



Microbial dysbiosis, obesity, and insulin Resistance: Understanding gut-ovary association in polycystic ovary syndrome

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Highlights

- PCOS affects 5–10% of women, with anovulation, polycystic ovaries, and hyperandrogenism as core features.
- Metabolic issues in PCOS include insulin resistance, obesity, and impaired glucose metabolism.
- Gut microbiota changes play a key role in PCOS development and complications.
- Lifestyle interventions like yoga and probiotics improve outcomes.
- More research is needed on gut-targeted therapies for PCOS.

Abstract

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder, affecting 5–10% of women of reproductive age, and is characterized by complex etiology involving reproductive and metabolic disturbances. The core clinical features include anovulation, irregular ovulation, polycystic ovarian morphology, and hyperandrogenism (HA), with frequent accompaniments of metabolic dysfunctions such as dyslipidemia, insulin resistance (IR), abdominal obesity, and impaired glucose metabolism. The available evidence shows significant involvement of gut microbiota in the pathogenesis and progression of PCOS. Alterations in gut, PCOS axis-including changes in gut microbiota composition as contributed by such alterations in the pathogenesis of PCOS and its complications like obesity, IR, and type 2 diabetes mellitus (T2DM), will be discussed in this review. This review covers such aspects that gut