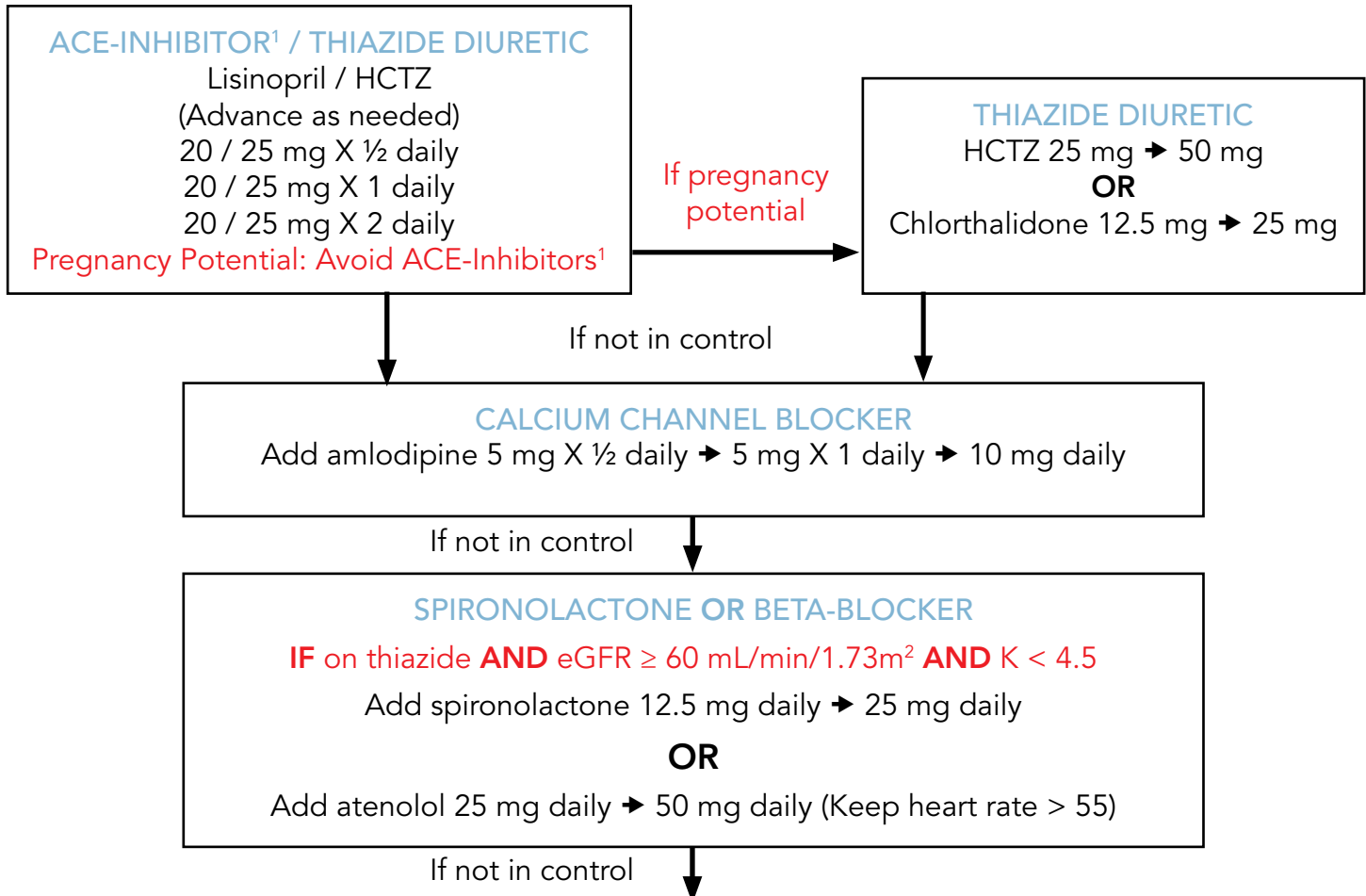


Adult Hypertension

BLOOD PRESSURE (BP) GOAL

≤ 139 / 89 mm Hg – All Adult Hypertension

NNT CVA² = 63
NNT MI² = 86
NNT CVA or MI² = 36



- Consider medication non-adherence.
- Consider interfering agents (e.g., NSAIDs, excess alcohol).
- Consider white coat effect. Consider BP checks by medical assistant (e.g., two checks with 2 readings each, 1 week apart).
- Consider discontinuing lisinopril / HCTZ and changing to chlorthalidone 25 mg plus lisinopril 40 mg daily. Consider additional agents (hydralazine, terazosin, reserpine, minoxidil).
- Consider stopping atenolol and adding diltiazem to amlodipine, keeping heart rate > 55.
- **Avoid using clonidine, verapamil, or diltiazem together with a beta blocker. These heart-rate slowing drug combinations may cause symptomatic bradycardia over time.**
- Consider secondary etiologies.
- Consider consultation with a hypertension specialist.

1. ACE-Inhibitors are contraindicated in pregnancy and not recommended in most child-bearing age women.
2. NNT = number needed to treat to prevent one event, maintaining hypertension control for at least 5 years.

