Hypertension Management

Therapeutic Lifestyle Changes

First-line Medication Classes*:

Ace Inhibitor: Lisinopril or, if the ACE inhibitor is not tolerated, consider ARB**:** Losartan.

Diuretic: HCTZ, Chlorthalidone

Calcium Channel Blocker: Diltiazem, Amlodipine, Nifedipine

*Consider an ACE Inhibitor or ARB as the initial medication for patients with Chronic Kidney Disease. Do not use an ACE Inhibitor and ARB together in the same patient.

If blood pressure (BP) is not at goal in one month, consider titrating dose up and/or adding medication from a different class above. Utilize these 3 classes before considering additional medication classes.

Consider Additional Medication Classes:

If BP not at goal or unable to tolerate the first-line medication classes above, consider adding medications from additional drug classes. Base the selection on individual patient indications.

Beta Blocker: Metoprolol, Atenolol

Alpha Blocker: Prazosin, Doxazosin

Treat BP to targets as tolerated:

Systolic BP target < 140**

Diastolic BP target < 90

**Individualize BP targets and medication therapy. Patients who are older and/or have significant comorbid conditions and cannot tolerate BP <140/90, may require higher BP targets to prevent adverse effects (e.g. hypotension, fatigue, dizziness).

Antihypertensive Medications

ACE Inhibitors (ACEI) /Angiotensin Receptor Blocker (ARBs) First line medication choice for patients with Chronic Kidney Disease. Can cause increased potassium (K^+) and creatinine; cough (with ACEI) may occur and rarely angioedema. Do not use an ACEI and an ARB at the same time.	
Lisinopril (Prinivil®, Zestril®)	Start 2.5 - 5 mg daily; usually 20 - 40 mg daily; max 80 mg daily
Losartan (Cozaar®)	Start 25 - 50 mg daily; max 100 mg daily. Consider if unable to tolerate ACEI.
Diuretics	
HCTZ	Start 12.5 mg daily; usual dose 25 – 50 mg daily. Can decrease K^+. Higher doses may be used for other indications (e.g. edema).
Chlorthalidone	Start 12.5 mg daily; usually 20 - 50 mg daily. Can decrease K^+. Higher doses may be used for other indications (e.g. edema).

Calcium Channel Blockers	
Amlodipine (Norvasc ®)	Start 2.5 - 5 mg daily; 5 - 10 mg daily. Consider in patients with angina or congestive heart failure (CHF).
Diltiazem CD (Cardizem®)	Note: multiple formulations exist. Immediate Release (TID - QID), SR/Sustained Release (BID), CD/Controlled Delivery (daily), and LA/Long Acting (daily). Consult your local formulary to assure appropriate selection and dosing. For Diltiazem, start 180 - 240 mg daily; usually 240 - 360 mg daily; max dose 480 mg daily.
*Nifedipine XL (Adalat®/ Procardia®)	Start 30 mg daily; usually 30 - 90 mg daily; max dose 120 mg daily. Caution edema, CHF, and MI.
Beta Blockers Don't use if bradycardia or 2nd/3rd degree block. Caution in severe CHF, asthma, or renal dysfunction.	
Atenolol (Tenormin®)	Start 25 - 50 mg daily in 1- 2 divided doses; usually 50-100 mg daily. Eliminated renally (caution with Renal Failure).
Metoprolol (Lopressor®)	Start 50 - 100 mg daily divided in 1-2 doses; usually 100 - 200 mg daily. Max 450 mg daily. **(XR formulation dosed once daily)**. Eliminated hepatically (caution in Liver Failure).
Propranolol (Inderal®)	Start Long Acting 80mg daily or Immediate release 40 mg BID; usually 120-240 mg daily; max 640 mg daily.
Carvedilol (Coreg ®) (Immediate Release Dosing)	Start 6.25 mg BID; usual dose 12.5 – 25 mg BID. **(CR formulation dosed once daily).** Also indicated for heart failure (start at 3.125 mg BID).
Alpha Blockers	
Doxazosin (Cardura®)	Start 1 mg immediate release at bedtime; max dose 16 mg daily. Titrate up slowly. Can cause dizziness, drowsiness, and weakness.
Prazosin (Minipress®)	Start 1mg PO BID-TID (first does at bedtime); max dose 15 mg daily. Titrate up slowly. Can cause dizziness, drowsiness, and weakness.
Central Acting	
*Clonidine (Captopres®)	Start 0.1mg BID (first dose at bedtime); usually 0.1 - 0.3 mg BID; max 1.2 mg BID. Titrate up slowly. Can cause increase in sedation, dizziness, and weakness. Do not withdraw abruptly.

*This drug is not on the IHS National Core Formulary.

Note: This is not a complete prescribing reference. This algorithm is not intended for treatment selection in children or in women who are or could become pregnant; some antihypertensive medications can cause fetal damage.

References:

JNC 8 Panel; http://jama.jamanetwork.com/article.aspx?articleid=1791497.

ADA 2015 Clinical Practice Recommendations; http://care.diabetesjournals.org/content/38/Supplement_1.