

The OHSU Pituitary Unit

Prolactinoma

About half of pituitary adenomas over-produce prolactin. These often present with inappropriate breast milk production and menstrual cycle irregularities in women and headaches and sexual dysfunction in men. They are typically smaller in women (which may be because they are discovered earlier due to disruption of normal menstrual cycling). In men, they are often discovered due to their mass effects (headache or visual problems) or due to other hormonal deficiencies caused by the tumor. Patients with prolactin producing macroadenomas of the pituitary should be evaluated for pituitary hormone deficiencies as discussed in the section: [How Do I Work With My Doctor To Find Out if I have a Pituitary Disorder?](#) Pituitary hormone replacement therapy is discussed in the section: [Pituitary Hormone Deficiency and Replacement.](#)

Prolactinoma Treatment Options

Fortunately, in most cases a prolactinoma can be treated with a class of medications called dopamine agonists. These medications will usually lower the prolactin level to normal and dramatically shrink the tumor. In some cases, the prolactinoma will not respond to medication or the patient is intolerant to the medication's side effects; in these cases surgery may be indicated if mass effects of the tumor are a concern. More details on the process of selecting a qualified neurosurgeon are available in the section: [I Have Been Diagnosed with a Pituitary Tumor - What Should I Do Next?](#) If the prolactinoma is small (a microadenoma) and a patient can tolerate the symptoms (breast discharge, etc) and issues of bone loss due to low estrogen are addressed, medication may be optional.

Side Effects of Dopamine Agonists

Note: The most common side effect of dopamine agonists is stomach discomfort.

Potential solutions:

- Cabergoline (Dostinex) is often tolerated better than bromocriptine (Parlodel).
- Starting therapy with low dose and slowly working to desired dose (over weeks) decreases intolerance.
- Taking the medication with food helps minimize intolerance.

As mentioned above, most prolactinomas are sensitive to dopamine agonist treatment. This means that prolactin elevation should normalize, symptoms should resolve, and tumor should shrink with this therapy. Of note, however, prolactin elevation from any source (prolactinoma, "stalk compression" (discussed below), medications, etc) will decrease with dopamine agonist treatment. Therefore, even in the context of decreasing prolactin levels, follow-up imaging studies should be

performed to confirm tumor shrinkage has occurred. If a tumor continues to grow in the context of adequate medical therapy (regardless of whether the prolactin level has normalized), surgical removal of the pituitary adenoma may be indicated.

Critical Note about large tumors:

In large, non-functioning adenomas, the prolactin level is often slightly elevated due to "stalk compression". This is because large adenomas can press on the pituitary stalk interrupting the flow of dopamine in fibers from the hypothalamus that normally inhibits prolactin release from the pituitary. The result is that the prolactin level rises slightly. A very common clinical error is to treat this non-functioning tumor with dopamine agonists. This treatment will decrease the prolactin level but will not stop tumor growth! This can be a disastrous situation resulting in visual damage and pituitary destruction. The "clinical pearl" is to know that large prolactinomas (more than 1 cm) typically cause serum prolactin levels to range from many hundreds to thousands of ng/ml. By contrast, non-functioning adenomas causing stalk compression result in prolactin levels of 100 ng/ml or less. A patient being treated for a macroprolactinoma (more than 1 cm) should either confirm that their prolactin level was very high prior to medical treatment or that there is documentation that the tumor has shrunk (e.g., repeat brain MRI) in response to medical treatment.

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This section was written by William H. Ludlam, M.D., Ph.D. for: www.OHSUpituitary.com.

Email: pituitary@ohsu.edu