Bromocriptine

*Bromocriptine*, an ergoline derivative, is a dopamine agonist that is used in the treatment of pituitary tumors, Parkinson's disease (PD), neuroleptic malignant syndrome, and type 2 diabetes.

**Indications**

Amenorrhea, female infertility, galactorrhea, hypogonadism, and acromegaly may all be caused by pituitary problems, such as hyperprolactinaemia, and therefore, these problems may be treated by this drug. In 2009, bromocriptine mesylate was approved by the FDA for treatment of type 2 diabetes under the trade name Cycloset. It is currently unknown how this drug improves glycemic control, but it has been shown to reduce HbA1c by ~0.5%.

**Side effects**

Bromocriptine use has been associated with causing or worsening psychotic symptoms (its mechanism is in opposition of most antipsychotics, whose mechanisms generally block dopamine). It can also cause nausea and vomiting through stimulation of the brainstem vomiting centre, vasospasm due to its ergot derivation and fibrosis of multiple organs similar to methysergide, which stimulates fibroblasts.

Bromocriptine belongs to the group of medicines known as ergot alkaloids. Bromocriptine blocks release of a hormone called prolactin from the pituitary gland. Prolactin affects the menstrual cycle and milk production. Bromocriptine is used to treat certain menstrual problems or to stop milk production in some women or men who have abnormal milk leakage. It is also used to treat infertility in both men and women that occurs because the body made too much prolactin.
Bromocriptine is also used to treat some people who have Parkinson's disease. It works by stimulating certain parts of the brain and nervous system that are involved in this disease.

Bromocriptine is also used to treat acromegaly (overproduction of growth hormone) and pituitary prolactinomas (tumors of the pituitary gland).

Bromocriptine is also used together with proper diet and exercise to treat high blood sugar levels in patients with type 2 diabetes.

Once a medicine has been approved for marketing for a certain use, experience may show that it is also useful for other medical problems. Although these uses are not included in product labeling, bromocriptine is used in certain patients with the following medical conditions:

- To stop milk production after an abortion or miscarriage or in women after a delivery who should not breast-feed for medical reasons.
- Neuroleptic malignant syndrome.

**Allergies**

If the patient is prone to allergies of any kind then it is best to avoid or use with extreme care.

**Pediatric**

Appropriate studies have not been performed on the relationship of age to the effects of bromocriptine in the pediatric population. Safety and efficacy have not been established.

This medicine has been tested in a limited number of teenagers 15 years of age and older. In effective doses, the medicine has not been shown to cause different side effects or problems than it does in adults. Appropriate studies have not been done in teenagers younger
than 15 years of age, and there is no specific information comparing use of bromocriptine in these teenagers with use in other age groups.

**Geriatric**

Appropriate studies performed to date have not demonstrated geriatric-specific problems that would limit the usefulness of bromocriptine in the elderly.

Confusion, hallucinations, or uncontrolled body movements may be more likely to occur in elderly patients, who are usually more sensitive than younger adults to the effects of bromocriptine.

**Pregnancy**

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<tr>
<th>Pregnancy Category</th>
<th>Explanation</th>
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<tr>
<td>All Trimesters B</td>
<td>Animal studies have revealed no evidence of harm to the fetus, however, there are no adequate studies in pregnant women OR animal studies have shown an adverse effect, but adequate studies in pregnant women have failed to demonstrate a risk to the fetus.</td>
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**Breastfeeding**

Studies suggest that this medication may alter milk production or composition. If an alternative to this medication is not prescribed, you should monitor the infant for side effects and adequate milk intake.

**Drug Interactions**

Using this medicine with any of the following medicines is usually not recommended, but may be required in some cases. If both medicines are prescribed together, your doctor may change the dose or how often you use one or both of the medicines.
• Isomethyptene
• Phenylpropanolamine

Using this medicine with any of the following medicines may cause an increased risk of certain side effects, but using both drugs may be the best treatment for you. If both medicines are prescribed together, your doctor may change the dose or how often you use one or both of the medicines.

• Bromperidol
• Clarithromycin
• Cyclosporine
• Kava
• Thioridazine

Other Medical Problems

The presence of other medical problems may affect the use of this medicine. Make sure you tell your doctor if you have any other medical problems, especially:

• Diabetic ketoacidosis (ketones in the blood)
• Syncopal (fainting) migraine headaches
• Type I diabetes

—Should not be used in patients with the above conditions.

