Postpartum Insulin Resistance as a Trigger for New Onset (PMOS/PCOS): The Missing Link

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Polycystic ovarian syndrome (PCOS), recently referred to by some experts as Polyendocrine Metabolic Ovarian Syndrome (PMOS), is a well-recognized metabolic and reproductive disorder. However, an important phase of its initiation is still overlooked: the postpartum period. In the postpartum period, despite normal thyroid and insulin levels, many women experience unexplained weight gain, fatigue, acne, and irregularity in menstruation. Although these symptoms resemble PCOS, they are ignored as the "normal recovery phase". New evidence has shown that prolonged insulin resistance is the underlying cause of PCOS/PMOS in healthy women in the postpartum period [1].

During pregnancy, fetal hormones such as estrogen, progesterone, human placental lactogen, and cortisol are naturally elevated, leading to insulin resistance and ensuring glucose availability to the fetus. After pregnancy, these hormones should decline, and insulin sensitivity should return to normal. Still, in some women, inflammation, stress, visceral fat retention, and sleep deprivation can cause the body to fail to achieve normal metabolic function. As a result of this insulin resistance, androgen levels remain elevated, increasing androgen excess and ovarian dysfunction, which is the main cause of PCOS/PMOS [2, 3].

Despite its clinical relevance, there is little research on this phenomenon. Childbirth itself causes metabolic instability and is the main cause of developing PCOS/PMOS in the postpartum period in previously healthy females. This is overlooked, and most of the research has focused on pre-pregnancy PCOS/PMOS or infertility. Recognizing postpartum insulin resistance as a potential precursor to PCOS/PMOS would open a new frontier in women's health, emphasizing prevention rather than delayed diagnosis. A new unexplored area of women's health would be explored by recognizing postpartum insulin resistance as a possible precursor, with a focus on prevention rather than delayed or misdiagnosis [4].

Physiotherapy plays a vital role in managing these types of risks. Many studies have demonstrated that physical exercise helps to reduce insulin resistance and alleviate PCOS symptoms. Physiotherapists must supervise metabolic rehabilitation as part of postpartum care, in addition to lactation, mood elevation, posture, and disabilities. Early physiotherapy interventions will help females restore insulin senility and protect them from developing this metabolic disorder and its symptoms. By addressing this overlooked connection, we can focus on the prevention of PCOS/PMOS instead of treating them.

Additionally, beyond physiological and hormonal factors, several environmental and lifestyle-related contributors may exacerbate postpartum insulin resistance. Exposure to endocrine-disrupting chemicals, such as bisphenol A and phthalates, has been associated with alterations in metabolic and reproductive functions. Furthermore, poor dietary habits during postpartum, chronic sleep deprivation, and sedentary behavior may disturb glucose metabolism and lead to weight gain, thereby increasing susceptibility to insulin resistance and PCOS/PMOS. Addressing these changeable factors through patient education, nutritional counseling, and tailored physical activity may help to reduce long-term metabolic and reproductive complications.

GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

Artificial intelligence-assisted tools (ChatGPT, OpenAI) were used solely for language refinement and grammatical editing. The authors reviewed, verified, and take full responsibility for the final content of the manuscript.

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