phentolamine (fen-tole-a-meen)
Oraverse, Regitine, Rogitine

Classification
Therapeutic: agents for pheochromocytoma
Pharmacologic: alpha-adrenergic blockers

Pregnancy Category: C

Indications
IV: Control of BP during surgical removal of a pheochromocytoma.
IV, Infiltration: Prevention and treatment of dermal necrosis and sloughing following extravasation of norepinephrine, phenylephrine, or dopamine.
Local: Reversal of soft-tissue anesthesia (of lip and tongue) resulting from an intraoral submucosal injection of a local anesthetic containing a vasconstrictor.

Unlabeled Use: IM, IV: Treatment of hypertension associated with pheochromocytoma or adrenergic (sympathetic) excess, such as administration of phenylephrine, tyramine-containing foods in patients on MAO inhibitor therapy, or clonidine withdrawal.

Action
Produces incomplete and short-lived blockade of alpha-adrenergic receptors located primarily in smooth muscle and exocrine glands. Induces hypotension by direct relaxation of vascular smooth muscle and by alpha blockade. Increases blood flow to submucosal tissue through blockade of alpha receptors.

Therapeutic Effects: Reduction of BP in situations in which hypertension is due to adrenergic (sympathetic) excess. When infiltrated locally, reverses vasoconstriction caused by norepinephrine or dopamine. Reverses local anesthetic effects (restores normal lip and tongue sensation).

Pharmacokinetics
Absorption: Well absorbed following IM administration; completely available after local injection.
Distribution: Unknown.
Metabolism and Excretion: 10% excreted unchanged by kidneys.
Half-life: Parenteral (IV): 2–3 hr (local injection).

Contraindications/Precautions
Contraindicated in: Hypersensitivity; Coronary or cerebral arteriosclerosis; Renal impairment.
Use Cautiously in: Peptic ulcer disease; OB, Lactation: Safety not established; Pedi: Children <6 yr or >15 kg (Oraverse) (safety not established); Geri: More susceptible to hypotensive effects, adjust dose accordingly.

Adverse Reactions/Side Effects
With parenteral use: CNS: CEREBROVASCULAR SPASM, dizziness, weakness.
EENT: nasal stuffiness.
CV: HYPOTENSION, MI, angina, arrhythmias, tachycardia.
GI: abdominal pain, diarrhea, nausea, vomiting, aggravation of peptic ulcer.
Derm: flushing.
Local: injection site pain (local).

Interactions
Drug-Drug: Antagonizes the effects of alpha-adrenergic stimulants. May increase pressor response to ephedrine or phenylephrine. Severe hypotension may occur with concurrent use of dopamine or methoxamine. Peripheral vasoconstriction from high doses of dopamine.

Route/Dosage
Hypertension Associated with Pheochromocytoma—Before/During Surgery
IV (Adults): 5 mg given 1–2 hr preop, repeated as necessary.
IV, IM (Children): 1 mg or 0.1 mg/kg (3 mg/m2) given 1–2 hr preop, repeated IV as necessary during surgery.
Prevention of Dermal Necrosis during Infusion of Norepinephrine, Phenylephrine, or Dopamine
IV (Adults): Add 10 mg phentolamine to every 1000 mL of fluid containing norepinephrine.
Treatment of Dermal Necrosis Following Extravasation of Nor-
ephinephrine, Phenylephrine, or Dopamine

**Intravenous (Adults): 5–10 mg.**

**Intravenous (Children):** 0.1–0.2 mg/kg (up to 10 mg).

Reversal of Intracutaneous Anesthesia Following Dental
Procedures (Oraverse)

**Intradermal or Block Injection (Adults and Children 6 yr and
30 kg):** Dose administered is based on number of cartridges of local anesthetic with vasoconstrictor administered:

- 1/2 cartridge local anesthetic—0.2 mg phentolamine (1/2 cartridge)
- 1 cartridge local anesthetic—0.4 mg phentolamine (1 cartridge)
- 2 cartridges local anesthetic—0.8 mg phentolamine (2 cartridges)

**Intradermal or Block Injection (Children 6 yr and 15–30 kg):** Do not exceed dose of 0.2 mg (1/2 cartridge).

**NURSING IMPLICATIONS**

**Assessment**

- Monitor BP, pulse, and ECG every 2 min until stable during IV administration. If hypotensive crisis occurs, epinephrine is contraindicated and may cause paradox further decrease in BP; norepinephrine may be used.

**Potential Nursing Diagnoses**

- Ineffective tissue perfusion (Indications)
- Risk for injury (Indications)

**Implementation**

- Monitoring values should be corrected after parenteral administration.

**IV Administration**

- **pH:** 4.5–6.5
- **IV Diluent:** Reconstitute 5 mg with 1 mL of sterile water for injection or 0.9% NaCl. Discard unused solution. Concentration: 5 mg/mL. Rate: Inject each 5 mg over 1 min.
- **Continuous Infusion:** Dilute 5–10 mg in 500 mL of D5W.

- **Rate:** Titrate infusion rate according to patient response.

- May also add 10 mg in every 1000 mL of fluid containing norepinephrine for prevention of dermal necrosis and sloughing. Does not affect pressor effect of norepinephrine.

**Storage Compatibility:**

- **Parenteral solutions:** Albuterol, atropine, aminophylline, amiodarone, amoxicillin, ampicillin, ampicillin/sulbactam, amphotericin B colloidal, aztreonam, bactrim, bivalirudin, bleomycin, bright, busulfan, calcium chloride, calcium gluconate, cefazolin, ceftriaxone, chlorpromazine, cimetidine, ciprofloxacin, cyclosporine, dapsone, dexamethasone, diazepam, docetaxel, doxorubicin, doxorubicin hydrochloride, dopamine, etoposide, epinephrine, epoetin, famotidine, famotidine/sulfuric acid, fludarabine, furosemide, gatifloxacin, gentamicin, glycopyrrolate, granisetron, heparin, hydrocortisone sodium succinate, insulin, interferon, levamisole, lidocaine, linezolid, lorazepam, magnesium sulfate, mannitol, meperidine, meropenem, metaraminol, methylprednisolone, mitomycin, nafion, naloxone, nafcillin, nesiritide, nitroglycerin, nitroprusside, norepinephrine, octreotide, ondansetron, oxaliplatin, paclitaxel, palonosetron, pantoprazole, pemetrexed, pentamidine, phenylephrine, phthaloarginine, piperacillin/tazobactam, potassium chloride, prednisone, propranolol, protamine, quinidine, ranitidine, sodium bicarbonate, streptomycin, succinylcholine, suxamethonium, sulfamethoxazole, thiamine, thiotepa, ticarcillin/clavulanate, tocainide, tobramycin, tromethamine, triamcinolone, trizol, vancomycin, vasoconstrictors, vasopressin, vecuronium, verapamil, vinorelbine, voriconazole.

- **Y-Site Incompatibility:** Amphotericin B colloidal, cefoperazone, cef-

- **Additive Compatibility:** Dobutamine, methyldopa.

**Intravenous (Adults): 5–10 mg of phentolamine in 10 mL of 0.9% NaCl. For chil-

**Patient/Family Teaching**

- Advise patient to change position slowly to minimize orthostatic hypotension.

- Inform patient to notify health care professional if chest pain occurs during IV admin-

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**phentolamine**

**Evaluation/Desired Outcomes**

- Decrease in BP
- Prevention of dermal necrosis and sloughing in extravasation of norepinephrine, dopamine, and phenylephrine.
- Restoration of normal lip and tongue sensation following local anesthesia.

*Why was this drug prescribed for your patient?*