fosinopril (foe-sin-oh-pril)

**Classification**  
Therapeutic: antihypertensives  
Pharmacologic: ACE inhibitors

**Pregnancy Category D**

**Indications**  
Or alone or with other agents in the management of hypertension. Management of heart failure.

**Action**  
Angiotensin-converting enzyme (ACE) inhibitors block the conversion of angiotensin I to the vasoconstrictor angiotensin II. ACE inhibitors also raise plasma renin levels and aldosterone levels. Net result is systemic vasodilation. Therapeutic Effects: Lowering of BP in patients with hypertension. Decreased afterload and symptoms in patients with heart failure.

**Pharmacokinetics**  
Absorption: 36% absorbed following oral administration.  
Distribution: Crosses the placenta; enters breast milk in small amounts.  
Protein Binding: 99.4%.  
Metabolism and Excretion: Converted by the liver and GI mucosa to fosinoprilat, the active metabolite: 50% excreted in urine, 50% in feces.  
Half-life: 12 hr.

**TIME/ACTION PROFILE (effect on BP—single dose†)**  
<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>Within 1 hr</td>
<td>2–6 hr</td>
<td>24 hr</td>
</tr>
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</table>

†Full effects may not be noted for several weeks

**Contraindications/Precautions**  
Contraindicated in: Hypersensitivity; Bilateral renal artery stenosis; History of angioedema with previous use of ACE inhibitors; OB: Can cause injury or death of fetus – if pregnancy occurs, discontinue immediately; Concurrent use with aliskiren in patients with diabetes or moderate-to-severe renal impairment (CrCl 30–59 mL/min); Use cautiously in: Patients with renal impairment, hypovolemia, hyponatremia, and concurrent diuretic therapy; Black patients (monotherapy for hypertension less effective, may require additional therapy; higher risk of angioedema); Surgery/anesthesia (angiography may be exaggerated). Women of childbearing potential.  
**Pedi:** Children – try safety not established.  
**Geri:** Initial dose recommended.  
**Exercise Extreme Caution in:** Family history of angioedema.

**Adverse Reactions/Side Effects**  
CNS: dizziness, fatigue, headache, insomnia, weakness.  
Resp: cough.  
CV: hypotension, chest pain, edema.  
GI: abdominal pain, diarrhea, nausea, vomiting.  
GU: erectile dysfunction, impaired renal function.  
Derm: rash.  
F and E: hyperkalemia.  
MS: muscle cramps.  
Resp: dyspnea.  
Misc: ANGIOEDEMA.

**Interactions**  
**Drug-Drug:** Excessive hypotension may occur with concurrent use of diuretics, lidocaine, or other antihypertensive agents. Risk of hyperkalemia with concurrent use of potassium supplements, potassium-sparing diuretics, or potassium-containing salt substitutes. Risk of hyperkalemia, renal dysfunction, and response with concurrent use of angiotensin II receptor antagonists or aldosterone antagonists, avoid concurrent use with diuretics in patients with diabetes or CrCl ≤ 30 mL/min. NSAIDs and selective COX-2 inhibitors may blunt the antihypertensive effect and the risk of renal dysfunction. Absorption may be by antacids (separate administration by 1–2 hr). Levels may the risk of lithium toxicity.

**Route/Dosage**  
**PO (Adults):**  
Hypertension—10 mg once daily, may be 20 mg once daily; heart failure—10 mg once daily or up to 80 mg/day (decrease slowly—10 mg once daily in patients who have been vigorously diuresed), may be 20 mg or more weekly up to 80 mg/day.  
**PO (Children <6 yr and <50 kg):** Hypertension—5–10 mg once daily.

**NURSING IMPLICATIONS**  
**Assessment**  
- Hypertension: Monitor BP and pulse freq during initial dose adjustment and periodically during therapy. Notify health care professional of significant changes.

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Monitor frequency of prescription refills to determine compliance.

Assess patient for signs of angioedema (edema, facial swelling).

Heart Failure: Monitor weight and assess patient routinely for resolution of fluid overload (peripheral edema, rales/crackles, dyspnea, weight gain, jugular venous distention).

Lab Test Considerations: Monitor renal function. May cause ↑ in BUN and serum creatinine.

May cause hyperkalemia.

Monitor CBC, especially those with collagen vascular disease or renal disease. May rarely cause neutropenia.

May cause ↑ in AST, ALT, alkaline phosphatase, and serum bilirubin.

Potential Nursing Diagnoses

Decreased cardiac output (Side Effects)

Deficient knowledge, related to medication regimen (Patient/Family Teaching)

Implementation

Correct volume depletion, if possible, before initiation of therapy due to possible precipitous drop in BP during first 1–3 hr following first dose. Risk of hypotension may be decreased by discontinuing diuretics or cautiously increasing salt intake 2–3 days prior to beginning therapy. Monitor BP closely. Resume diuretics if BP is not controlled.

Patient/Family Teaching

Before taking medication as directed at the same time each day, even if feeling well. Take missed doses as soon as remembered but not if almost time for next dose. Do not double dose. Encourage patient to communicate if side effects occur.

Caution patient to avoid salt substitutes containing potassium or foods containing high levels of potassium or sodium. Instruct patient to report any side effects.

Instruct patient to change positions slowly to minimize orthostatic hypotension. Use of alcohol, standing for long periods, exercising, and hot weather may increase orthostatic hypotension.

Instruct patient to notify health care professional if rash, mouth sores, sore throat, fever, swelling of hands or feet, blue/grey skin, heart palpitations, swelling of face, eyes, lips, or tongue; or if difficulty swallowing or breathing occurs. Persistent dry cough may occur and may not subside until medication is discontinued. Consult health care professional if cough becomes bothersome. Also notify health care professional if nausea, vomiting, or diarrhea occurs and continues.

Advises women of childbearing age to use contraception and notify health care professional of pregnancy planned or suspected.

Emphasize the importance of follow-up examinations to evaluate effectiveness of medication.

Hypertension: Encourage patient to comply with additional interventions for hypertension (weight reduction, low sodium diet, discontinuation of smoking, moderation of alcohol consumption, regular exercise, and stress management). Medication controls but does not cure hypertension.

Instruct patient and family on correct technique for monitoring BP. Advise them to check BP at least weekly and to report significant changes to health care professional.

Evaluation/Desired Outcomes

Decrease in BP without appearance of excessive side effects.

Decrease in signs and symptoms of heart failure.

Why was this drug prescribed for your patient?