bisoprolol (bih-oh-proe-lol)

Zebeta

Classification
Therapeutic: antihypertensives
Pharmacologic: beta blockers

Pregnancy Category C

Indications
Management of hypertension.

Action
Blocks stimulation of beta1(myocardial)-adrenergic receptors. Does not usually affect beta2(pulmonary, vascular, uterine)-receptor sites. Therapeutic Effects: Decreased BP and heart rate.

Pharmacokinetics
Absorption: Well absorbed after oral administration, but 20% undergoes first-pass hepatic metabolism.
Distribution: Unknown.
Metabolism and Excretion: 50% excreted unchanged by the kidneys; remainder excreted as metabolites; 2% excreted in feces.
Half-life: 9–12 hr.

TIME/ACTION PROFILE (antihypertensive effect)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tr>
<td>PO</td>
<td>unknown</td>
<td>1–4 hr</td>
<td>24 hr</td>
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Contraindications/Precautions
Contraindicated in: Uncompensated HF; Pulmonary edema; Cardiogenic shock; Bradycardia or heart block.
Use Cautiously in: Renal impairment (dosage p recommended); Hepatic impairment (dosage p recommended); Pulmonary disease (including asthma); Patients with a history of severe allergic reactions (intensity of reactions may be greater); OB, Lactation, Pedi: Safety not established; crosses the placenta and may cause fetal/neonatal bradycardia, hypotension, or respiratory depression; Geri: sensitivity to beta blockers; initial dosage p recommended.

Adverse Reactions/Side Effects
CNS: fatigue, weakness, anxiety, depression, dizziness, drowsiness, insomnia.
EENT: blurry vision, nasal congestion.
Resp: bronchospasm, wheezing.
CV: BRADYCARDIA, HF, PULMONARY EDEMA, hypotension, peripheral vasoconstriction.
GI: constipation, diarrhea.
Musculoskeletal: joint pain, muscle cramps.
Neuro: drug-induced lupus syndrome.
GU: erectile dysfunction, libido, urinary frequency.
Derm: rash.
Endo: hyperglycemia, hypoglycemia.
MS: arthralgia, back pain.
Misc: drug-induced lupus syndrome.

Interactions
Drug-Drug: General anesthetics, IV phenytoin, and verapamil may cause additive myocardial depression. Additives cardiopulmonary depressants (digoxin, digoxin, verapamil, or clonidine) may further depress myocardial function or may decrease blood pressure. Additive hypotension may occur with other antihypertensives, acute ingestion of alcohol, or nitrates. Concurrent use with amphetamines, cocaine, epinephrine, isoproterenol, phentolamine, or pseudoephedrine may result in unopposed alpha-adrenergic stimulation (cause hypertension, headache). Concurrent oral hypoglycemic agents, insulin: May alter the effectiveness of insulin or oral hypoglycemic agents (dose adjustments may be necessary). May decrease the effectiveness of theophylline. May increase the hypertensive effects of dopamine or dobutamine. Use cautiously within 14 days of MAO inhibitor therapy (may result in hypertension).

Route/Dosage
PO (Adults): 5 mg once daily, may be titrated q2–4 times daily (range 2.5–20 mg/day).
Renal Impairment
Hepatic Impairment
PO (Adults): CCr < 40 mL/min—initiate therapy with 2.5 mg/day, titrate cautiously.

Pharmaceutical
CAPITALS indicate life-threatening; underlines indicate most frequent; strikethrough = discontinued.
NURSING IMPLICATIONS

Assessment
- Monitor BP, ECG, and pulse frequently during dosage adjustment period and periodically throughout therapy.
- Monitor intake and output ratios and daily weights. Assess routinely for signs and symptoms of HF (dyspnea, rales/crackles, weight gain, peripheral edema, jugular venous distention).
- Monitor frequency of prescription refills to determine adherence.
- Lab Test Considerations: May cause increased BUN, serum lipoprotein, potassium, uric acid, triglyceride levels.
- May cause increased ANA titers.
- May cause increase in blood glucose levels.

Potential Nursing Diagnoses
- Decreased Cardiac output (Side Effects: Noncompliance - Patient/Family Teaching)

Implementation
- Do not confuse Zebeta with Diabeta or Zetia.
- PO: Take apical pulse before administering; if <50 bpm or if arrhythmia occurs, withhold medication and notify physician or other health care professional.
- May be administered without regard to meals.

Patient/Family Teaching
- Instruct patient to take medication exactly as directed, at the same time each day; even if feeling well, do not skip or double up on missed doses. If a dose is missed, it should be taken as soon as possible up to 4 hr before next dose. Abrupt withdrawal may precipitate life-threatening arrhythmias, hypertension, or myocardial ischemia.
- Teach patient and family how to check pulse and BP; instruct them to check pulse daily and BP biweekly and to report significant changes to health care professional.
- May cause drowsiness. Caution patients to avoid driving or other activities that require alertness until response to the drug is known.
- Advise patients to change positions slowly to minimize orthostatic hypotension.
- Caution patient that this medication may increase sensitivity to cold.
- Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and to consult health care professional before taking any Rx, OTC, or herbal products, especially cold preparations, concurrently with this medication. Patients on antihypertensive therapy should also avoid excessive amounts of coffee, tea, and cola.
- Statins should be closely monitored blood glucose, especially if weakness, malaise, tremor, lethargy, or fatigue occurs. Medication does not block dizziness or sweating as signs of hypoglycemia.
- Advise patient to notify health care professional if slow pulse, difficulty breathing, wheezing, cold hands and feet, dizziness, light-headedness, confusion, depression, rash, fever, sore throat, unusual bleeding, or bruising occurs.
- Instruct patient to inform health care professional of medication regimen before treatment or surgery.
- Advise patient to carry identification describing disease process and medication regimen at all times.
- Hypertension: Reinforce the need to continue additional therapies for hypertension (weight loss, sodium restriction, stress reduction, regular exercise, moderation of alcohol consumption, and smoking cessation). Medication controls but does not cure hypertension.

Evaluation/Desired Outcomes
- Decrease in BP

Why was this drug prescribed for your patient?