

A GUIDE TO PROLACTINOMA



INCIDENCE

Approximately 500-1,200 people are diagnosed with a prolactinoma each year in Australia. This represents around 2-5 new cases per 100,000 population per year¹.

ABOUT PROLACTINOMA

A prolactinoma is a benign (non-cancerous) tumour of the pituitary gland that produces the hormone prolactin. It is the most common type of hormone-producing pituitary tumour.

Prolactin is a hormone that is normally produced by the pituitary gland. It is best known for its role in stimulating milk production after childbirth but is produced in both men and women.

The majority are small (less than 1cm). These are referred to as a **microprolactinoma**. A prolactinoma that is greater than 1cm in size is called a **macroprolactinoma**.

Microprolactinomas are more common in women while macroprolactinomas are more common in men. In women, prolactinomas tend to be diagnosed early, because symptoms are more obvious (e.g. absent periods and/or inappropriate production of breast milk). In men, the symptoms can be more subtle and develop slowly (e.g. reduced erectile function and loss of libido), resulting in a later diagnosis.

Prolactinomas grow very slowly, if at all. It is very uncommon for a microprolactinoma to grow into a macroprolactinoma. The cause of prolactinomas is currently unknown.

PREVALENCE

Between 6,400 and 16,000 Australians currently live with a prolactinoma. This means that there are around 25-63 cases per 100,000 population¹ (approximately 6,400-16,000 Australians currently living with a prolactinoma).

PRESENTING SIGNS & SYMPTOMS

The symptoms of prolactinoma differ for men and women.

Men

- Reduced libido
- Erectile dysfunction
- Infertility - due to low sperm count

Women

- Irregular or absent menstrual cycle
- Discharge from breasts (galactorrhoea)
- Infertility
- Reduced libido
- Vaginal dryness or pain during sex

Both men and women

Additional symptoms can occur with large prolactinomas (macroprolactinoma) that press or invade surrounding brain tissue. This can cause:

- Some loss of peripheral vision or vision becomes less clear
- Headaches
- Fatigue

This can also result in a condition called hypopituitarism, where there is reduced production of pituitary hormones. This can lead to a range of symptoms depending on which hormones are affected. More information about hypopituitarism is available from the Australian Pituitary Foundation.

INVESTIGATIONS

A number of investigations may be used to diagnose a prolactinoma and work out the most appropriate treatment plan. These tests can include:

- Blood test - to measure levels of prolactin and pituitary function (including sex hormones, thyroid function tests, steroid and growth hormones)
- Magnetic resonance imaging (MRI) or computed tomography (CT) scan – to see the pituitary gland

Other tests may be needed, including:

- Vision testing – to assess the visual field
- Bone mineral density (BMD) test – to check bone health

While high levels of prolactin can be caused by a prolactinoma, there are other possible reasons for a high prolactin level. These include:

- Pregnancy or breastfeeding
- Stress
- Side effects of other medication (e.g. dopamine antagonists, antipsychotics, some antidepressants, opiates)
- Polycystic ovarian syndrome (PCOS)
- Hypothyroidism (low thyroid function)
- Pituitary stalk dysfunction
- Kidney failure

TREATMENT

The goal of treatment is to reverse the symptoms of prolactinoma, through reducing prolactin levels. For women, this also includes restoring estrogen levels so that the menstrual cycle, fertility, libido and vaginal lubrication return to normal. For large prolactinomas (macroprolactinomas), an additional goal of treatment is to shrink the tumour to reduce any symptoms caused by pressure effects. Treatment options include:

1. **No treatment** - if there are no symptoms and prolactin levels are only mildly elevated.
2. **Medication** - to reduce prolactin levels, normalise estrogen or testosterone levels and shrink the size of the tumour

In most cases these treatment options successfully reverse symptoms. However, in some cases, the prolactinoma does not respond to medication, or the medication causes side effects. In these rare cases, other treatment options will be considered including:

