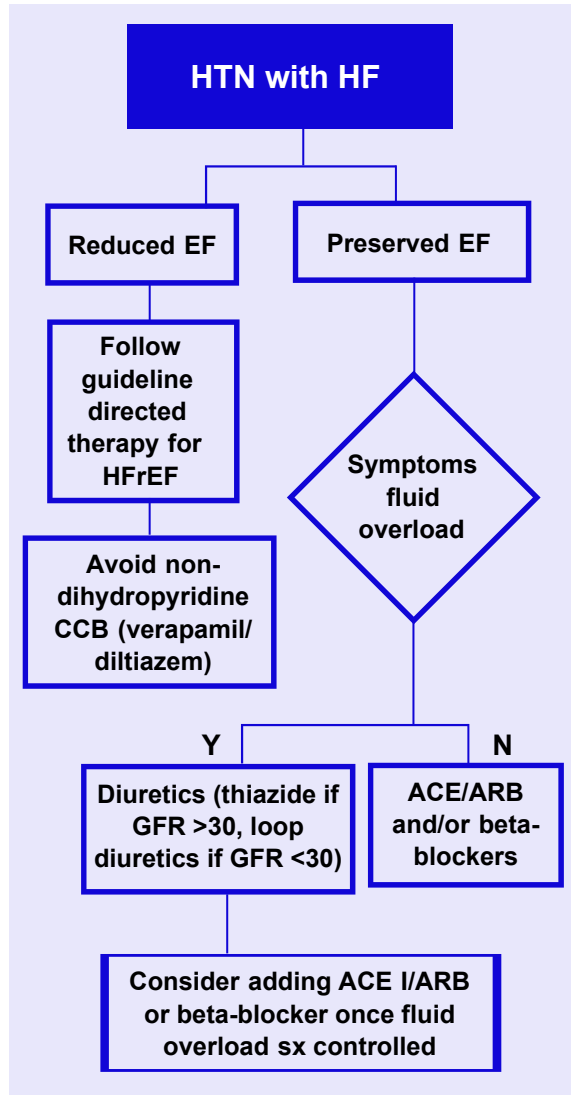
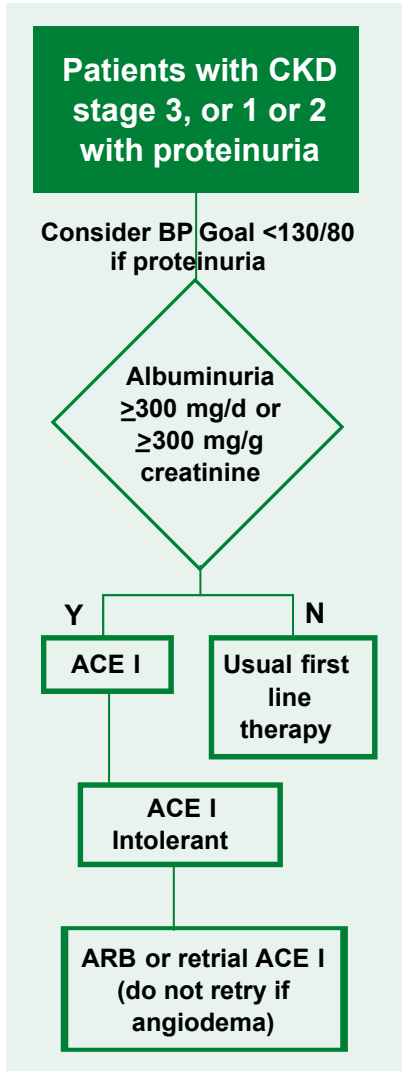
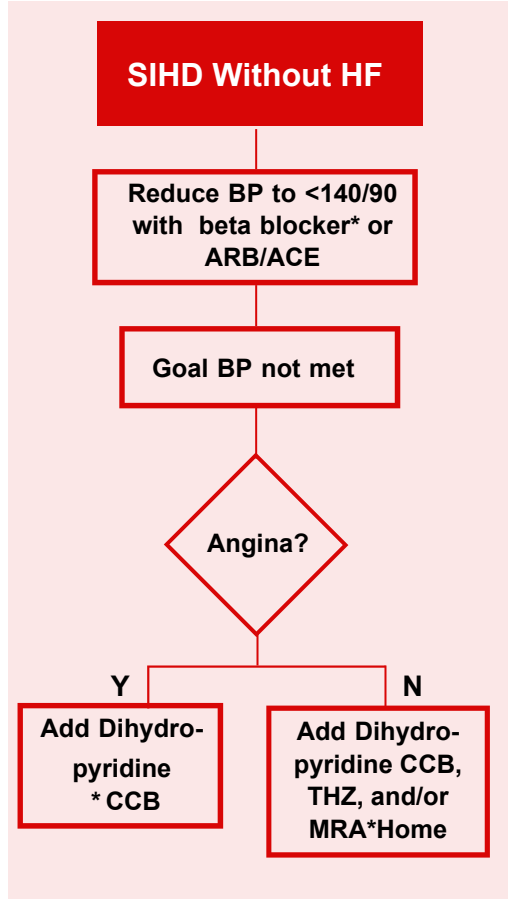
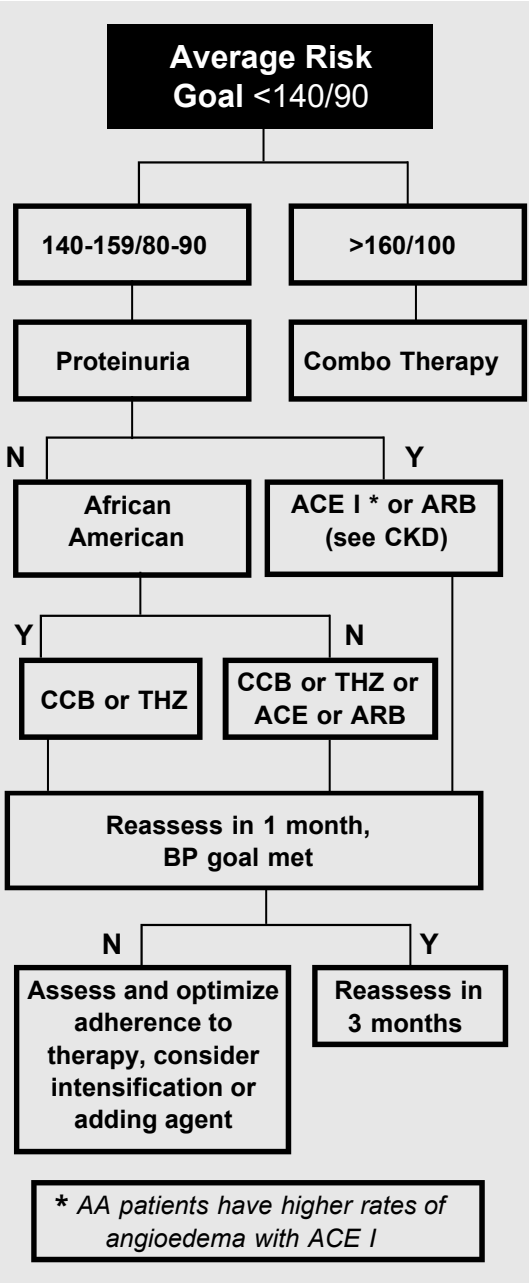


