Different routes of progesterone administration and polycystic ovary syndrome: a review of the literature.

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Abstract
Polycystic ovary syndrome (PCOS) is a common endocrine disorder in woman of reproductive age. Although extensive studies have been performed in past decades to investigate the pathobiological mechanisms underlying the onset of this disease, its etiology remains unknown. Progesterone is a hormone of paramount importance in ovulation, implantation and luteal phase support. Low levels of progesterone have been found in the early luteal phase in PCOS patients. Granulosa cells from polycystic ovaries show an altered progesterone production. Moreover, the lack of cyclical exposure to progesterone may have a role in the development of the gonadotropin and androgen abnormalities found in PCOS patients. Ovulation failure and progesterone deficiency may facilitate the hypothalamic-pituitary abnormalities causing the associated disordered luteinizing hormone secretion in PCOS. Progesterone may be administered to PCOS patients in the following cases: to induce withdrawal bleeding, to suppress secretion of luteinizing hormone, in ovulation induction in clomiphene citrate-resistant patients and in luteal phase support in assisted reproduction. We discuss the pharmacologic characteristics of the different routes of progesterone administration with reference to these diverse indications, the therapeutic objectives and patient compliance.

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