3. **Surgery** - to reduce tumour size. Transsphenoidal surgery is performed in most cases. This surgery is conducted through the sinuses at the back of the nose.
4. **Radiotherapy** - to reduce the chance of recurrence

Medication is the first line of treatment for most people with prolactinoma. The most common medications are dopamine agonists (cabergoline or bromocriptine), which reduce prolactin production by the tumour. Medication is effective in the majority of patients, as it often results in reduced prolactin levels, a decrease in tumour size and sex hormone levels returning to normal. Cabergoline and bromocriptine are taken as tablets, starting on a low dose and increasing gradually over time to reach normal prolactin levels. Bromocriptine is taken daily, while cabergoline is taken twice per week.

PATIENT MANAGEMENT

Medical treatment with cabergoline or bromocriptine controls prolactin in the majority of patients, with symptoms normally disappearing when prolactin is in a normal range. Medication needs to be continued in the long term. For some patients, particularly those with microprolactinomas, a trial of ceasing medication can be considered after 3-5 years. Factors for consideration of a trial period off treatment include prolactin levels, tumour size and location, and in women, being post-menopausal or post pregnancy².

Medications can cause side-effects in some people, including dizziness, nausea and headache. This can be limited by taking the medicine before bed at night and by starting at a low dose and increasing gradually as required.

Cabergoline can be effective in patients who do not respond to bromocriptine³. Patients taking cabergoline should have an annual cardiovascular examination to check for heart valve disease. Patients should have an echocardiogram (an ultrasound of the heart) if they have an audible heart murmur, or have been using cabergoline for 5 years or more, or are over 50 years of age. The chance of heart problems caused by cabergoline is very low (around 0.1%)⁴.

Regular check-ups are necessary to monitor symptoms.

PREGNANCY AND PROLACTINOMAS

Women planning a pregnancy or who fall pregnant while on medications are advised to meet with their endocrinologist to make a treatment plan for pregnancy.

Bromocriptine is the medication that has been studied the most in pregnancy. Thousands of babies have been born to mothers taking bromocriptine and there is no evidence of any increased risks to the pregnancy or baby⁵.

Women with microprolactinomas can generally stop taking dopamine agonists when pregnancy has been confirmed and while breastfeeding. During pregnancy, there is a slight risk of tumour enlargement, particularly in patients with macroprolactinomas. Pregnant women with macroprolactinomas will usually need to continue their medication and need regular visual field assessments throughout pregnancy. MRI scans can be safely undertaken in the second and third trimesters of pregnancy if required.

Pregnant women with macroprolactinomas should be managed by their endocrinologist. These women may be advised not to breastfeed if the prolactinoma has expanded and is causing vision problems.

COMMON QUESTIONS

Why have my periods stopped?

High prolactin levels can prevent the production of hormones that regulate the menstrual cycle. This can lead to irregular or loss of periods.

Why am I no longer interested sexually in my partner?

High prolactin levels prevent the production of sex hormones, which can lead to low libido (sex drive).

Why is sex painful?

High prolactin levels cause estrogen levels to fall. Low estrogen can lead to thinning of the inner lining of the vagina. This will be helped by treatment, which restores estrogen levels to normal.

Why do I have a discharge from my breasts?

Prolactin is the hormone that increases to help women produce milk to breastfeed. High prolactin levels can cause this same effect.

Can a microprolactinoma grow into a macroprolactinoma?

In the vast majority of cases, no. This very rarely happens.

How long will I need to take my medication?

While prolactin levels can return to normal within a few weeks of starting medication, it is important to keep taking medication until instructed by your doctor. For some people, stopping medication may be trialled after 3-5 years, or after surgery, to see if prolactin levels remain in a normal range. Stopping medication may cause your prolactin levels to rise and the tumour to increase in size again. It is important to see your endocrinologist for regular check-ups to monitor prolactin levels and tumour size.

MORE INFORMATION

The Australian Pituitary Foundation provides social support for patients and carers, and has published a range of patient resources on pituitary conditions and treatments. For more information, or to join or donate to the APF, please visit our website: www.pituitary.asn.au

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