# Anti-Hypertensive Drugs

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<th>Class of Drug</th>
<th>Action</th>
<th>Side Effects</th>
<th>Nursing Implications</th>
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<td><strong>Diuretics</strong></td>
<td>See diuretic chart</td>
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| **Beta blockers** | - Slight increase in cardiac contractility  
- Increased renin release leads to decreased production of angiotensin II & decreased release of aldosterone. Result is decreased renal Na & water retention  
- Inhibits NE binding to receptor upon SNS stimulation leads to decreased heart rate | - Sleep disturbance  
- Fatigue  
- Cold extremities  
- Paresthesia  
- Bronchospasm w/ beta2 blockers or large doses of beta1 blockers  
- **Depressed mood** (beta-blocker blues)  
- Sexual dysfunction | - Risk of rx w/ allergen tx  
- **Take apical pulse prior** - Assess for depression  
- **Caution hypoglycemia in diabetics-masks Sx**  
- **Don’t stop abruptly:** results in sudden, severe sympathetic overstimulation leads to tachycardia, angina, MI  
- Thrombocytopenia-teach S/Sx  
- Agranulocytosis-teach S/Sx  
- Caution w/ asthma, emphysema pts  
**Contraindicated:** severe CHF; diabetes mellitus (esp. severe, poorly controlled and/or insulin-dependent)  
**Interactions:** cocaine, sympathomimetic agents, theophylline |
| **Ca+ channel blockers** | - Blocks Ca influx into cardiac & smooth muscle cells so decreased contractility & vasoconstriction (dilates coronary arteries & arterioles)  
**Nondihydropyridines:**  
verapamil (Isoptin, Calan)  
diltiazem (Cardizem)  
**Dihydropyridines:**  
nifedipine (Adalat, Procard)  
- Used alone for antianginal effects or as adjunct to nitrates to block/reduce reflex tachycardia caused by nitrates  
- Particularly good at decreasing vasospasm since blocks vascular smooth muscle cell Ca influx  
- Do not use w/ beta-blockers; **cardiac depressant**  
**Dihydropyridines:**  
- Vasodilates but has NO cardiac-depressant actions | - Headache, dizziness  
- **Edema**  
- **Constipation**  
- Bradycardia  
- Orthostatic hypotension  
- Reflex tachycardia common w/ dihydropyridines because drug has no cardiac depressant effects of its own | - Take med at night  
- Rise slowly from sitting/lying position  
- Wear support stockings  
- Avoid hot baths or showers  
- Avoid alcohol use  
- Avoid dehydration  
- Teach report Sx of agranulocytosis  
- Manage constipation w/o meds; incr. fiber & fluids |
| **ACE inhibitors** | - Inhibits renin-angio system-blocks ACE  
- Inhibits breakdown of bradykinin, a vasodilator  
- Used as preferred antihypertensive for pts w/ CHF & diabetes because protects kidneys | - Hyperkalemia  
- Cough  
- Chest pain, palpation  
- Tachycardia  
- Hypotension  
- Neutropenia  
- Agranulocytosis | - Use Stage 2-3  
- Use if kidney problems  
- Monitor CBC; K levels  
- Assess S/Sx of infection  
- Do not abruptly stop  
- Avoid OTC meds-NSAIDS  
- Hypotension enhanced by: diuretics, alcohol, β-blockers  
- NSAIDS can cause Na retention  
- **Teach about avoiding high K foods**  
**Contraindicated:** Pregnancy |
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| **ARB’s**             | - Does NOT inhibit ACE  
- Inhibits renin-angio system-block receptors  
- Decr. peripheral vascular resistance | - Dizziness w/ 1st dose  
- Headache  
- Backpain  
- Diarrhea  
- Fatigue  
- Nasal congestion | - No cough  
Contraindicated: Pregnancy |
| Losartan, valsartan   |                                                                        |                                                                               |                                                           |
| Alpha adrenergic agents|                                                                        |                                                                               |                                                           |
| **Alpha agonists**    | - Acts as alpha-agonist in cardiovascular control centers of brain to decrease sympathetic outflow. Leads to decreased cardiac contractility, decreased vasoconstriction | - Dizziness, drowsiness  
- Orthostatic hypotension  
- **Do not abruptly stop-severe rebound hypertension** | - Use stage 3-4  
- Teach to manage orthostatic hypo—rise slowly  
- Monitor pulse-RRQ  
- Teach pt that drowsiness effect will diminish over 4-6 wks |
| Clonidine, Catapres, Aldomet |                                                                      |                                                                               |                                                           |
| **Alpha-1 blockers**  | - Blocks sympathomimetic-induced vasoconstriction in/at the arterioles  | - Dizziness, blurred vision  
- **First dose syncope**=orthostatic hypotension-esp at beginning of therapy  
- Decr. pressure on urethra-(Hytrin, Cardura)  
- Nasal congestion  
- Sexual dysfunction  
- Edema | - Use stage 3-4  
- Teach to manage orthostatic hypo—rise slowly  
- Avoid driving until CNS effects known  
- Monitor pulse-RRQ  
- Used for benign prostate hypertrophy (Hytrin, Cardura) |
| Hytrin, Cardura, Minipress |                                                                      |                                                                               |                                                           |
| Direct vasodilating agents | - Dilates arteries  
- Decr. peripheral vascular resistance | - Headache  
- Edema  
- Rebound hypertension  
- N/V, abdominal pain  
- Cyanide toxicity | - Use stage 4 or hypertensive crisis  
- VS q5-15 min  
- Titrate dose to BP  
- Do not mix, Keep Nipride from light-keep bag & tubing covered w/ foil  
- **APRESOLINE**—slow IV push-3-5 min  
- Watch for S/Sx of cyanide toxicity |
| Nitroprusside |                                                                      |                                                                               |                                                           |