• Fever
• Infection
• Surgery – In case insulin is to be given
• Trauma
• High blood pressure,
• Pregnancy-induced high blood pressure, —rarely, bromocriptine can make the high blood pressure worse.
• Hypotension (low blood pressure)
• Mental problems (e.g., psychotic disorder)—May make these conditions worse.
• Liver disease—Toxic effects of bromocriptine may occur in patients with liver disease because the body is not able to remove bromocriptine from the bloodstream as it normally would.

Proper Use

Follow carefully the special meal plan your doctor gave you. This is the most important part of controlling your condition, and is necessary if the medicine is to work properly. Also, exercise regularly and test for sugar in your blood or urine as directed.

If bromocriptine upsets your stomach, it may be taken with meals or milk. Also, taking the dose at bedtime may help to lessen nausea if it occurs. If stomach upset continues, check with your doctor.

Dosing

The amount of medicine that you take depends on the strength of the medicine. Also, the number of doses you take each day, the time allowed between doses, and the length of time you take the medicine depend on the medical problem for which you are using the medicine.

• For oral dosage forms (capsules and tablets):
  o For infertility, male hormone problem (male hypogonadism), starting the menstrual cycle (amenorrhea), or stopping abnormal milk secretion from nipples (galactorrhea):
    • Adults and teenagers 15 years of age or older—at first, 1.25 to 2.5 milligrams (mg) once a day taken at bedtime with a snack. Then your doctor may increase your dose by 2.5 mg every three to seven days as needed. Doses greater than 5 mg a day are
taken in divided doses with meals or at bedtime with a snack.

- Teenagers less than 15 years of age and children—Use and dose must be determined by your doctor.
  - For lowering growth hormone (acromegaly):
    - Adults and teenagers 15 years of age or older—at first, 1.25 to 2.5 milligrams (mg) once a day taken at bedtime with a snack for three days. Then your doctor may change your dose by 1.25 or 2.5 mg every three to seven days as needed. Doses greater than 5 mg are divided into smaller doses and taken with meals or at bedtime with a snack.
    - Teenagers younger than 15 years of age and children—Use and dose must be determined by your doctor.
  - For Parkinson’s disease:
    - Adults and teenagers 15 years of age or older—at first, 1.25 milligrams (mg) one or two times a day taken with meals or at bedtime with a snack. Then your doctor may change your dose over several weeks as needed.
    - Teenagers younger than 15 years of age and children—Use and dose must be determined by your doctor.
  - For pituitary tumors:
    - Adults and teenagers 15 years of age or older—at first, 1.25 milligrams (mg) two or three times a day taken with meals. Then your doctor may change your dose over several weeks as needed.
    - Teenagers younger than 15 years of age and children—Use and dose must be determined by your doctor.
  - For type 2 diabetes:
    - Adults—at first, 0.8 milligram (mg) once a day, taken within two hours after waking up in the morning. Your doctor may increase your dose as
needed. However, the dose is usually not more than 4.8 mg per day.
- Children—Use and dose must be determined by your doctor.

It is recommended that Bromocriptine is to be taken along with a meal or snacks to avoid nausea.

Precautions

It is important that your doctor check your progress at regular visits to make sure that this medicine is working properly. Blood tests may be needed to check for unwanted effects.

This medicine may cause some people to become drowsy, dizzy, or less alert than they are normally. Make sure you know how you react to this medicine before you drive, use machines, or do anything else that could be dangerous if you are dizzy or are not alert.

Dizziness, lightheadedness, or fainting may occur, especially when you get up from a lying or sitting position suddenly. These symptoms are more likely to occur when you begin taking this medicine, or when the dose is increased.

Too much bromocriptine can cause low blood sugar (hypoglycemia) when it is used under certain conditions. Symptoms of low blood sugar must be treated before they lead to unconsciousness (passing out). Different people may feel different symptoms of low blood sugar. It is important that you learn which symptoms of low blood sugar you usually have so that you can treat it quickly and call someone on your health care team right away when you need advice.

