amlODIPine (am-lo-di-pen)

Common
Classification
Therapeutic: antihypertensives
Pharmacologic: calcium channel blockers

Pregnancy Category C

Indications
Alone or with other agents in the management of hypertension, angina pectoris, and vasospastic (Prinzmetal’s) angina.

Action
Inhibits the transport of calcium into myocardial and vascular smooth muscle cells, resulting in inhibition of excitation-contraction coupling and subsequent contraction. Calcium channel blockers are not specific for any particular tissue or vessel type.

Therapeutic Effects:
Systemic vasodilation resulting in decreased BP. Coronary vasodilation resulting in decreased frequency and severity of attacks of angina.

Pharmacokinetics
Absorption: Well absorbed after oral administration (64–90%).

Distribution: Probably crosses the placenta.

Protein Binding: 95–98%.

Metabolism and Excretion: Mostly metabolized by the liver.

Half-life: 3–5 hours (geriatric patients and patients with hepatic impairment).

TIME/ACTION PROFILE (cardiovascular effects)

ROUTE ONSET PEAK DURATION
PO unknown 6–9 hr 24 hr

Contraindications/Precautions
Contraindicated in: Hypersensitivity; Systolic BP ≤ 90 mm Hg.

Use Cautiously in: Severe hepatic impairment (dosage reduction recommended); Aortic stenosis; History of HF; OB, Lactation, Pedi: Children ≤ 6 yr (safety not established); Geri: Dose reduction recommended; q risk of hypotension.

Adverse Reactions/Side Effects
CNS: dizziness, fatigue.

CV: peripheral edema, angina, bradycardia, hypotension, palpitations.

GI: gingival hyperplasia, nausea.

Derm: flushing.

Interactions
Drug-Drug: Strong CYP3A4 inhibitors, including ketoconazole, itraconazole, and ritonavir may increase levels. Additive hypotension may occur when used concurrently with fentanyl, other antihypertensives, nitrates, acute ingestion of alcohol, or quinidine. Antihypertensive effects may be reversed by concurrent use of nonsteroidal anti-inflammatory agents. May ↑ blood levels with lithium. ↑ risk of neurotoxicity with lithium. ↑ risk of myopathy with simvastatin (do not exceed 20 mg/day of simvastatin). May ↓ cyclosporine levels. Drug-Food: Grapefruit may ↑ serum levels and effect.

Route/Dosage
PO (Adults): 5–10 mg once daily; antihypertensive in fragile or small patients or patients already receiving other antihypertensives—initiate at 2.5 mg/day, ↑ as required/blood pressure therapy with 2.5 mg/day in patients with hepatic insufficiency.

PO (Geriatric Patients): Antihypertensive—initiate therapy at 2.5 mg/day, ↑ as required/blood pressure therapy with 2.5 mg/day in patients with hepatic insufficiency.

PO (Adults): Antihypertensive—initiate therapy at 2.5 mg/day, ↑ as required/blood pressure therapy with 2.5 mg/day; angina—initiate therapy at 5 mg/day, ↑ as required/blood pressure therapy with 5 mg/day.

PO (Children 6–17 yr): 5–10 mg once daily.

Hepatic Impairment
PO (Adults): Antihypertensive—initiate therapy at 2.5 mg/day, ↑ as required/blood pressure therapy with 2.5 mg/day; angina—initiate therapy at 5 mg/day, ↑ as required/blood pressure therapy with 5 mg/day.

PO (Children 6–17 yr): 5–10 mg once daily.

NURSING IMPLICATIONS
Assessment
Monitor BP and pulses before therapy, during dose titration, and periodically during therapy. Monitor ECG periodically during prolonged therapy.

Monitor intake and output ratios and daily weight. Assess for signs of HF (peripheral edema, rales/crackles, dyspnea, weight gain, jugular venous distention).

Angina: Assess location, duration, intensity, and precipitating factors of patient’s anginal pain.

Lab Test Considerations: Total serum calcium concentrations are not altered by calcium channel blockers.

Potential Nursing Diagnoses
Ineffective tissue perfusion (Indications)
Acute pain (Indications)

Interactions
Drug-Drug: Strong CYP3A4 inhibitors, including ketoconazole, itraconazole, and ritonavir may increase levels. Additive hypotension may occur when used concurrently with fentanyl, other antihypertensives, nitrates, acute ingestion of alcohol, or quinidine. Antihypertensive effects may be reversed by concurrent use of nonsteroidal anti-inflammatory agents. May ↑ blood levels with lithium. ↑ risk of neurotoxicity with lithium. ↑ risk of myopathy with simvastatin (do not exceed 20 mg/day of simvastatin). May ↓ cyclosporine levels. Drug-Food: Grapefruit may ↑ serum levels and effect.
Implementation

- Do not confuse amlodipine with amiloride. Do not confuse Norvasc with Navane.
- PO: May be administered without regard to meals.

Patient/Family Teaching

- Advise patient to take medication as directed, even if feeling well. Take missed doses as soon as possible unless almost time for next dose; do not double doses.
- May need to be discontinued gradually.
- Advise patient to avoid large amounts (6–8 glasses of grapefruit juice/day) during therapy.
- Instruct patient on correct technique for monitoring pulse. Instruct patient to contact health care professional if heart rate is <50 bpm.
- Caution patient to change positions slowly to minimize orthostatic hypotension.
- May cause drowsiness or dizziness. Advise patient to avoid driving or other activities requiring alertness until response to the medication is known.
- Instruct patient on importance of maintaining good dental hygiene and using denture adhesive (frequent periodontal care and use of water-rinsing mouthwash may help prevent gum disease and gingival hyperplasia).
- Advise patient in oral health care professional of all Rx or OTC medications, vitamins, or herbal products being taken, to avoid alcohol, and to consult health care professional before taking any new medications, especially cold preparations.
- Advise patient to notify health care professional if irregular heartbeats, dyspnea, swelling of hands and feet, pronounced dizziness, nausea, constipation, or hypotension occurs or if headache is severe or persistent.
- Caution patient on importance of maintaining good dental hygiene and using denture adhesive (frequent periodontal care and use of water-rinsing mouthwash may help prevent gum disease and gingival hyperplasia).
- Advise patient to use sunscreen to prevent photosensitivity reactions.
- Advise patient to discuss exercise restrictions with health care professional before exertion.
- Instruct patient not to exceed 25 mg of nifedipine or 100 mg of amlodipine during therapy.
- Instruct patient to transfer in a manner that prevents excessive loss of body fluids, which can occur during therapy.
- Advise patient to use nitrates only as directed, including use of long-acting nitrates.
- Encourage patient to comply with other interventions for hypertension (weight reduction, low-sodium diet, smoking cessation, moderation of alcohol consumption, regular exercise, and stress management).
- Caution patient to avoid grapefruit juice and products containing grapefruit juice.
- Advise patient to avoid use of alcohol, which may increase dizziness or drowsiness.
- Advise patient to avoid exposure to direct sunlight and use sunscreen to prevent photosensitivity reactions.
- Advise patient to avoid driving or operating machinery if dizziness occurs.
- Advise patient to contact health care professional if chest pain does not improve or worsens after therapy, if shortness of breath occurs, or if severe, persistent headache occurs.

Evaluation/Desired Outcomes

- Decrease in BP.
- Decrease in frequency and severity of anginal attacks.
- Decrease in need for nitrate therapy.
- Increase in activity tolerance and sense of well-being.

Why was this drug prescribed for your patient?