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Polycystic Ovarian Syndrome (PCOS)

What are the minimal criteria for the diagnosis of PCOS? (National Institute of Health, 1990)

* Presence of menstrual irregularity
* Evidence of hyperandrogenism: Clinical (hirsutism, acne, male pattern balding) or Biochemical (elevated androgen level) in absence of virilization or other causes of hyperandrogenism

Is the presence of polycystic ovaries (PCO) on ultrasound scan essential for PCOS diagnosis ?

* No: PCO is diagnosed on scan if there are >8 peripherally oriented cystic structures (<10 mm) surrounded by an increased stromal mass (>25 percent of the ovarian volume) in each ovary.
* PCO is not an essential finding for the diagnosis of PCOS but present in > 80% of cases.
* PCO can be present in other causes of androgen excess
* PCO is present in 20% of normal women i.e. the presence of polycystic ovaries on ultrasound scan should be considered normal if the minimum criteria to diagnose the PCOS are absent

What is the importance of the diagnosis of PCOS?

It is well recognized that PCOS is associated with:

* Infertility, abnormal bleeding, oligo/amenorrhoea.
* Hirsutism (66%)/ Obesity (44%)
* Pregnancy loss (30%), and other complications of pregnancy

However there are other major health issues associated with the diagnosis of PCOS which are not well recognized and include:

* Endometrial carcinoma (unopposed oestrogen stimulation)
* Impaired glucose tolerance (35%), Diabetes mellitus (10%), hypertension, dyslipidemia, coronary artery disease, myocardial infarction (X7)

What are the hormonal and metabolic investigations for PCOS?

* Androgen: ↑both ovarian testosterone (90%) and adrenal dehydroepiandrosterone sulphate (50%)
* Estradiol: Normal — Estrone: ↑ — LH: ↑ — FSH: Normal — LH/FSH Ratio: ↑ (75%)
* Impaired glucose tolerance (35% in obese) — Type 2 diabetes mellitus (10 % in obese)
* Insulin resistance: Fasting glucose-to-insulin ratio < 4.5
* Fasting lipid profile:↑ triglycerides/LDL — ↓ HDL
* Serum Prolactin level: to rule out hyperprolactinemia in cases of amenorrhoea
* 17-hydroxyprogesterone: to exclude late onset congenial adrenal hyperplasia.

What is the management of PCOS?

* Cases of infertility or hirsutism in PCOS patients should be **referred to secondary care.**
* **Oral contraceptive pills**
  * Treat the menstrual irregularity, protect against endometrial cancer, and is a contraceptive
  * **Cilest, Mercilon or Marvelon** (moderate oestrogen & progestin/ little androgenic activity)
* **Reduction of insulin resistance**
  * Should be a mainstay of any long-term strategy.
  * Diet and exercise are an important first-line approach
  * Insulin-sensitizing agents (Metformin) could be beneficial for **obese** PCOS patients with poor dietary compliance and also for induction of ovulation with Clomid in specific cases. However a consensus has not been reached for its routine use.
  * Monitoring with oral glucose tolerance test is important in obese women prior to pregnancy and after the age of 40. Lipid profiles should be monitored every 3-5 years after the age of 35.

References: *J Clin Endocrinol Metab.* 2000;85:139-146 — Lancet 1988; 1:870 — Current Issues in Endocrinology and Metabolism, Blackwell Scientific Publications, Boston, 1992