Polycycstic Ovarian Syndrome

What is Polycystic Ovarian Syndrome?

Polycystic ovary syndrome (or PCOS) is a common condition affecting 3 to 5% of women of reproductive age. It is linked with hormonal imbalances, which can bring about a range of symptoms. 'Polycystic' simply means 'many cysts' but these are not cysts that need to be removed.

The basic cause of polycystic ovary syndrome is thought to involve an inability of the ovaries to produce hormones in the correct proportions, although the exact underlying cause of the condition is unknown. The pituitary gland in the brain senses that the ovary is not working properly and in turn releases abnormal amounts of luteinizing hormone (LH) and follicle stimulating hormone (FSH), which are both linked to the ovary's ability to develop and release an egg. It is when this ability to ovulate becomes disturbed that menstrual and fertility problems can occur.

What symptoms does PCOS cause?

- Irregular and often infrequent menstrual periods.
- Acne, excessively oily skin and/or hairiness (hirsutism) due to excess male type hormones.
- Infertility due mainly to failure of ovulation.
- Weight gain.
- Other symptoms may include tiredness, depression, hair loss, miscarriage, pelvic pain, mood swings, breast pain aching joints and dizziness.

How is PCOS diagnosed?

Polycystic ovary syndrome is diagnosed by history and the presence of some or all of the above symptoms. Other tests to confirm the diagnosis include:

- **Ultrasound Scan**
  This is usually done as an internal scan, meaning a small probe is placed inside the vagina, giving the best views of the ovaries and pelvic organs. In polycystic ovary syndrome, the ovaries are found to have multiple, small follicles along the edge of the ovary. The small follicles are only a few millimetres in size and do not in themselves cause problems.

- **Blood Tests**
  A couple of blood tests will help in making the diagnosis. The levels of testosterone, luteinising and follicle-stimulating hormones, and a few other hormones will be tested.

What are the available treatments for the symptoms and problems associated with PCOS?

- **Control of irregular periods**

Irregular and heavy periods can be due to problems with ovulation. Excess weight is a cause of menstrual problems in both women with and those without polycystic ovary syndrome. Extra oestrogen is stored in fatty tissues, and this interferes with ovulation and leads to over stimulation of the lining of the uterus and heavier periods. Weight reduction will therefore

improve the cycle and reduce the heaviness of the period.

There are some medications that help to stimulate ovulation, which will in turn bring on regular and lighter periods.

In women who do not want to become pregnant, periods can be regulated with the use of the contraceptive pill. The other type of medication used is a progesterone-like hormone, which is usually given in a cyclical manner.

Some women do not have any periods at all but medication described above can help with this.

- **Treatment of hirsutism**
  Excessive hairiness is usually due to higher than average levels of male hormones in the blood stream. Some women do not find this excess hair a problem, while others do.

  The contraceptive pill is often prescribed which helps reduce the male hormone level, and so improves the hairiness.

  Medication can be combined with cosmetic measures such as bleaching and electrolysis to lighten dark hair or remove the unwanted hair already present.

  All treatments should be taken for eight to18 months before an improvement can be expected.

- **Treatment of fertility related problems**
  Ovulation problems in women with PCOS are more common in those who are overweight, and weight reduction can be very successful in restarting spontaneous ovulation. The amount of weight loss depends on the starting weight of the woman, but even as little as 5% loss of current weight is associated with an increased number of ovulatory cycles.

  The most common drug used to stimulate ovulation is clomifene citrate (also known as Clomid). It is taken orally in the early days of the cycle (usually 2nd to 6th day of the cycle) and results in ovulation in around 80% of women and a six-month successful pregnancy rate of 20 to 40%. The risk of multiple pregnancy should be taken into account when considering the use of clomifene.

  There are other drugs, called gonadotrophins, which help to stimulate the ovaries to ovulate. These are usually given as injections, and require ultrasound monitoring due to the increased chance of high multiple pregnancy.

  A surgical alternative to ovarian stimulation is an operation called laparoscopic ovarian diathermy, also known as ‘ovarian drilling’. This involves an operation under general anaesthetic and a telescope look into the abdomen. The ovaries are identified and several small holes made in each ovary, either with a fine hot electric probe or via laser. The average ovulation rate is 60 to 80% with 30 to 40% of these women becoming pregnant.

