### alprostadil (intracavernosal, intraurethral)

(al-pros-ta-dil)

Caverject, Edex, MUSE

**Classification**
Therapeutic: erectile dysfunction agents
Pharmacologic: prostaglandins

**Pregnancy Category C**

#### Indications
Diagnosis and treatment of erectile dysfunction.

#### Action
Relaxes trabecular smooth muscle and dilates cavernosal arteries.

#### Pharmacokinetics
**Absorption:** Action is primarily local following intracavernosal injection; after intraurethral use, it is absorbed into the corpora cavernosa.

**Distribution:** Unknown.

**Metabolism and Excretion:** Mostly metabolized locally; any systemically absorbed alprostadil is metabolized in the liver.

**Half-life:** 5–10 min.

#### TIME/ACTION PROFILE (erection)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intracavernosal</td>
<td>5–10 min</td>
<td>within 30 min</td>
<td>1 hr</td>
</tr>
<tr>
<td>Intraurethral</td>
<td>5–10 min</td>
<td>within 24 min</td>
<td>0.5–1 hr</td>
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</tbody>
</table>

#### Contraindications/Precautions
- Contraindicated in: Penile implants; Penile abnormalities; Balanitis; Men for whom sexual activity is not advisable; Conditions predisposing to priapism (e.g. sickle cell anemia/trait, multiple myeloma, leukemia); Urethritis (suppositories).

- Use Cautiously in: Severe coagulation abnormalities or thrombocytopenia; Patients taking anticoagulants or antihypertensive agents.

#### Adverse Reactions/Side Effects
- **CNS:** dizziness, headache.
- **CV:** hypertension, hypotension.
- **GU:** penile pain, penile ulcers, penile fibrosis, penile rashes, priapism, MS back pain.
- **Resp:** cough.
- **Resp:** bleeding, ecchymosis (injection), hematomas (injection), irritation.

#### Interactions
- **Drug-Drug:** Increased risk of bleeding at site of intracavernosal injection in patients receiving anticoagulants. Should not be used with other vasoactive agents.

#### Route/Dosage

- **Intracavernosal (Adults):** 1.25–2.5 mcg initially; dose titrated as needed. Should not be used more than 3 times/week. There should be at least 24 hr between doses. Doses > 40 mcg (Edex) or > 80 mcg (Caverject) should not be used.

- **Intraurethral (Adults):** 125–250 mcg initially; dose titrated as needed. Do not use more than 250 mcg to 25 hr.

#### NURSING IMPLICATIONS

- **Assessment**
  - Monitor for hypotension during in-clinic dosing.

- **Potential Nursing Diagnoses**
  - Home care: (Side Effects)

#### Implementation
- **Intracavernosal Injection:** Reconstitute Caverject with 1 mL of bacteriostatic water with benzyl alcohol. For Caverject Impulse and Edex, follow manufacturer’s instructions for reconstitution. Do not shake. Use solution immediately; do not freeze or store. Do not administer solutions that are discolored or contain precipitates. A 1/2 in, 27–30-gauge needle is used for injection. Injection site is usually along the dorsolateral aspect of the proximal third of the penis. Avoid visible veins. Alternate sides of the penis with each injection. Wash site with alcohol before injection. AutoInjector (PenInject 2.25) is available for self-injection.

- **Intraurethral:** System comes with applicator, pellet, and instructions. Store unopened packets in refrigerator.

- **Patient/Family Teaching**
  - Patients should be instructed that erections occurring without sexual stimulation are common.

#### Genitourinary Implications

- **Cautions:** Use with caution in patients with hepatic impairment. Patients with hepatic impairment may have increased exposure to alprostadil.

#### Concomitant Use

- **Concomitant use of vasodilators or nitric oxide donors** may increase the risk of hypotension.

#### Genetic Implication

- **CAPI TALS** indicate life-threatening, underlines indicate most frequent.
Caution patient that use of alprostadil offers no protection against sexually transmitted diseases (STDs). Injection of alprostadil may cause a small amount of bleeding at injection site, increasing risk of transmission of bloodborne diseases. Advise patient to use protective measures to prevent spread of STDs, including HIV.

Intracavernosal Injection: Instruct patient on correct technique for preparation, injection, and disposal of equipment. Caution patient not to reuse or share needles with other persons. Deviate dose is determined with first injection in physician’s office. Advise patient not to increase dose without consulting physician. Injections should be administered no more than 3 times/wk, with 24 hr between injections. Advise patient to notify physician if nodules or hard tissue in the penis, redness, swelling, or tenderness, or curvature of the erect penis occurs. Emphasize the importance of follow-up exams every 3 mo to assess efficacy and safety of therapy.

Intraurethral: Instruct patient on proper technique for administering before self-administration. Patient should urinate before insertion. Stretch penis longitudinaly and press at top and bottom. Insert the delivery device into urethra, depress button to release suppository, and fold device upright and immobile for 5 sec. Move penis and device in an up and down motion to help distribute suppository. Move penis and device in a side to side motion to help dissolve suppository and reduce discomfort. If uncomfortable or pulling sensation occurs, remove device and repeat procedure. After device is withdrawn, patient should roll penis between the hands for 10 sec to further distribute suppository within walls of urethra and decrease stinging sensation. Sitting, standing, or walking for 10 min while erection is developing promotes blood flow. Patient should not exceed 2 systems in 24 hr. An erection that lasts longer than desired may be relieved by the application of an icepack alternately to each inner thigh for a period no longer than 10 min.

Advise patient to use contraception if engaging in sexual intercourse with female of reproductive age. Use a condom if female is pregnant; effects on the fetus are unknown.

Evaluation/Desired Outcomes: After intracavernosal injection, an erection should occur within 5–20 min and last no longer than 1 hr. After intraurethral administration, erection should occur within 5–10 min and last 30–60 min.

Why was this drug prescribed for your patient?