- Medication up-titrations are recommended at 2-4 week intervals (for most patients) until control is achieved. Consider follow-up labs when up-titrating or adding lisinopril/HCTZ, chlorthalidone, HCTZ, or spironolactone.
- Use lipid lowering therapy according to Dyslipidemia Management in Adults guideline: <http://cl.kp.org/pkc/national/cmi/programs/dyslipidemia/guideline/index.html>
- If pregnant, refer to OB/GYN for hypertension management. If on ACE-Is or ARBs, discontinue immediately.

LIFESTYLE CHANGES ARE RECOMMENDED FOR ALL PATIENTS:

- ◆ DASH diet.
- ◆ Sodium restriction (≤ 2.4 gm sodium daily).
- ◆ Weight reduction if BMI ≥ 25 kg/m².
- ◆ Exercise at a moderate pace to achieve 150 mins / week (i.e., 30 min / 5 days/wk).
- ◆ Limit daily alcohol to no more than 1 drink (women) or 2 drinks (men).
- ◆ Smoking cessation is strongly recommended; counsel tobacco users on the health risks of smoking, and the benefits of quitting.

RECOMMENDATIONS FOR PATIENTS WITH ACE-I INTOLERANCE:

1. HCTZ 25 mg, then 50 mg to achieve BP goal.
2. Add losartan 25 mg, then 50 mg, then 100 mg to achieve BP goal.
3. Add amlodopine 2.5 mg, then 5 mg, then 10 mg to achieve BP goal.

Table 2: Dosage Range for Selected Antihypertensive Medications¹

| DRUG CLASS | GENERIC (OTHER NAMES) | USUAL DOSAGE RANGE |
|--|---|---|
| ACE-I-THIAZIDE COMBINATION PILL | Lisinopril/HCTZ (Prinzide [®]) | 10/12.5 mg daily 20/25 mg twice daily |
| THIAZIDE-TYPE DIURETICS | Hydrochlorothiazide [HCTZ], (Esidrix [®]) | 25 - 50 mg daily |
| THIAZIDE-TYPE DIURETICS | Chlorthalidone (Hygroton [®]) | 12.5 - 25 mg daily |
| THIAZIDE-TYPE DIURETICS | Indapamide (Lozol [®]) | 1.25 - 2.5 mg daily |
| ACE INHIBITORS (ACE-I) | Lisinopril (Zestril, Prinivil [®]) | 10 - 40 mg daily |
| ACE INHIBITORS (ACE-I) | Captopril (Capoten [®]) | 25 - 50 mg twice daily |
| ACE INHIBITORS (ACE-I) | Benazepril (Lotensin [®]) | 10 - 40 mg daily |
| ANGIOTENSIN II RECEPTOR BLOCKER (ARB) | Losartan (Cozaar [®]) | 25 - 100 mg daily |
| LONG-ACTING DIHYDROPYRIDINE CALCIUM CHANNEL BLOCKERS (CCB) | Amlodopine (Norvasc [®]) | 2.5 - 10 mg daily |
| LONG-ACTING DIHYDROPYRIDINE CALCIUM CHANNEL BLOCKERS (CCB) | Nifedipine ER (Procardia XL [®]) | 30 - 90 mg daily |
| LONG-ACTING DIHYDROPYRIDINE CALCIUM CHANNEL BLOCKERS (CCB) | Felodipine ER (Plendil [®]) | 2.5 - 20 mg daily |
| ALDOSTERONE RECEPTOR BLOCKER | Spironolactone (Aldactone) | 12.5 - 25 mg daily |
| BETA-BLOCKERS (BB) | Atenolol (Tenormin [®]) | 25 - 100 mg total, taken once or twice daily |
| BETA-BLOCKERS (BB) | Metoprolol (Lopressor [®]) | 25 - 100 mg BID |
| BETA-BLOCKERS (BB) | Carvedilol (Coreg [®]) | 3.125 - 25 mg BID |
| BETA-BLOCKERS (BB) | Metoprolol ER (Toprol XL [®]) | 50 - 100 mg daily |
| ACE-I-THIAZIDE COMBINATION PILL | Spironolactone/HCTZ (Aldactazide [®]) | 25 / 25 mg daily |
| ALPHA BLOCKERS | Terazosin (Hytrin [®]) | 1 - 20 mg daily |
| ALPHA BLOCKERS | Doxazosin (Cardura [®]) | 1 - 16 mg daily |
| ALPHA BLOCKERS | Prazosin (Minipress [®]) | 1 - 10 mg BID |
| DIRECT VASODILATORS | Hydralazine (Apresoline [®]) | 25 - 100 mg BID |
| DIRECT VASODILATORS | Minoxidil (Loniten [®]) | 2.5 mg daily - 20 mg BID |
| ALPHA-2 AGONISTS | Clonidine (Catapres [®]) | 0.1 mg HS - 0.4 mg BID |
| PERIPHERAL ADRENERGIC INHIBITOR | Reserpine (Serpalan [®]) | 0.05 - 0.1 mg daily |

¹ Availability of medications may vary depending on regional formularies.