OF THE MAIN PROBLEMS IN MODERN GYNECOLOGY

Tutor: PhD, associate professor Smolei N.A.

*Department of Obstetrics and Gynecology
Grodno State Medical University, Grodno*

Polycystic ovary syndrome (PCOS) is a common, heterogeneous endocrine disorder affecting an estimated 5–20% of reproductive-aged women worldwide and characterized by hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology. Like preeclampsia, which is described as “a multisystem hypertensive disorder arising after 20 weeks of gestation and remains a major global cause of maternal and perinatal morbidity and mortality,” PCOS also exerts multisystem effects that extend far beyond the reproductive axis. PCOS pathophysiology involves intrinsic insulin resistance, dysfunctional adipose tissue, chronic low-grade inflammation, and neuroendocrine alterations, which together drive both reproductive and metabolic complications.

Clinically, PCOS presents with menstrual irregularity, anovulation, hirsutism, acne, and subfertility, but its impact on long-term health is increasingly recognized. Hyperandrogenism and insulin resistance promote central obesity, impaired glucose tolerance, and type 2 diabetes mellitus, while adverse lipid profiles and endothelial dysfunction contribute to atherosclerotic risk. Large cohort and meta-analytic data show clustering of cardiometabolic risk factors in women with PCOS and up to a 2.5-fold increased risk of cardiovascular events and adverse pregnancy outcomes, particularly in those with obesity. However, when matched for body weight, the excess cardiovascular risk appears attenuated, underscoring obesity as a major modifier of prognosis.

Long-term follow-up studies indicate that young women with PCOS have a higher incidence of hypertension and metabolic syndrome compared with controls, with risks most pronounced before 40 years of age. These cardiometabolic sequelae mirror the “increased long-term maternal cardiovascular risk” described after early-onset preeclampsia, highlighting a shared theme of persistent endothelial and metabolic vulnerability following reproductive-age disease. Psychological and neurobehavioral complications—including depression, anxiety, body-image distress, and disordered eating—are also more prevalent and may interact bidirectionally with endocrine and metabolic dysfunction, further worsening quality of life and cardiometabolic risk.

Reproductive complications of PCOS include chronic anovulation, subfertility, increased need for assisted reproduction, and higher rates of early pregnancy loss. Hyperandrogenism and obesity also predispose to gestational diabetes, hypertensive disorders of pregnancy, and preterm birth, linking PCOS to adverse obstetric and perinatal outcomes. Emerging evidence suggests that in utero exposure to maternal hyperandrogenism and metabolic disturbance may program offspring toward later cardiometabolic disease, paralleling the intergenerational effects observed after preeclampsia.

Overall, PCOS should be viewed as a chronic, multisystem condition with substantial reproductive, metabolic, cardiovascular, and psychological complications. Early diagnosis, weight management, and long-term cardiometabolic surveillance are essential to mitigate these risks and improve life-course health in affected women. That is why it is important to diagnose PCOS and treat it to normalize functions of the reproductive system.