Canada-Approved Medicine: This monograph describes a medication approved for use in Canada by the Therapeutic Products Directorate, a division of Health Canada’s Health Products and Food Branch. The medication is not approved by the United States Food and Drug Administration; however, a similar formulation carrying a different generic or brand name might be available in the US.

**buserelin** (bue-se-rel-in)

<table>
<thead>
<tr>
<th>English</th>
<th>German</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>#1</td>
</tr>
</tbody>
</table>

**Classification**

Therapeutic: antineoplastics, hormones
Pharmacologic: luteinizing hormone-releasing hormone (LHRH) analogues

**Indications**


**Action**

Acts as a synthetic analog of endogenous gonadotropin-releasing hormone (GnRH/LHRH). Chronic use results in inhibited secretion of gonadotropin release and gonadal steroid production. The overall effect is due to down-regulation of pituitary LHRH receptors. In males, testosterone synthesis and release is decreased. In females, secretion of estrogen is decreased.

**Therapeutic Effects:**

Decreased spread of advanced prostate cancer. Decreased sequelae of endometriosis (pain, dysmenorrhea).

**Pharmacokinetics**

**Absorption:** Subcut—70%; intranasal—1–3%; implant—drug is slowly absorbed over 2–3 mos.

**Distribution:** Accumulates in liver, kidneys and anterior pituitary lobe; enters breast milk in small amounts.

**Metabolism and Excretion:** Metabolized in liver, kidneys and by enzymes on inactivation in the gastrointestinal tract.

**Half-Life:** Subcut—80 min; intranasal—1–2 hr; implant—20–30 days.

<table>
<thead>
<tr>
<th>Route</th>
<th>Initial</th>
<th>Peak</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>prostate cancer</td>
<td>(unknown)</td>
<td>(unknown)</td>
<td>until discontinuation</td>
</tr>
<tr>
<td>endometriosis</td>
<td>(intranasal)</td>
<td>(unknown)</td>
<td>duration of treatment</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**

Contraindicated in: Hypersensitivity; Non-hormonal-dependent prostate cancer or previous orchiectomy; Females with undiagnosed vaginal bleeding; OB: Pregnancy (avoid use); Lactation: Breast-feeding is contraindicated (small amounts enter breast milk; injectable contains benzyl alcohol).

Use Cautiously in: Prostate cancer with urinary tract obstruction or spinal lesions; Pedi: Safe and effective use in children had not been established (injectable contains benzyl alcohol).

**Adverse Reactions/Side Effects**

CNS: depression, dizziness.
CV: hypertension.
Endo: glucose intolerance.
Hemat: anemia.
Local: injection site reactions.
MS: osteoporosis (long-term use).
Misc: transient exacerbation of metastatic prostate cancer or endometriosis.

**Drug Interactions**

Risk of serious arrhythmias may be increased by concurrent amiodarone, di-sopyramide, dofetilide, flecainide, ibutilide, propafenone, quinidine, so-

**Contraindication**

**Precautions**

**Use Cautiously**

**Adverse Reactions**

**Side Effects**

CNS: depression, dizziness.
CV: hypertension.
Endo: glucose intolerance.
Hemat: anemia.
Local: injection site reactions.
MS: osteoporosis (long-term use).
Misc: transient exacerbation of metastatic prostate cancer or endometriosis.

**Prostate cancer**

CNS: headache (nasal solution).
CV: edema.
Endo: hot flushes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Endometriosis**

CNS: headache, hot flashes.
CV: edema.
Endo: hot flashes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Interactions**

Drug-drug: Risk of serious arrhythmias may be increased by concurrent amiodarone, disopyramide, dofetilide, flecainide, ibutilide, propafenone, quinidine, so-

**Contraindication**

**Precautions**

**Use Cautiously**

**Adverse Reactions**

**Side Effects**

CNS: depression, dizziness.
CV: hypertension.
Endo: glucose intolerance.
Hemat: anemia.
Local: injection site reactions.
MS: osteoporosis (long-term use).
Misc: transient exacerbation of metastatic prostate cancer or endometriosis.

**Prostate cancer**

CNS: headache (nasal solution).
CV: edema.
Endo: hot flushes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Endometriosis**

CNS: headache, hot flashes.
CV: edema.
Endo: hot flashes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Interactions**

Drug-drug: Risk of serious arrhythmias may be increased by concurrent amiodarone, disopyramide, dofetilide, flecainide, ibutilide, propafenone, quinidine, so-

**Contraindication**

**Precautions**

**Use Cautiously**

**Adverse Reactions**

**Side Effects**

CNS: depression, dizziness.
CV: hypertension.
Endo: glucose intolerance.
Hemat: anemia.
Local: injection site reactions.
MS: osteoporosis (long-term use).
Misc: transient exacerbation of metastatic prostate cancer or endometriosis.

**Prostate cancer**

CNS: headache (nasal solution).
CV: edema.
Endo: hot flushes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Endometriosis**

CNS: headache, hot flashes.
CV: edema.
Endo: hot flashes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Interactions**

Drug-drug: Risk of serious arrhythmias may be increased by concurrent amiodarone, disopyramide, dofetilide, flecainide, ibutilide, propafenone, quinidine, so-

**Contraindication**

**Precautions**

**Use Cautiously**

**Adverse Reactions**

**Side Effects**

CNS: depression, dizziness.
CV: hypertension.
Endo: glucose intolerance.
Hemat: anemia.
Local: injection site reactions.
MS: osteoporosis (long-term use).
Misc: transient exacerbation of metastatic prostate cancer or endometriosis.

