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Patient Information
Polycystic Ovarian Syndrome

Introduction

Polycystic Ovarian Syndrome (PCOS) is one of the commonest endocrine disorders affecting 6 – 7% women of reproductive age. What we recognize as PCOS is probably the end point of a number of conditions, there are multiple environmental and genetic factors that can make it more likely or make it appear. The precise definition is not universally agreed, there are different consensus statements on what is needed to diagnose PCOS, but what is agreed is the central role of the ovary in the condition.

How might it appear?

There are lots of features that are consistent with the diagnosis but central to PCOS is ovarian dysfunction. Women may present with:

- Menstrual disturbance
  - Fewer periods (oligomenorrhoea)
    - Having between four to nine periods per year, often with more than 35 days between periods; they may be unusually light.
  - No periods (amenorrhoea)
    - More than six months between periods.
- Problems conceiving
  - Ovulation may not occur regularly, this is more common the fewer the periods, many women however have no problems conceiving.
- Excessive male hormones (hyperandrogenism)
  - Hair growth (hirsutism) and/or hair loss (alopecia)
  - Acne
- Metabolism
  - Obesity
  - Insulin resistance
    - Impaired fasting glucose, impaired glucose tolerance or type 2 diabetes
    - Dyslipidaemia
  - Hypertension

Diagnostic criteria

In Europe we generally require the presence of two of the following three criteria to diagnose PCOS:

1. Menstrual cycle disturbance (oligomenorrhoea and/or anovulation)
2. Hyperandrogenism (clinical and/or biochemical)
3. Polycystic ovaries as seen on ultrasound scan

Diagnostic assessment

The endocrinologist's job is to not only diagnose PCOS to exclude things that might cause:

- Menstrual disturbance (e.g. premature ovarian insufficiency, hypothalamic/pituitary disease) or:

- Androgen excess (e.g. late onset congenital adrenal hyperplasia, Cushing's syndrome, androgen secreting hormones (ovarian or adrenal))

This involves a very detailed clinical assessment, looking for relevant symptoms and signs, considering the correct investigations. One might also see a gynaecologist or general practitioner who will make the diagnosis of probable or confirmed PCOS.

Investigations

The investigations are guided to consider hyperandrogenism, other common conditions that can look like or be associated with PCOS, or other/related metabolic dysfunction. If an ovarian ultrasound is necessary it can determine whether they are 'polycystic'; an ultrasound is also very helpful to measure the endometrial thickness.

Treatment

As the clinical manifestations of PCOS can vary from patient to patient, so the treatment generally varies from patient to patient. It might vary for the same patient dependent on where they are with their life, plans for fertility, weight, or specific problem at that time. A great disservice is done to patients by assuming everyone is the same and recommending the same treatment and that is why it is better to see a specialist who is familiar with not only PCOS, but the differential diagnosis and the treatments that are specific to the patient's problem.

If obesity is part of the clinical picture lifestyle change leading to weight loss is important; it can even be helpful in patients who are not obese. Staying as healthy as possible is important. Weight loss can improve insulin resistance right across the body, particularly at the ovary reducing the production of androgens, improving fertility, periods, acne and hirsutism as well as reducing the risk of diabetes or its severity if present. Just 5 – 10% weight loss may lead to a resumption of fertility

- Menstrual disturbance
    - Intermittent progesterone – if the patient is having less than one period every three months there is a risk of endometrial hyperplasia, and a concern that this can increase the risk of endometrial carcinoma. Progesterone, taken for a week to ten days can induce a period and reduce this risk. It is not a contraceptive.
    - Combined contraceptive pill – switches off the pituitary drive to the ovaries, provides regular periods that might be less heavy and painful, and by flooding the body with oestrogen ameliorate androgen excess improving acne and hirsutism, with time it can decrease ovarian volume and reduce the ovarian production of male hormones.
        - The pill tends to cause modest but predictable weight gain over the years in some patients, and if obesity was a starting concern the pill may not help; it can also contribute to hypertension.
    - Intrauterine device – a good option for heavy, irregular periods in women who need contraception, and in those who would prefer not to have a hormonal treatment.

- Fertility problems caused by failure to ovulate (anovulatory infertility)
    - If the patient is obese weight loss is important, 5 – 10% may restore fertility.
    - Clomiphene citrate taken for five days is often the first choice to induce ovulation. If clomiphene does not work injections of gonadotropins are often necessary under the wing of a fertility clinic.
    - Reverse circadian prednisolone (the larger dose is taken at night, which is a reversal of normal steroid production) – it may need to be combined with clomiphene and/or HCG, these under the wing of a fertility clinic. As the total dose of steroids is similar to the normal production per day, this treatment is not associated with steroid side effects.
    - Laparoscopic ovarian surgery may be considered for some patients.

- Androgenic effects
    - The combined contraceptive pill containing the lowest dose of oestrogen and an anti-androgenic progesterone can help. The risk of venous thrombosis needs be weighed up in the individual pros and cons.
    - Spironolactone – has useful anti-androgenic effects but should be taken with secure contraception.
    - Specific anti-androgens e.g. cyproterone acetate or finasteride – usually prescribed in hospital only after other treatments have failed and always with secure contraception.
    - Eflornithine 11.5% cream – topical therapy for facial hirsutism.
    - Minoxidil 2% – for androgenic hair loss.
    - Cosmetic measures – this includes depilatory creams, bleaching, plucking, shaving, laser treatment and electrolysis.
    - Topical benzoyl peroxide and/or topical antibiotics help acne; if it is more severe systemic antibiotics with topical benzoyl peroxide can be tried. Systemic isotretinoin may be used under specialist advice for severe acne.

- Other problems
    - Anxiety and depression are more common in PCOS and it is important these are both enquired about by your doctor and that the patient mentions them.
    - Diabetes mellitus, dyslipidaemia and obesity may all require specific therapy.
    - Osteoporosis – as women maintain ovarian oestrogen production no specific therapy for osteoporosis is required.

Monitoring

Some patients will require monitoring of their endometrial thickness, particularly if they do not wish to induce a menstrual bleed using hormonal treatments. Lifestyle change should be maintained, and periodic assessment for diabetes and dyslipidaemia considered.