Symptoms of hypoglycemia (low blood sugar) include anxiety; behavior change similar to being drunk; blurred vision; cold sweats; confusion; cool, pale skin; difficulty in thinking; drowsiness; excessive hunger; fast heartbeat; headache (continuing); nausea; nervousness;
nightmares; restless sleep; shakiness; slurred speech; or unusual tiredness or weakness.

If symptoms of low blood sugar occur, eat glucose tablets or gel, corn syrup, honey, or sugar cubes; or drink fruit juice, non-diet soft drink, or sugar dissolved in water. Also, check your blood for low blood sugar. Glucagon is used in emergency situations when severe symptoms such as seizures (convulsions) or unconsciousness occur. Have a glucagon kit available, along with a syringe or needle, and know how to use it. Members of your household also should know how to use it.

High blood sugar may occur if you do not exercise as much as usual, have a fever or infection, do not take enough or skip a dose of your diabetes medicine, or overeat or do not follow your meal plan.

If symptoms of high blood sugar occur, check your sugar level and then call your doctor for instructions.

Dizziness is more likely to occur after the first dose of bromocriptine. Taking the first dose at bedtime or when you are able to lie down may lessen problems. It may also be helpful if you get up slowly from a lying or sitting position. Your doctor may also recommend that you take the first dose vaginally.

Bromocriptine may cause dryness of the mouth. Drink water.

It may take several weeks for bromocriptine to work. Do not stop taking this medicine or reduce the amount you are taking without first checking with your doctor.

Drinking alcohol while you are taking bromocriptine may cause you to have a certain reaction. Avoid alcoholic beverages. Some of the symptoms you may have if you drink any alcohol while you are taking this medicine are blurred vision, chest pain, confusion, fast or pounding heartbeat, flushing or redness of the face, nausea, severe weakness, sweating, throbbing headache, or vomiting.
For females who are able to bear children and who are taking this medicine for menstrual or infertility problems, to stop milk production, or to treat acromegaly or pituitary tumors:

- It is best to use some type of birth control while you are taking bromocriptine. However, do not use oral contraceptives (“the Pill”) since they may prevent this medicine from working. For women using bromocriptine for infertility, tell your doctor when your normal menstrual cycle returns. If you wish to become pregnant, you and your doctor should decide on the best time for you to stop using birth control. Tell your doctor right away if you think you have become pregnant while taking this medicine. You and your doctor should discuss whether or not you should continue to take bromocriptine during pregnancy.
- Check with your doctor right away if you develop blurred vision, a sudden headache, or severe nausea and vomiting.

Do not take other medicines unless they have been discussed with your doctor.

Side Effects

Along with its needed effects, a medicine may cause some unwanted effects. Although not all of these side effects may occur, if they do occur they may need medical attention.

Some serious side effects have occurred during the use of bromocriptine to stop milk flow after pregnancy or abortion. These side effects have included strokes, seizures (convulsions), and heart attacks. Some deaths have also occurred. You should discuss with your doctor the good that this medicine will do as well as the risks of using it.

Check with your doctor immediately if any of the following side effects occur:
Some side effects may occur that usually do not need medical attention. These side effects may go away during treatment as your body adjusts to the medicine. Also, your health care professional may be able to tell you about ways to prevent or reduce some of these side effects. Check with your health care professional if any of the following side effects continue or are bothersome or if you have any questions about them:

Some side effects may be more likely to occur in patients who are taking bromocriptine for Parkinson's disease, acromegaly, or pituitary tumors since they may be taking larger doses.

Other side effects not listed may also occur in some patients. If you notice any other effects, check with your healthcare professional.

It is not necessary to have any or all of these side effects.

Sexual enhancement

Bromocriptine has been found to increase the libido especially for new users; this effect wears out once the system becomes familiar with it. In this respect, bromocriptine is at a clear disadvantage with other drugs.

It is best to combine bromocriptine and Viagra to bring about additional enhancement. The Viagra dosage should be as small as possible, to avoid interference with orgasm strength. 2.5 milligram of bromocriptine plus 25 milligram of Viagra is good dosage.

Bromocriptine being a slow acting drug the effect typically kicks in after some two-and-one-half hours and reaches a peak between the third and fourth hour after ingestion.

Viagra, on the other hand will reach its peak considerably earlier, and it does not need to be combined with food. The best schedule will therefore be to take bromocriptine approximately two-and-one-half
to three hours before sex, and Viagra one-and-one-half hours after the bromocriptine.