



Pregnancy in an infertile woman with polycystic ovary syndrome: A case report

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Abstract

The most common cause of anovulatory infertility is polycystic ovary syndrome (PCOS). It is a syndrome of ovarian dysfunction associated with hyperandrogenism and polycystic ovary morphology. Several treatment options are available for women with infertility related to PCOS including weight reduction, clomiphene citrate, gonadotropins, laparoscopic ovarian diathermy, metformin and letrozole. This is a case report of 37-year-old infertile female who was married for 12 years and tried ovulation induction drugs several times but failed to conceive. She was overweight, hirsute, oligomenorrheic and lastly amenorrheic. Investigations revealed altered ratio of FSH and LH, and polycystic ovaries on ultrasound. The patient was advised to do regular physical exercise and prescribed metformin and combined oral contraceptive pill. After treatment restoration of regular menstruation occurred, weight reduced and patient became pregnant. Conclusion: Before choosing any treatment option for an infertile woman with PCOS proper control of abnormal metabolic conditions are necessary for a successful treatment outcome.

Keywords: pregnancy, infertile woman, polycystic ovary syndrome

Introduction

Polycystic ovary syndrome (PCOS), also called hyperandrogenic anovulation (HA) ^[1], or Stein-Leventhal syndrome ^[2], is a set of symptoms due to a hormone imbalance in women ^[3] Symptoms include: irregular or no menstrual period, heavy periods, excess body and facial hair, acne, pelvic pain, trouble getting pregnant, and patches of thick darker, velvety skin ^[4] Associated conditions include: type 2 diabetes, obesity, obstructive sleep apnea, heart disease, mood disorders, and endometrial cancer ^[3] PCOS occurs due to a combination of genetic and environmental factors ^[5] Risk factors include obesity, not enough physical exercise and a family history of someone with the condition ^[6] Diagnosis is based on two of the following three findings: oligo/amenorrhoea, hyperandrogenism (clinical or biochemical), polycystic ovaries on ultrasound (Rotterdam criteria). Other conditions that produce similar symptoms include adrenal hyperplasia, hypothyroidism, Cushing's syndrome and hyperprolactinemia ^[7] Infertility is "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse" ^[8] About 35% of the issues involved with infertility are due to women. A major cause of infertility in women is the inability to ovulate. PCOS accounts for 75% of cases of anovulatory infertility ^[9-10].

Case report

A 37-year-old female presented to outpatient clinic of civil hospital, Thural for evaluation of infertility and menstrual irregularity. She was married for 12-years and had a history of abortion 11-years back. She was oligomenorrheic for last 6-years with a period of amenorrhoea for last 3-months. She also complained about excessive facial hair for last one year. On examination her height was 153 cm, weight 71 kg, BMI 30.3

kg/m², pulse-70/min and BP-130/80 mm of hg. She was hirsute and had signs of acanthosis nigricans. Other systemic examination revealed normality findings.

Her investigations revealed that pregnancy test was negative and semen analysis of her husband was normal. Serum LH- 9.34 IU/L, FSH- 2.47 IU/L, TSH- 1.92 mU/L, prolactin- 5.42 ng/L, estradiol- 212 pmol/L, testosterone-3.14 nmol/L, cortisol (fasting)- 14.0 ng/dl, 17 OH progesterone-1.23 nmol/L, fasting blood sugar 98 mg/dl, 2 hours after 75 gm anhydrous glucose-153 mg/dl, and HbA1c 5.7%. CBC, renal function, liver function tests, lipid profile except triglycerides were normal.

USG of whole abdomen showed fatty liver grade I, multiple small ovarian follicles and no dominant follicles indicating PCOS.

The patient was prescribed Metformin 500 mg twice daily with myoinositol 1100 mg once daily for 3-months. The Patient was advised to do regular physical exercise and to have a low glycaemic diet. The patient was on regular follow up. After 6-months, regular menstruation was established and 8 kg weight was reduced. After 11 months, the patient became pregnant.

Discussion

PCOS is the most common endocrine disorders among women between the ages 18 and 44 years ^[10] It affects approximately 5% to 10% of this age group ^[6]

The mechanism of anovulation in PCOS is uncertain, but there is evidence of arrested antral follicle development, which in turn may be caused by abnormal interaction of insulin and luteinizing hormone (LH) on granulosa cells ^[11] Endocrine disruption such as changed levels of gonadotropin releasing hormone ^[12], gonadotropins (especially an increase in luteinizing hormone) ^[12], ^[13], hyperandrogenemia and hyperinsulinemia ^[14] may also directly

decrease fertility. Gonadotropins are released by gonadotroph cells of pituitary gland, these cells appear to harbor insulin receptors, which are affected by elevated insulin levels [12]. A reason that insulin sensitizers work in increasing fertility is that they lower total insulin levels in body as metabolic tissues regain sensitivity to the hormone. This reduces the overstimulation of gonadotroph cells in pituitary [12].

Conclusion

The optimal treatment for infertile women with PCOS has not yet been defined. But before any intervention is initiated, preconceptional counseling should be provided emphasizing the importance of life style, especially weight reduction and exercise in overweight women. After controlling the metabolic condition of the disease, patient may be free from infertility.

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