

# JNC 7 Medication Guidelines for the Management of Hypertension

Compelling Indications	Treatment Recommendations	
Ischemic Heart Disease (treated with intensive lipid management and aspirin)	Stable Angina Pectoris ACS (unstable angina or MI)	1 <sup>st</sup> Line: Beta-blockers 2 <sup>nd</sup> Line: BB + Long acting CCB
	Post-MI	1 <sup>st</sup> Line: BB + ACEI initially 2 <sup>nd</sup> Line: add other agents as needed
Heart Failure (In patients unable to tolerate ACEIs, an ARB may be used)	Stage A (NYHA class I)	ACEI and thiazide diuretic
	Stage B (NYHA class I)	ACEI and BB
	Stage C (NYHA class II-III)	1 <sup>st</sup> Line: Stage B agents; 2 <sup>nd</sup> Line: loop diuretic, aldosterone antagonist
	Stage D (NYHA IV)	Stage C agents + Inotropic drugs
Diabetic Hypertension	ACEI, ARB, Thiazide diuretics, BB, and CCB	
Chronic Kidney Disease (aggressive with ≥3 drug)	ACEI or ARB with loop diuretic	
Cerebrovascular Disease	ACEI + thiazide diuretic	
Left Ventricular Hypertrophy (LVH) (Direct vasodilators should be avoided)	Any class (ACEI & diuretic showed most reduction in ventricular mass)	
Peripheral Artery Disease (PAD)	Any class + aspirin	
Minorities: African Americans (Generally monotherapy with BB, ACEI, or ARB is less effective.)	Thiazide, CCB, ACEI/ARB + diuretic, Beta blocker, emphasis on salt restriction (DASH diet)	
Obesity and the Metabolic Syndrome	Intensive TLC with emphasis on weight loss.	
Pregnancy (ACEI and ARB are contraindicated)	1 <sup>st</sup> Line: Methyldopa, Labetolol 2 <sup>nd</sup> Line: BB, vasodilator	
Children and Adolescent (1 <sup>st</sup> Line: TLC)	If needed: one agent - pediatric dose	
Isolated Systolic Hypertension	thiazide diuretic or long acting DHP CCB (age > 60); BB, ACEI, ARB	
Essential Hypertension (> 70% of patients need combination of ≥ 2 agents)	1 <sup>st</sup> Line: (low-dose) thiazide diuretic 2 <sup>nd</sup> Line: Add ACEI, long acting DHP CCB, BB (age < 55 yrs)	
Resistant Hypertension (address causes), Check For primary hyperaldosteronism	Diuretic + near max dose of 2 agents	
Elderly - lower initial doses of agents as used in general algorithm (weight loss and salt restriction)	Combination therapy with ≥ 2 agents titrated to response	

FHCP FORMULARY		Usual Dose (mg/day)	MAX** mg/day
<b>Bold indicates cost/convenience preferred drug</b>			
<b>BETA BLOCKERS (BB)</b>			
Acebutolol (ISA) (Generic)	BID	400 – 800	0.8-1.2g
Atenolol (Generic), (β1 selective)	QD	25 – 100	50-100
Carvedilol (Generic) Preferred if DM, CHF, IGT, metabolic syn.	BID	12.5 – 50	50-100
Labetalol HCl (Generic)	BID	400 – 800	2400
Metoprolol IR (Gener) Pref. if HTN only, copd/asthma (β1 sel)	QD-TID	100 – 150	450
<b>CALCIUM CHANNEL BLOCKERS (CCB)</b>			
<b>DHP</b>			
Nifedipine ER (Generic)	QD	30 – 60	90
Amlodipine – (Generic)	QD	5 – 10	10
Diltiazem ER (Generic)	QD	180 – 360	480
Verapamil ER (Generic)	QD	180 – 360	480
<b>DIURETICS</b>			
<b>Thiazide</b>			
HCTZ + Triamterene	QD	25/37.5 - 50/75	50/75
Indapamide	QD	1-25-5	5
Chlorthalidone (Generic)	QD	25	50
HCTZ (Generic 25, 50mg)	QD - BID	12.5 – 50	50
Bumetanide (Generic)	QD - BID	0.5 – 2	10
Furosemide (Generic)	BID	20 – 40	600
<b>Renin-Angiotensin-Aldosterone System Inhibitors</b>			
<b>ACEI</b>			
Benazepril (generic)	QD - BID	20 – 40	80
Captopril (Generic)	BID - TID	25 – 150	450
Enalapril (Generic)	QD - BID	10 – 40	40
Fosinopril (Generic)	QD - BID	20 – 40	80
Lisinopril (Generic)	QD	20 – 40	80
<b>ARB</b>			
Diovan (Brand Tier 2)	QD - BID	80 – 320	320
Micardis (Brand Tier 2)	QD	20 – 80	80
<b>Aldosterone antagonist</b>			
Spironolactone (Generic)	QD - QID	12.5 – 200	400
<b>DIRECT VASODILATORS</b>			
<b>HYDRALAZINE (Generic)</b>			
Hydralazine (Generic)	BID - QID	25 – 100	300
<b>MINOXIDIL (Generic)</b>			
Minoxidil (Generic)	QD - BID	10 – 40	100
<b>ALPHA AGONISTS</b>			
<b>Clonidine (Generic)</b>			
Clonidine (Generic)	QD - TID	0.2 – 0.6	2.4
<b>Guafacine (Generic)</b>			
Guafacine (Generic)	QD	1 – 3	4
<b>Methyldopa (Generic)</b>			
Methyldopa (Generic)	BID - QID	500 – 2000	3g

References: 1) The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. US Department of Health and Human Services. August 2004. 2) Essential Hypertension. University of Michigan Health System-Academic Institution. 1997 (revised Apr 2003). NCC: 004462. 3) \*\*Clinical Pharmacology Online. Gold Standard Media. 2006.