

Fasting as possible complementary approach for polycystic ovary syndrome: Hope or hype?

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ABSTRACT

Polycystic ovary syndrome (PCOS) is a common endocrine system disorder among women of reproductive age. In several cases, PCOS women show infertility or subfertility and other metabolic alteration, such as insulin resistance (InsR), dyslipidaemia, hyperinsulinemia and obesity. Despite the aetiology of the syndrome is still far from be elucidated, it could be considered the result of concurrent endocrine modifications, lifestyle factors and genetic background. In particular, accumulating evidence suggests that InsR and compensatory hyperinsulinemia play a pivotal pathogenic role in the hyperandrogenism of many PCOS phenotypes, which in turn have a clear detrimental effect on chronic anovulation. Different forms of fasting, such as intermittent fasting (IF, including alternate day fasting, or twice weekly fasting, for example) and periodic fasting (PF, lasting several days or longer every 2 or more weeks) are currently being tested in several in vitro and in vivo studies. Changes in the circulating levels of Insulin Growth Factor-1 (IGF-1), Insulin-like Growth Factor-Binding Protein 1 (IGFBP1), glucose and insulin are typical effects of fasting which may play a key role on aging and metabolic homeostasis. Considering the paramount importance of InsR and compensatory hyperinsulinemia, different fasting regimens can reduce IGF-1, IGFBP1, glucose and insulin levels and consequently have beneficial effects on ovarian function, androgen excess and infertility in PCOS women.