

## Anti-Hypertensive Drugs

Class of drug	Action	Side Effects	Nursing Implications
<b>Diuretics</b>	See diuretic chart	See diuretic chart	See diuretic chart
<p style="text-align: center;"><b>Beta blockers</b></p> <p style="text-align: center;">Selective Tenormin, Lopressor</p> <p style="text-align: center;">&amp;</p> <p style="text-align: center;">Non-selective Inderal, Corgard</p>	<ul style="list-style-type: none"> <li>- Slight increase in cardiac contractility</li> <li>- Increased renin release leads to decreased production of angiotensin II &amp; decreased release of aldosterone .</li> <li>Result is decreased renal Na &amp; water retention</li> <li>- Inhibits NE binding to receptor upon SNS stimulation leads to decreased heart rate</li> </ul>	<ul style="list-style-type: none"> <li>- Sleep disturbance</li> <li>- Fatigue</li> <li>- Cold extremities</li> <li>- Paresthesia</li> <li>- Bronchospasm w/ beta2 blockers or large doses of beta1 blockers</li> <li>- <b>Depressed mood (beta-blocker blues)</b></li> <li>- Sexual dysfunction</li> </ul>	<ul style="list-style-type: none"> <li>- Risk of rx w/ allergen tx</li> <li>- <b>Take apical pulse prior</b> - Assess for depression</li> <li>- <b>Caution hypoglycemia in diabetics-masks Sx</b></li> <li>- <b>Don't stop abruptly:</b> results in sudden, severe sympathetic overstimulation leads to tachycardia, angina, MI</li> <li>- Thrombocytopenia-teach S/Sx</li> <li>- Agranulocytosis-teach S/Sx</li> <li>- Caution w/ asthma, emphysema pts</li> </ul> <p><u>Contraindicated:</u> severe CHF; diabetes mellitus (esp. severe, poorly controlled and/or insulin-dependent)</p> <p><u>Interactions:</u> cocaine, sympathomimetic agents, theophylline</p>
<p style="text-align: center;"><b>Ca+ channel blockers</b></p> <p><u>Nondihidropyridines:</u> verapamil (Isoptin, Calan) diltiazem (Cardizem)</p> <p><u>dihidropyridines:</u> nifedipine (Adalat, Procard)</p>	<ul style="list-style-type: none"> <li>- Blocks Ca influx into cardiac &amp; smooth muscle cells so decreased contractility &amp; vasoconstriction (dilates coronary arteries &amp; arterioles)</li> </ul> <p><u>Nondihidropyridines:</u> decr. heart rate, contractility, afterload</p> <ul style="list-style-type: none"> <li>- Used alone for antianginal effects or as adjunct to nitrates to block/reduce reflex tachycardia caused by nitrate</li> <li>- Particularly good at decreasing vasospasm since blocks vascular smooth muscle cell Ca influx</li> <li>- Do not use w/ beta-blockers; <b>cardiac depressant</b></li> </ul> <p><u>Dihidropyridines:</u></p> <ul style="list-style-type: none"> <li>- Vasodilates but has <b>NO</b> cardiac-depressant actions</li> </ul>	<ul style="list-style-type: none"> <li>- Headache, dizziness</li> <li>- <b>Edema</b></li> <li>- <b>Constipation</b></li> <li>- Bradycardia</li> <li>- Orthostatic hypotension</li> </ul> <p>- Reflex tachycardia common w/ dihidropyridines because drug has no cardiac depressant effects of its own</p>	<ul style="list-style-type: none"> <li>- Take med at night</li> <li>- Rise slowly from sitting/lying position</li> <li>- Wear support stockings</li> <li>- Avoid hot baths or showers</li> <li>- Avoid alcohol use</li> <li>- Avoid dehydration</li> <li>- Teach report Sx of agranulocytosis</li> <li>- Manage constipation w/o meds; incr. fiber &amp; fluids</li> </ul>
<b>ACE inhibitors</b>  Catopril, enalapril, lisinopril	<ul style="list-style-type: none"> <li>- Inhibits renin-angio system -blocks ACE</li> <li>- Inhibits breakdown of bradykinin, a vasodilator</li> </ul> <p>- <b>Used as preferred antihypertensive for pts w/ CHF &amp; diabetes because protects kidneys</b></p>	<ul style="list-style-type: none"> <li>- <b>Hyperkalemia</b></li> <li>- Cough</li> <li>- Chest pain, palpation</li> <li>- Tachycardia</li> <li>- Hypotension</li> <li>- Neutropenia</li> <li>- Agranulocytosis</li> </ul>	<ul style="list-style-type: none"> <li>- Use Stage 2-3</li> <li>- Use if kidney problems</li> <li>- Monitor CBC; K levels</li> <li>- Assess S/Sx of infection</li> <li>- Do not abruptly stop</li> <li>- Avoid OTC meds-NSAIDS</li> <li>- Hypotension enhanced by: diuretics, alcohol, β-blockers</li> <li>- NSAIDS can cause Na retention</li> <li>- <b>Teach about avoiding high K foods</b></li> </ul> <p><u>Contraindicated:</u> Pregnancy</p>

