

amLODIPine (am-loe-di-peen)

Norvasc

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. **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:** 30–50 hr (↑ in geriatric patients and patients with hepatic impairment).

TIME/ACTION PROFILE (cardiovascular effects)

ROUTE	ONSET	PEAK	DURATION
PO	unknown	6–9	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); **Ger:** Dose reduction recommended; ↑ risk of hypertension.

Adverse Reactions/Side Effects

CNS: dizziness, fatigue, CV: peripheral edema, angina, bradycardia, hypotension, palpitations. **GI:** gingival hyperplasia, nausea. **Derm:** flushing.

* = Canadian drug name.

⊠ = Genetic Implication.

CAPITALS indicate life-threatening, underlines indicate most frequent.~~Strikethrough~~ = Discontinued.**Interactions**

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

Drug-Food: Grapefruit juice ↑ 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/tolerated (up to 10 mg/day) as an antihypertensive therapy with 2.5 mg/day in patients with hepatic insufficiency.

PO (Geriatric Patients): *Antihypertensive*—Initiate therapy at 2.5 mg/day, ↑ as required/tolerated (up to 10 mg/day); *antianginal*—initiate therapy at 5 mg/day, ↑ as required/tolerated (up to 10 mg/day).

PO (Children 6–17 yr): 2.5–5 mg once daily.**Hepatic Impairment**

PO (Adults): *Antihypertensive*—Initiate therapy at 2.5 mg/day, ↑ as required/tolerated (up to 10 mg/day); *antianginal*—initiate therapy at 5 mg/day, ↑ as required/tolerated (up to 10 mg/day).

NURSING IMPLICATIONS**Assessment**

- Monitor BP and pulse 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 angular pain.
- **Lab Test Considerations:** Total serum calcium concentrations are not affected by calcium channel blockers.

Potential Nursing Diagnoses

Ineffective tissue perfusion (Indications)

Acute pain (Indications)

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 seeing dentist frequently for teeth cleaning to prevent tenderness, bleeding, and gingival hyperplasia (gum enlargement).
- Instruct patient to notify 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 to wear protective clothing and use sunscreen to prevent photosensitivity reactions.
- Advise patient to inform health care professional of medication regimen before treatment or surgery.
- **Angina:** Instruct patient on concurrent nitrate or beta-blocker therapy to continue taking both medications as directed and to use SL nitroglycerin as needed for anginal attacks.
- Advise patient to contact health care professional if chest pain does not improve or worsens after therapy, if it occurs with diaphoresis, if shortness of breath occurs, or if severe, persistent headache occurs.

- Caution patient to discuss exercise restrictions with health care professional before exertion.
- **Hypertension:** 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). Medication controls but does not cure hypertension.
- Instruct patient and family in proper technique for monitoring BP. Advise patient to take BP weekly and to report significant changes to health care professional.

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?