

Polycystic ovarian syndrome

PCOS is a common complex endocrine disorder , affecting woman at reproductive age group and most common cause of chronic anovulation . It is also called stein – Leventhal syndrome .

Definition

It is chronic anovulation syndrome , its diagnosis made when two out of three of the following criteria are found (Roherdom's criteria 2003) .

1. Clinical or biochemical evidence of androgen excess after exclusion of others related disorders .
2. Oligo and / or anovulation .
3. Ultrasound appearance of polycystic ovaries :- presence of ≥ 12 follicles in each or one ovary measuring 2 – 9 mm surrounding hyperandrogenic stroma and / or increased ovarian volume (> 10 ml) which is called Pearl's of sting .

This ultrasonic features are not applicable to women take Cosp. Obesity, with insulin resistance , elevated LH level , reversed LH to FSH ratio and subfertility are common features .

Prevalence

It is thought that PCOS occurs in about 6 – 10 % of women in reproductive age group worldwide . The prevalence is much more higher in south Asian women .

Pathophysiology and etiology

The etiology of PCOS is largely unknown and still understood but seems to involve certain complex interactions between environmental (diet & exercise) & multiple genetic factors . The mode of inheritance is autosomal dominant pattern .

Several factors are implicated in pathophysiology of PCOS involving ovarian dysfunction characterized by increased production of ovarian androgen

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hypothalamic dysfunction LH hypersecretion stimulate androgen production by theca cells and peripheral insulin resistance in both obese & non obese PCOS patients leads to insulin hyper secretion ———→ more hyperandrogenism by inhibition of hepatic production of SHBG & IGF – BP1 causing anovulation .

Other PCOS manifestations

- Obesity :- 50 % or more patients of PCOS are obese .
- Metabolic syndrome :- Type II diabetes , hypertension , dyslipidaemia , atherosclerosis and is a cardiac disease .
- Dermatological manifestations :- hirsutism , alopecia , acne , oily skin , seborrhoea & acanthosis nigricans .

Acanthosis nigricans is an area of increased skin pigmentation that are velvety in texture & occurs in axilla and other flexures . It occurs in 2 % of PCOS women & it is a marker of insulin resistance .

- Oligomenorrhoea or amenorrhoea :- occurs in 65 – 75 % of patients with PCOS .
- Hirsutism : 30 % - 70 % of patients .
- Subfertility in 75 % of patients .
- Recurrent miscarriage in 50 – 60 % (why ?)

Laboratory tests :-

- 1- Elevated testosterone level .
- 2- Decreased SHBG level .
- 3- Elevated LH level .
- 4- Elevated LH / FSH ratio .
- 5- Increased fasting insulin level .

Management :

PCOS treatment depends whether or not fertility is desired , and the patients have cyclical disturbance or not , so the treatment should be directed at patients symptoms .

- 1- Changes of certain life styles such as diet and exercise are considered first line treatment for adolescent girl and women with PCOS .
- 2- Treatment of obesity :- weight lose is the cornerstone of treatment of PCOS , wherever a small amount of weight loss (~ 5 kg) can lead to spontaneous resumption of ovulation which minimize the risk of PCOS during pregnancy regarding fetal & maternal morbidities .

Weight loss is best achieved by diet & excercise or by weight losing agents such as centrally acting serotonin (sibutramine) & peripherally acting lipase inhibitor (orlistat) .

- 3- Treatment of oligo and / or amenohoca :- without treatment , there is theortical risk of unopposed estrogen stimulation of endometrium causing endometrial cancer .

Cyclical progesterone is useful in treatment of PCOS. oral progesterone should be given at least 10 days from day 16th – 25th day of cycle or for 21 days from 5th – 25th day of cycle for 3 – 6 months oral progesteronis are either .

No rithe sterong acetate (primolut n 5 mg bd) .

Or Medroxyprogesterone acetate (10 mg oncedaily) .

Or cyclical COCP . which is the first line treatment for cyclical regulation in adolesunt females .

- 4- Treatment of Hirustim .

- 5- Ovulation induction .

Antiestrogen (clomiphene citrate) is used for ovulation induction on hypothalamus , clomid binds to and blocks estrogen receptors leading to increased GnRH. Pulse amplitude & \uparrow FSH level leads to better follicular growth . 50 – 150 mg of elamid frem 2nd day or 5th day of cycle for 5 days is given .

It can be offered for 6 – 12 months clomiphene citrate ferilure or resistance or recumont obotions are beit indications for use of aromatase inhibitor (Letrazol) or gonadotrophines use or laproswpical ovarion drilling .

Tamoxifen :- 20 – 40 mg daily for 5 days .

Gonadotrophines : FSH use in patients with clomid resistance or failure .

Gonadotrophines agonists :- used by subcutaneous pump .

Aromatase inhibitors :- letrozol and anastrozole decrease ovarian estrogen production causing endogenous FSH stimulation & spontaneous ovulation & pregnancy with less abortion rate .

6- Insulin sensitizing agents

Metformin , a biguanide , is the most common sensitizing agent used for ovulation induction in PCOS patients either as a first line therapy or second line second line or in combination with ovulatory drugs . It has been shown that non- obese patients respond better than obese one . Metformin if continued in the first trimester of gestation may decrease miscarriage risk in obese women .

Metformin (Glucophage) :- 500mg b.d or T.d.s. or 850 mg once or twice daily .

7- Laproscopic ovarian drilling (LOD)

LOD is mainly indicated in clomiphene – resistant patient which have similar efficacy to gonadotrophines with advantage of low risk of multiple pregnancy rate & OHSS. LOD can cause ovulation in 80 % & pregnancy rate of 60% . It is also correct the biochemical abnormalities such as high LH & androgen .

In LOD only minimal ovarian thermal damage is required to stimulate ovulation (four points diathermy set at 40 watt for 40 seconds at each point) .

Long term sequelae of PCOS

- 1- Pregnancy induced Hypertension & CHT .
- 2- Type II D.M. & gestational D.M.
- 3- Dyslipidaemia .
- 4- Endometrial cancer with 5 folds increase .
- 5- Ovarian cancer in 2 – 5 % of PCOS patients .
- 6- Breast cancer .

7- Recurrent miscarriage .

8- Stroke & myocardial infarction .