**betaxolol** (be-tax-oh-lol)

**Therapeutic:** antihypertensives  
**Pharmacologic:** beta blockers

**Pregnancy Category:** C

**Indications**

Management of hypertension.

**Action**

Block stimulation of beta (myocardial) adrenergic receptors. Does not usually affect beta, (pulmonary, vascular, uterine) receptor sites. Therapeutic Effects: Decreased BP and heart rate.

**Pharmacokinetics**

Absorption: Well absorbed after oral administration.  
Distribution: Widely distributed.  
Metabolism and Excretion: Mostly metabolized by the liver, 20% excreted unchanged by the kidneys.  
Half-life: 15–20 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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<tbody>
<tr>
<td>PO</td>
<td>3–4 hr</td>
<td>3–4 hr</td>
<td>24 hr</td>
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</table>

**Contraindications/Precautions**

Contraindicated in: Uncompensated HF; Pulmonary edema; Cardiogenic shock; Bradycardia or heart block. Use Cautiously in: Renal or hepatic impairment; Pulmonary disease (including asthma); beta1 selectivity may be lost at higher doses; avoid use if possible; Diabetes mellitus; Thyrotoxicosis; History of severe allergic reactions (anaphylaxis); renal or hepatic impairment; Start with lower doses in geriatric patients or patients with renal impairment.

**Adverse Reactions/Side Effects**

CNS: Fatigue, weakness, anxiety, depression, dizziness, drowsiness, insomnia, memory loss, nightmares.  
EENT: Blurred vision, stuffy nose.  
Resp: Bronchospasm, wheezing.  
CV: Bradycardia, HF, pulmonary edema, hypotension, peripheral vasoconstriction, MI, stroke, chest pain, diarrhea, nausea, vomiting, GI; sudden fluctuations, akathisia, tachycardia, orthostatic hypotension.  
GI: Nausea, vomiting, constipation.  
GU: Impotence, libido, urinary frequency.  
Derm: Rash.  
Endo: Hyperglycemia, hypoglycemia.  
MS: Arthritis, back pain, joint pain.  
Misc: Drug-induced lupus syndrome.  

**Interactions**

**Drug-Drug:** General anesthetics, IV phenytoin, and verapamil may cause additive myocardial depression. Additive bradycardia may occur with digoxin, verapamil, or dilatiazem. Additive hypotension may occur with other antihypertensives, acute ingestion of alcohol, or minocycline. Concurrent use with amphetamines, cocaine, epinephrine, norepinephrine, phenylephrine, or pseudoephedrine may result in unopposed alpha- and beta-adrenergic stimulation (excessive hypotension, bradycardia). Concurrent thyroid preparation administration may affect effectiveness. May alter the effectiveness of insulin or oral hypoglycemic agents (dose adjustments may be necessary). May alter the effectiveness of dopaminergic agents. Use cautiously within 14 days of MAO inhibitor therapy (may result in hypertensive crisis).  

**Route/Dosage**

**PO (Adults):** 10 mg once daily, may be titrated to 20 mg after 7 days, start with 5 mg in geriatric patients or patients with renal impairment.

**Renal Impairment**

**PO (Adults):** Start with 5 mg once daily.

**NURSING IMPLICATIONS**

**Assessment**

- Monitor BP, ECG, and pulse frequently during dose adjustment and periodically during 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).

**Potential Nursing Diagnoses**

- Risk for Ineffective Airway Clearance related to dyspnea (p. 586)
- Risk for Decreased Cardiac Output related to congestive heart failure (p. 586)
- Risk for Impaired Physical Mobility related to edema (p. 586)
- Risk for Injury related to HF (p. 586)

**Implementation**

- Use cautiously in patients at risk for HF. Start with a low dose and titrate as tolerated.  
- Start therapy with beta blockers only after other antihypertensive measures have been used.  
- Monitor for adverse reactions, especially those associated with cardiac function (hypotension, bradycardia, HF).  
- Use with caution in patients with diabetes mellitus.  
- Use with caution in patients with renal or hepatic impairment.

**Patient/Family Teaching**

- Instruct patient to take medication as directed.  
- May cause fatigue, dizziness, or drowsiness.  
- May cause styes or dry eyes.  
- May cause retrograde ejaculation in men.  
- May cause impotence or decreased libido.  
- May cause nausea and vomiting.  
- May cause constipation.  
- May cause dizziness, lightheadedness, or hypotension with sudden change in position.  
- May cause headache or nervousness.  
- May cause tinnitus or ringing in ears.  
- May cause taste change.  
- May cause sneezing.  
- May cause respiratory symptoms.  
- May cause rash or Steven Johnson syndrome.  
- May cause fever, chills, rash, or fever.  
- May cause pruritus.  
- May cause liver problems.  
- May cause liver failure.  
- May cause liver damage.  
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**Angina:** Assess frequency and characteristics of angina periodically during therapy.

**Lab Test Considerations:** May cause:
- BUN, serum lipoprotein, potassium, triglyceride and uric acid levels.
- May cause ↑ WBC.
- May cause ↑ glucose levels.

**Toxicity and Overdose:** Monitor patients receiving beta blockers for signs of overdose (bradycardia, severe dizziness or fainting, severe disorientation, dyspnea, bluish fingernails or palms, seizures). Notify health care professional immediately if these signs occur.

**Glucagon** has been used to treat bradycardia and hypotension.

**Potential Nursing Diagnoses**
- Decreased cardiac output (Side Effects)
- Noncompliance (Patient/Family Teaching)

**Implementation**
- **PO:** Take apical pulse before administering. If ≤50 bpm or if arrhythmia occurs, withhold medication and notify health care professional.
- May be administered without regard to food.

**Patient/Family Teaching**
- Instruct patient to take medication as directed, at the same time each day, even if feeling well; do not skip or double up on missed doses. Take missed doses as soon as possible up to 4 hr before next dose. Abrupt withdrawal may precipitate life-threatening arrhythmias, hypertension, or myocardial ischemia.
- Advise patient to make sure enough medication is available for weekends, holidays, and vacations. A written prescription may be kept in wallet in case of emergency.
- Teach patient and family how to check pulse and BP. Instruct them to check pulse daily and BP biweekly and to report significant changes.
- May cause drowsiness or dizziness. Caution patients to avoid driving or other activities that require alertness until response to the drug is known.
- Advise patient to change positions slowly to minimize orthostatic hypotension.
- Caution patient that the medication may increase sensitivity to cold.
- Instruct patient to notify health care professional if slow pulse, difficulty breathing, wheezing, cold hands and feet, dizziness, confusion, 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 without appearance of detrimental side effects.
- Why was this drug prescribed for your patient?