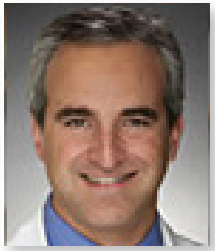
Update on PCOS: Physiology & Practice



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Polycystic ovary syndrome (PCOS) is a common metabolic disorder characterized by irregular or absent menses, clinical manifestation of male hormone excess (hirsutism, acne, male pattern hair loss) and/or polycystic architecture to the ovaries. The name of the disorder is misleading, in that it implies an ovarian source for the metabolic disorder when the source is extra-ovarian and closely related to carbohydrate metabolism. The disorder has been depicted in literature and art for centuries though a comprehensive understanding of the physiology of PCOS is still evolving. Current science implicates insulin resistance (and other modifications to carbohydrate metabolic pathways) as the root cause of the disorder.

For patients who are not interested in pregnancy, treatment centers on suppression of ovarian androgen production, weight loss and improved insulin sensitivity through medication and exercise, androgen blockade and prophylaxis against endometrial hyperplasia and cancer. The birth control pill in combination with an anti-androgen medication and/or an insulin sensitizing agent can accomplish all the above.

For patients who desire pregnancy, treatment focuses on weight loss and ovulation induction. Ovulation induction can be accomplished with oral agents or injectable gonadotropins. Oral agents induce ovulation through variable mechanisms of estrogen blockade, which lead to reflexive rise in FSH from the pituitary. Gonadotropins currently available in the US contain either recombinant FSH or urinary FSH with low dose pituitary-secreted hCG.

Newer drugs for Type 2 diabetes, namely the GLP-1 agonists and DPP-4 antagonists, which increase the activity of GLP-1 by blocking its breakdown, will both improve insulin sensitivity GLP-1 agonist use is associated with increased insulin sensitivity, decreased ovarian androgen secretion and weight loss of about 5% of total. The use of the GLP-1/DPP-4 medications for ovulation induction has not been established, though some preliminary data suggests they can be used in conjunction with more established ovulation induction agents. Caution must be used in applying GLP-1 agonists to fertility therapy as this class of drug is not considered safe in pregnancy.