papaverine (pa-pav-er-een)
\[\text{PO: Para-Time S.R., Papacon, Para-Time S.R.,}\
\text{Pavacot}\]

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

**Pregnancy Category** C.

**Indications**
Although designated by the FDA as ineffective for these indications, has been used in the following: Management of cerebral and peripheral ischemia, usually associated with arterial spasm. Treatment of myocardial ischemia complicated by arrhythmias. Improvement of collateral circulation in acute vascular occlusion. Management of ureteral, biliary, or GI colic.

**Action**
Dilation of arteries by a direct spasmolytic action on vascular smooth muscle. Therapeutic Effects: Vasodilation.

**Pharmacokinetics**
- **Absorption:** Variably (50%) absorbed after oral administration; absorption from timed-release formulations may be less. Slowly absorbed after intracavernosal administration.
- **Distribution:** Unknown.
- **Protein Binding:** 90%.
- **Metabolism and Excretion:** Mainly metabolized by the liver.
- **Half-life:** 0.5–2 hr (highly variable; may be as long as 24 hr).

**TIME/ACTION PROFILE (PO, IM, IV)/Vasodilating effects, intracavernosal penile erection)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>unknown</td>
<td>unknown</td>
<td>4–8 hr</td>
</tr>
<tr>
<td>IV</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>Intracavernosal</td>
<td>10 min</td>
<td>unknown</td>
<td>4 hr</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**
- Contraindicated in: Hypersensitivity or complete AV block.
- Use Cautionally in: Glaucoma; Depressed cardiac conduction; Priapism; Sickle cell disease; Impaired liver function; Severe coagulation defects.
- OB, Lactation,
Pedi:
Pregnancy, lactation, or children (safety not established).

**Adverse Reactions/Side Effects**
- **CNS:** Depression, dizziness, vertigo, headache, drowsiness, sedation.
- **EENT:** Dry throat, visual changes.
- **Resp:** Apnea (IV only).
- **CV:** Arrhythmias (IV only), hypotension, slight hypertension.
- **GI:** Dry mouth, constipation, nausea, diarrhea, abdominal distress, anorexia, hepatitis.
- **GU:** Priapism (intracavernosal only).
- **Derm:** flushing, sweating.
- **Local:** thrombosis at injection site.

**Interactions**
- **Drug-Drug:** May prevent response to levodopa in patients with Parkinson’s disease. Alpha-adrenergic agonists (metaraminol, epinephrine, or phenylephrine) or cigarette smoking (nicotine) may reverse the vasodilating effects of papaverine.

**Route/Dosage**
- **PO (Adults):** 150 mg q 12 hr, up to 150 mg q 8 hr or 300 mg q 12 hr.
- **Intracavernosal (Adults):** 30 mg with 0.5–1 mg of phentolamine or 30 mg alone initial dose, may increase to 60 mg/dose, not to be repeated more than 3 times/wk or more than 2 consecutive days.

**NURSING IMPLICATIONS**
- **Assessment:**
  - Monitor HR and pulse before and periodically during of therapy.
  - Monitor ECG in patients receiving IV papaverine. Withhold dose and notify physician if AV block is present.
  - Monitor IV site for thrombosis (erythema, pain, edema).
- **Lab Test Considerations:** Monitor liver function studies. May cause ↑ AST, ALT, alkaline phosphatase, and bilirubin levels. Notify health-care professional of these symptoms of hepatic sensitivity. Eosinophils may also be ↑.

**Potential Nursing Diagnoses**
- Ineffective tissue perfusion (Indications)
- Deficient knowledge, related to medication regimen (Patient/Family Teaching)

**Patient/Family Teaching**
- Instruct patient to report symptoms of hepatic sensitivity. Eosinophilia may also be ↑.
- Diligent knowledge, related to medication regimen (Patient/Family Teaching)

**Common Side Effects**
- Sedation, sweating

**Discontinue**
Implementation

- PO: Tablets may be administered with milk, meals, or antacids if nausea occurs.
- Extended-release form should not be crushed or chewed.
- Impotence: Has been used with phentolamine to treat men with erectile dysfunction associated with spinal cord injury. Produces an erection after injection into corpus cavernosum. Risk of priapism exists. This method requires special training.

IV Administration

- Direct IV: Diluent: Administer undiluted solution should be clear to light yellow. Do not refrigerate. Rate: Administer dose over at least 2 min. Rapid administration may cause hypotension, tachycardia, flushing, and facial flushing.
- Syringe Compatibility: phentolamine.

Patient/Family Teaching

- Instruct patient to take medication as directed. Take missed dose as soon as remembered, but not if almost time for next dose. Do not double doses. Instruct patient not to discontinue medication without conferring with health care professional.
- Encourage patient not to smoke; concurrent administration of nicotine will cause vasoconstriction.
- May cause dizziness or drowsiness. Advise patient to avoid driving or other activities requiring alertness until response to medication is known.
- Caution patients to make position changes slowly to minimize orthostatic hypotension.
- Instruct patient to notify health care professional if dizziness, drowsiness, headache, or vision changes occur.
- Advise patients with a history of glaucoma to have regular eye examinations.

Evaluation/Desired Outcomes

- Absence of symptoms of cerebral, peripheral, or myocardial ischemia.
- Relief of ureteral, biliary, or GI colic.
- Erection in men with erectile dysfunction, beginning 10 min after injection into corpus cavernosum and sustained for up to 4 hr.

Why was this drug prescribed for your patient?