ENALAPRIL

Class: Angiotensin-Converting Enzyme (ACE) Inhibitor

Indications: Treatment of hypertension; treatment of symptomatic heart failure; treatment of asymptomatic left ventricular dysfunction

Unlabeled : To delay the progression of nephropathy and reduce risks of cardiovascular events in hypertensive patients with type 1 or 2 diabetes mellitus; hypertensive crisis, diabetic nephropathy, hypertension secondary to scleroderma renal crisis, diagnosis of aldosteronism, idiopathic edema, Bartter's syndrome, postmyocardial infarction for prevention of ventricular failure

Dosage:

-**Asymptomatic left ventricular dysfunction:** Oral: 2.5 mg twice daily, titrated as tolerated to 20 mg/day

-**Heart failure:** Oral: Initial: 2.5 mg once or twice daily (usual range: 5-40 mg/day in 2 divided doses); titrate slowly at 1- to 2-week intervals. Target dose: 10-20 mg twice daily (ACC/AHA 2009 Heart Failure Guidelines)

-**Hypertension:** Oral: 2.5-5 mg/day then increase as required, usually at 1- to 2-week intervals; usual dose range (JNC 7): 2.5-40 mg/day in 1-2 divided doses. **Note:** Initiate with 2.5 mg if patient is taking a diuretic which cannot be discontinued. May add a diuretic if blood pressure cannot be controlled with enalapril alone.

-Conversion from I.V. **enalaprilat** to oral **enalapril** therapy: If not concurrently receiving diuretics, initiate enalapril 5 mg once daily; if concurrently receiving diuretics and responding to enalaprilat 0.625 mg I.V. every 6 hours, initiate with enalapril 2.5 mg once daily; subsequent titration as needed.

Renal Impairment:

-Manufacturer's recommendations:

-Cl_{cr} >30 mL/minute: No dosage adjustment necessary

-Cl_{cr} ≤30 mL/minute: Administer 2.5 mg day; titrated upward until blood pressure is controlled.

-Heart failure patients with sodium <130 mEq/L or serum creatinine >1.6 mg/dL: Initiate dosage with 2.5 mg/day, increasing to twice daily as needed. Increase further in increments of 2.5 mg/dose at >4-day intervals to a maximum daily dose of 40 mg.

-Intermittent hemodialysis (IHD): Moderately dialyzable (20% to 50%): Initial: 2.5 mg on dialysis days; adjust dose on nondialysis days depending on blood pressure response.

-Conversion from I.V. **enalaprilat** to oral **enalapril** therapy:

-Cl_{cr} >30 mL/minute: May initiate enalapril 5 mg once daily.

-Cl_{cr} ≤30 mL/minute: May initiate enalapril 2.5 mg once daily.

Alternate recommendations (Aronoff, 2007):

Cl_{cr} >50 mL/minute: No dosage adjustment necessary

Cl_{cr} 10-50 mL/minute: Administer 75% to 100% of usual dose

Cl_{cr} <10 mL/minute: Administer 50% of usual dose

Peritoneal dialysis: Supplemental dose is not necessary, although some removal of drug occurs.

Hepatic Impairment:

Hydrolysis of enalapril to enalaprilat may be delayed and/or impaired in patients with severe hepatic impairment, but the pharmacodynamic effects of the drug do not appear to be significantly altered. No dosage adjustment is necessary.

Available dosage form in the hospital: 5MG TAB, 10MG TAB, 20MG TAB

Common side effect 1% to 10%: Cardiovascular: Hypotension (1% to 7%), chest pain (2%), syncope (≤2%), orthostasis (2%), orthostatic hypotension (2%)

Central nervous system: Headache (2% to 5%), dizziness (4% to 8%), fatigue (2% to 3%) , Dermatologic: Rash (2%) , Gastrointestinal: Abnormal taste, abdominal pain, vomiting, nausea, diarrhea, anorexia, constipation , Neuromuscular & skeletal: Weakness , Renal: Serum creatinine increased (≤20%), worsening of renal function (in patients with bilateral renal artery stenosis or hypovolemia)

Pregnancy Risk Factor: D