**Prostate cancer**

CNS: headache (nasal solution).
CV: edema.
Endo: hot flushes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Endometriosis**

CNS: headache, hot flashes.
CV: edema.
Endo: hot flashes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Interactions**

Drug-drug: Risk of serious arrhythmias may be increased by concurrent amiodarone, disopyramide, dofetilide, flecainide, ibutilide, propafenone, quinidine, so-

**Contraindication**

**Precautions**

**Use Cautiously**

**Adverse Reactions**

**Side Effects**

CNS: depression, dizziness.
CV: hypertension.
Endo: glucose intolerance.
Hemat: anemia.
Local: injection site reactions.
MS: osteoporosis (long-term use).
Misc: transient exacerbation of metastatic prostate cancer or endometriosis.

**Prostate cancer**

CNS: headache (nasal solution).
CV: edema.
Endo: hot flushes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Endometriosis**

CNS: headache, hot flashes.
CV: edema.
Endo: hot flashes.
GU: libido, impotence.
Derm: acne.
MS: back pain.

**Interactions**

Drug-drug: Risk of serious arrhythmias may be increased by concurrent amiodarone, disopyramide, dofetilide, flecainide, ibutilide, propafenone, quinidine, so-

**Contraindication**

**Precautions**

**Use Cautiously**

**Adverse Reactions**

**Side Effects**

CNS: depression, dizziness.
CV: hypertension.
Endo: glucose intolerance.
Hemat: anemia.
Local: injection site reactions.
MS: osteoporosis (long-term use).
Misc: transient exacerbation of metastatic prostate cancer or endometriosis.
tial, antipsychotics (including chlorpromazine) antidepressants (including amitryptline and nortriptyline), opioids (including methadone), macrolide anti-infectives (including azithromycin, erythromycin and clarithromycin), quinolone anti-infectives (including moxifloxacin), ankle antifungals, 5-
HT3 antagonists (including ondansetron), beta-2 agonists (including salbutamol), pentamidine and quinine.

**Route/Dosage**

**Prostate cancer**

Subcut (Adults): Initial treatment—500 mcg every 8 hr for 7 days, maintenance dosage—200 mcg daily.

Intranasal (Adults): Maintenance dosage—400 mcg (200 mcg in each nostril) three times daily.

Implant (Adults): 6.3 mg every 2 mos or 9.45 mg every 3 mos.

**Endometriosis**

Intranasal (Adults): 400 mcg (200 mcg in each nostril) three times daily. Treatment is usually continued for 6 mos, not to exceed 9 mos.

**NURSING IMPLICATIONS**

**Assessment**

- **Cancer:** Monitor patients with vertebral metastases for increased back pain and decreased sensory/motor function.
- **Endometriosis:** Assess patients for signs and symptoms of endometriosis before and periodically during therapy. Amenorrhea usually occurs within 8 wk of initial administration and returns usually occurs within 6 wk after completion.

**Lab Test Considerations:** During treatment male patients should have blood tests every 3 mos to measure testosterone levels. When treatment begins, testosterone levels can temporarily markedly increase and patients may need another medication to decrease levels.

- **Women:** Monitor blood glucose in patients with diabetes frequently; may affect blood glucose levels.

**Implementation**

**Prostate Cancer**

- **Subcut:** Only use syringes that come with kit for accurate dose. Inject into fatty tissue of abdomen, arm, or leg 3 times a day for 7 days, then daily maintenance.

- **Intranasal:** When used as maintenance, begin nasal spray in each nostril 3 times daily. If patient also receives decongestant nasal spray, wait 30 minutes to give buserelin spray before or after the decongestant.

- **Implant:** If implant is inserted in subcutaneous tissue of upper abdominal wall every 28 days, local anesthetic may be used before insertion.

**Endometriosis**

- **Intranasal:** One spray in each nostril 3 times daily for 6 to 9 months.

**Patient/Family Teaching**

- **Men:** May experience breast swelling and tenderness, decreased libido, hot flashes and sweats, impotence and weight gain. Notify health care professional if these symptoms occur.

- **Women:** May experience decreased libido, constipation, painful sexual intercourse, menopausal symptoms, changes in hair growth. Notify health care professional if these symptoms occur.

- **Caution both male and female patients to use contraception while taking this drug. Advise female patient to inform health care professional of pregnancy is suspected. Buserelin can be harmful to a fetus.**

- **Subcut:** Instruct patients on proper technique for self-injection, care and disposal of equipment. Use only syringes included in kit. Instruct patients that syringes may only be used once, and then discarded.

- **Intranasal:** Instruct patient on proper nasal spray technique. Prime pump before use.

© 2015 F.A. Davis Company
CONTINUED

buserelin

- Advise patients that the nasal spray can cause nose bleeds and may change smell and taste senses.

Evaluation/Desired Outcomes

- Decrease in the spread of prostate cancer.
- Decrease in lesions and pain in endometriosis.

Why was this drug prescribed for your patient?