Understanding Hyperprolactinemia

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Overview

• Diagnosis
• Assessing the Pituitary
• Treatment
• Long-Term Management
Hyperprolactinemia: Elevated Blood Prolactin Levels

- Normal prolactin levels
  - Less than 25 ng/ml for women
  - Less than 20 ng/ml for men
- Many causes for prolactin elevation
  - Pregnancy – 10 fold increase
  - Exercise, stress – mild
  - Hypothyroidism – mild to moderate
  - Kidney Failure – mild to moderate
  - Medications – moderate
  - Pituitary tumors – moderate to high
What Are the Effects of Hyperprolactinemia?
What Is a Prolactinoma?

- The most common hormonally active pituitary tumors
  - 40% of all pituitary tumors
  - Most are microadenomas (less than 1 centimeter diameter)
- Actively secrete prolactin
  - Hormone responsible for breast milk production
  - Produced in women and men
  - Causes problems with sex steroid production (estrogen, testosterone)
What Are the Symptoms of a Prolactinoma?

- **Pre-menopausal Women**
  - No menstrual periods
  - Irregular menstrual periods
  - Breast milk discharge (galactorrhea)

- **Post-menopausal Women**
  - No symptoms
  - Headache
  - Vision problems

- **Men**
  - Poor libido
  - Impotence
  - Decreased energy
  - Headaches
  - Vision problems
How Are Prolactinomas Diagnosed?

- Measurement of serum prolactin
  - Can be measured any time of day
  - Non-fasting
- Review potential causes of high prolactin
  - Test for common things that may cause high prolactin levels
- MRI of the pituitary
- Visual Field testing (if indicated)
What Is the Treatment for Prolactinomas?

- Medical therapy is the primary treatment
  - Large tumors
  - Enlarging small tumors
  - Infertility
  - Galactorrhea
  - Testosterone deficiency
  - Irregular periods or amenorrhea
What Medications are Available?

- Dopamine agonist
  - Bromocriptine 2.5 mg – 10 mg daily
  - Cabergoline 0.25 mg – 3.0 mg weekly
  - Both are effective
    - Lowering prolactin levels to normal
    - Shrinking prolactinomas
    - Restoring reproductive function
    - Stopping breast milk discharge
What Are the Side Effects of a Dopamine Agonists?

- Common side effects
  - Low blood pressure
  - Nausea, vomiting, constipation, diarrhea
  - Sinus congestion
  - Fatigue
Is It Safe to Take a Dopamine Agonist For Many Years?

• Both are generally not associated with severe complications

• Some patients with Parkinson’s disease taking very high doses of cabergoline (3 mg/day) have developed fibrosis, or hardening of the heart valves

• Most studies do not show a relationship when used for patients with prolactinoma at much lower doses (1-2 mg/week)

• Abnormalities, when shown are mild to moderate, and not clinically significant
How Long Will the Medical Therapy Last?

- Stopping the dopamine agonist leads to tumor regrowth or recurrence of hyperprolactinemia
- For some small prolactinoma, may consider decreasing dose or stopping medication after at least 2 years of treatment
- Patients with large prolactinomas (>1 cm) will likely need medical therapy indefinitely
- Need close follow-up while off medical therapy
  - Prolactin levels
  - Symptoms
  - Pituitary MRI
Is Treatment with Dopamine Agonists Always Necessary?

- Small prolactinomas rarely increase in size
- If low estrogen or testosterone levels, and pregnancy is not an issue
  - Hormone replacement
  - Treat osteoporosis with other medication
- Close follow-up
  - Prolactin levels
  - Symptoms
  - Pituitary MRI
What Is the Role for Surgery?

- Surgery reserved for
  - Growing tumor despite therapy
  - Hemorrhage
  - Inability to take medication
  - Resistance to therapy (elevated prolactin)
  - Visual compromise despite medical therapy
  - Danger of visual problems during pregnancy
What Is the Role for Radiation?

• Rarely indicated
  • Poor candidates for surgery
  • Aggressively growing tumors despite other therapies
Thank You

Questions?