Class of drug	Action	Side Effects	Nursing Implications
<p><b>ARB's</b></p> <p>Losartan, valsartan</p>	<ul style="list-style-type: none"> <li>- Does NOT inhibit ACE</li> <li>- Inhibits renin-angio system-block receptors</li> <li>- Decr. peripheral vascular resistance</li> </ul>	<ul style="list-style-type: none"> <li>- Dizziness w/ 1<sup>st</sup> dose</li> <li>- Headache</li> <li>- Backpain</li> <li>- Diarrhea</li> <li>- Fatigue</li> <li>- Nasal congestion</li> </ul>	<ul style="list-style-type: none"> <li>- <b>No cough</b></li> </ul> <p><u>Contraindicated:</u> Pregnancy</p>
<p><b>Alpha adrenergic agents</b></p>			
<p><b>Alpha agonists</b></p> <p>Clonidine, Catapres, Aldamet</p>	<ul style="list-style-type: none"> <li>- Acts as alpha-agonist in cardiovascular control centers of brain to decrease sympathetic outflow. Leads to decreased cardiac contractility, decreased vasoconstriction</li> </ul>	<ul style="list-style-type: none"> <li>- Dizziness, drowsiness</li> <li>- Orthostatic hypotension</li> <li>- <b>Do not abruptly stop-severe rebound hypertension</b></li> </ul>	<ul style="list-style-type: none"> <li>- Use stage 3-4</li> <li>- Teach to manage orthostatic hypo—rise slowly</li> <li>- Monitor pulse-RRQ</li> <li>- Teach pt that drowsiness effect will diminish over 4-6 wks</li> </ul>
<p><b>Alpha-1 blockers</b></p> <p>Hytrin, Cardura, Minipress</p>	<ul style="list-style-type: none"> <li>- Blocks sympathomimetic-induced vasoconstriction in/at the arterioles</li> </ul>	<ul style="list-style-type: none"> <li>- Dizziness, blurred vision</li> <li>- <b>First dose syncope</b>= orthostatic hypotension-esp at beginning of therapy</li> <li>- Decr. pressure on urethra-(Hytrin, Cardura)</li> <li>- Nasal congestion</li> <li>- Sexual dysfunction</li> <li>- Edema</li> </ul>	<ul style="list-style-type: none"> <li>- Use stage 3-4</li> <li>- Teach to manage orthostatic hypo—rise slowly</li> <li>- Avoid driving until CNS effects known</li> <li>- Monitor pulse-RRQ</li> <li>- Used for benign prostate hypertrophy (Hytrin, Cardura)</li> </ul>
<p><b>Direct vasodilating agents</b></p> <p>Nitroprusside</p>	<ul style="list-style-type: none"> <li>- Dilates arteries</li> <li>- Decr. peripheral vascular resistance</li> </ul>	<ul style="list-style-type: none"> <li>- Headache</li> <li>- Edema</li> <li>- Rebound hypertension</li> <li>- N/V, abdominal pain</li> <li>- Cyanide toxicity</li> </ul>	<ul style="list-style-type: none"> <li>- Use stage 4 or hypertensive crisis</li> <li>- VS q5-15 min</li> <li>- Titrate dose to BP</li> <li>- Do not mix, <b>Keep Nipride from light</b>-keep bag &amp; tubing covered w/ foil</li> <li>- <b>APRESOLINE-slow IV push-3-5 min</b></li> <li>- Watch for S/Sx of cyanide toxicity</li> </ul>