

Clinical Overview: Hypertension Management

1. Overview of Hypertension Stages

According to the 2017 ACC/AHA High Blood Pressure Guidelines, blood pressure categories are defined as follows:

Stage	Systolic (mm Hg)		Diastolic (mm Hg)
Normal	Less than 120	<i>and</i>	Less than 80
Elevated	120 – 129	<i>and</i>	Less than 80
Stage 1 Hypertension	130 – 139	<i>or</i>	80 – 89
Stage 2 Hypertension	140 or higher	<i>or</i>	90 or higher
Hypertensive Crisis	Higher than 180	<i>and/or</i>	Higher than 120

2. Medication Options

Pharmacological treatment is generally initiated for Stage 1 hypertension if the patient has a high cardiovascular risk, and immediately for Stage 2.

- **ACE Inhibitors (e.g., Lisinopril):** Often a first-line therapy. They relax blood vessels by blocking the formation of angiotensin II, a chemical that narrows blood vessels.
- **Angiotensin II Receptor Blockers (ARBs):** Work similarly to ACE inhibitors but block the action of angiotensin II rather than its formation. Useful for patients who develop a cough on ACE inhibitors.
- **Thiazide Diuretics:** Help the kidneys eliminate sodium and water, reducing blood volume.
- **Calcium Channel Blockers (CCBs):** Prevent calcium from entering the muscle cells of the heart and arteries, allowing arteries to relax.

3. Lifestyle Changes

Non-pharmacological interventions are critical for all stages of hypertension.

- **Dietary Approaches:** Adopt the **DASH diet** (Dietary Approaches to Stop Hypertension), rich in fruits, vegetables, whole grains, and low-fat dairy.
- **Sodium Reduction:** Limit sodium intake to **< 2,300 mg/day**, ideally aiming for **< 1,500 mg/day**.
- **Physical Activity:** Engage in at least **150 minutes** of moderate-intensity aerobic exercise per week.
- **Weight Management:** Weight loss of even 1 kg can reduce blood pressure by ~1 mm Hg.
- **Alcohol Limitation:** Men should limit to \leq 2 drinks daily; women to \leq 1 drink daily.

4. Dosage Comparison Table

Common first-line antihypertensive agents and their typical dosing regimens.

Drug Name	Class	Starting Dose	Maintenance Dose
Lisinopril	ACE Inhibitor	10 mg daily	20 – 40 mg daily
Losartan	ARB	50 mg daily	50 – 100 mg daily
Amlodipine	Ca Channel Blocker	2.5 – 5 mg daily	5 – 10 mg daily
Hydrochlorothiazide	Thiazide Diuretic	12.5 – 25 mg daily	25 – 50 mg daily
Metoprolol Succinate	Beta Blocker	25 – 50 mg daily	50 – 100 mg daily