# Hypertension Algorithm



**Initial tests all HTN pts:** CBC, BMP, lipid, TSH, UA, fasting glucose, EKG  
**Optional tests:** uric acid, ECHO, UACr

**CKD:** Chronic Kidney Disease  
**CCB:** Calcium Channel Blocker  
**SIHD:** Stable Ischemic Heart Disease  
**MRA:** Mineralocorticoid Receptor Antagonists

**Outpt Confirmation HTN:**  
**Home BP:** >135/85  
**Ambulatory BP:** >135/85

**Beta-blockers:** Carvedilol, Metoprolol, Propranolol, Bisoprolol, Nadolol, Timolol, (not atenolol) **Dihydro:** Amlodipine, Nifedipine

### When to Think of Secondary Causes

- 3 first line agents max dose, still above goal
  - Abrupt onset
  - HTN <30 years old
  - Sudden worsening
- Disproportionate target organ damage
  - Onset of diastolic HTN >age 65
- Unprovoked or excessive hypokalemia

First Line Drug Class	Dose of Common Meds	Comments
Thiazide	Chlorthalidone 12.5-25 HCTZ 25-50	- Chlorthalidone preferred - Monitor electrolytes - Use with caution in pts with hx acute gout
ACE Inhibitor	Lisinopril 10-40 1x/day Enalapril 5-40 1-2x/day Benazepril 10-40 1-2x/d Captopril 12.5-150 2-3x/d	- Risk for angioedema - Avoid in pregnancy - Monitor K - Check creatinine after starting - Not with ARB
CCB-dihydropyridine	Amlodipine 2.5-10 Nifedipine 30-90	- Avoid use in HFrEF, amlodipine ok if needed - Edema more common in women than men
CCB-non-dihydropyridine	Diltiazem ER 120-360 Verapamil SR 120-360 1-2x day Verapamil ER 100-300 1x	- Avoid in HFrEF - Avoid use with Beta Blockers - Many interactions

Second Line Drug Class	Dose of Common Meds	Comments
Diuretic-aldosterone block	Spironolactone 25-100 1x Eplerenone 50-100 1-2x	- First line for resistant HTN and aldosteronism
Loop diuretics	Furosemide 20-80 2x/day Torsemide 5-10 1x/day	- Preferred if GFR <30 - Preferred in CHF sx
K sparing diuretics	Triamterene 50-100 Amiloride 5-10	- Avoid if GFR <45
Beta-blocker cardio selective	Metop succin 50-200 1x Bisoprolol 2.5-10 1x	- Preferred in HFrEF/IHD Bronchospastic disease
Beta-blocker Alpha-beta	Carvedilol 12.5-50 2x/d Carvedil phos 20-80 1x/d Labetalol 200-800 2x/d	- Carvedilol preferred in HFrEF

Others: **alpha-1 blockers** (ie doxazosin) useful in BPH, **central a2 agonist** (clonidine, methyl dopa) last line in elderly, avoid abrupt stop with clonidine, **Direct vasodilators** (hydralazine, minoxidil) sodium retention and tachycardia use with diuretic and betablocker

Lifestyle Intervention	Dose	Reduction Systolic
Weight Loss	Expect 1 mm/1 kg reduction	-5 (usual)
Dash Diet	--	-11
Reduced Sodium	At least reduce by 1000 mg goal <1500	-5-6
Enhance Potassium Intake	Through diet, aim 3500-5000 mg/d	-4-5
Modify Alcohol Intake	Men ≤ 2 drinks, women ≤ 1 drink	-4 mmhg
Exercise	Aerobic	-5-8 mmhg