  This operation is only appropriate for women who are <u>not</u> excessively over-weight, since the operation carries higher chance of complications and higher chance of failure in very over-weight women.

Recently, a drug used in patients with diabetes, called metformin, has been shown to help ovulation in some women with PCOS. The evidence for the use of metformin in PCOS women is not strong. It is more useful in women who are over-weight, but it is certainly not as successful as weight reduction in these women. Metformin may be combined with clomifene to give an enhanced effect on ovulation.

Does Polycystic Ovarian Syndrome have any long-term health implications?

Women with PCOS have been shown to have increased chance of developing a number of medical conditions later in life. These are briefly discussed below:

- **Non-insulin dependent diabetes**
  This is a condition in which the blood sugar levels in the body are poorly controlled, leading to a number of complications. Women with PCOS, particularly those who are over-weight, are at increased risk of developing this condition. The risk is further increased if there is also a strong family history of diabetes. These women should therefore have their blood sugar level checked regularly, perhaps every one to two years. Those with high levels should be offered a glucose tolerance test, which will enable the diagnosis of diabetes to be made.

- **Gestational diabetes in pregnancy**
  Women known to have PCOS before pregnancy have been shown to have an increased risk of developing diabetes during their pregnancy (the so-called gestational diabetes). The risk is thought to be greatest in overweight women who required ovulation induction in order to conceive. It may lead to problems with the mother as well as those with the baby. This type of diabetes usually (but not always) resolves after the pregnancy

- **Cardiovascular disease**
  There is evidence that PCOS is associated with development of heart and blood vessel diseases in later life. The risk of developing high blood pressure and heart attacks is therefore greater than the general population.

  The measurements of fasting blood cholesterol, lipids and triglycerides (all different types of fat molecules) should be offered to women with polycystic ovary syndrome, as early detection of abnormal levels might encourage improvement in diet and exercise.

- **Abnormal cells and cancer of the inside lining of the womb**
  Women with polycystic ovary syndrome often have infrequent periods or no periods at all. This may lead to a condition known as endometrial hyperplasia due to the over-stimulation of the inside lining of the womb (or endometrium) by oestrogen, without the neutralising effect of progesterone. The cells of the lining of the womb may develop abnormally over a number of years. Unchecked or untreated, the abnormality may eventually lead to cancer of the endometrium after many years. Giving treatment with cyclical progestogens to induce a withdrawal bleed at least every three or four months may reduce the chance of developing this condition.

How can the risks of PCOS be reduced?

Exercise and weight control plays an important part in reducing the risks. Simple methods for the reduction of body fat and improvement in physical fitness will result in the resumption of ovulation and increase in fertility in a high proportion of women with PCOS. Improvement in diet and exercise in overweight young women often helps normalise the metabolism of blood glucose, which will reduce the likelihood of developing non-insulin dependant diabetes later in life. This is also applicable for heart disease and cancer of the lining of the womb.

The effects of diet and exercise on the long-term health of women with PCOS, but who are of normal body weight are not known. It is advisable, however, for these women to maintain their weight within normal limits, so as to prevent the worsening of their symptoms, and improve their condition.

Conclusion

The symptoms and signs associated with polycystic ovary syndrome are all commonly associated with times of hormonal disturbance such as puberty, pregnancy and the menopause. Taking the contraceptive pill can help to sort out the menstrual cycle of the women and mask the symptoms. Research has shown that women with this syndrome are at increased risk of recurrent miscarriage and developing diabetes and heart disease. The hormonal symptoms are actually triggered off by an underlying cause which has long-term consequences.

The cysts and other symptoms of polycystic ovary syndrome develop as a result of a genetic tendency towards this syndrome, handed down through the family, as well as environmental factors such as diet, lifestyle and stress levels.

Although there is no cure for this condition, various treatments and medications can help reduce the symptoms.

It is important that you have read and fully understood the information provided in this leaflet. Please do not hesitate to voice your concerns or queries regarding any aspect of the condition

Important information

The information in this leaflet is for guidance purposes only and is not provided to replace professional clinical advice from a qualified practitioner.

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Reference

The following clinicians have been consulted and agreed this patient information:
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The directorate group that have agreed this patient information leaflet:
Guideline Implementation Group

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