

Appropriate Hypertension Treatment

Background

In 2003, the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure published their seventh report (JNC VII) to provide an evidence-based approach to managing this common condition.

JNC VII Highlights

- ◆ The BP goal for most patients is <140/90 mmHg
- ◆ A goal of <130/80 mmHg for patients with diabetes or chronic kidney disease
- ◆ Thiazide-type diuretics should be initial drug therapy for most patients
- ◆ Certain high-risk conditions are compelling indications for the initial use of an agent from other anti-hypertensive drug class
- ◆ Most patients will require ≥ 2 antihypertensive medications to reach goal BP

Other Recommendations

- ◆ If a patient's blood pressure is >20/10 mmHg above goal, two agents should be initiated simultaneously, one should be a thiazide-type diuretic
- ◆ Compelling indications for specific therapy involve high-risk conditions that can be direct sequelae of hypertension or commonly associated with hypertension; therapeutic decisions should target both the compelling indication and BP lowering (see table below)

Table 8. Clinical trial and guideline basis for compelling indications for individual drug classes

COMPELLING INDICATION*	RECOMMENDED DRUGS†						CLINICAL TRIAL BASIS‡
	DIURETIC	BB	ACEI	ARB	CCB	ALDO ANT	
Heart failure	•	•	•	•		•	ACC/AHA Heart Failure Guideline, ⁴⁰ MERIT-HF, ⁴¹ COPERNICUS, ⁴² CIBIS, ⁴³ SOLVD, ⁴⁴ AIRE, ⁴⁵ TRACE, ⁴⁶ ValHEFT, ⁴⁷ RALES ⁴⁸
Postmyocardial infarction		•	•			•	ACC/AHA Post-MI Guideline, ⁴⁹ BHAT, ⁵⁰ SAVE, ⁵¹ Capricorn, ⁵² EPHEUS ⁵³
High coronary disease risk	•	•	•		•		ALLHAT, ³³ HOPE, ³⁴ ANBP2, ³⁶ LIFE, ³² CONVINC ³¹
Diabetes	•	•	•	•	•		NKF-ADA Guideline, ^{21,22} UKPDS, ⁵⁴ ALLHAT ³³
Chronic kidney disease			•	•			NKF Guideline, ²² Captopril Trial, ⁵⁵ RENAAL, ⁵⁶ IDNT, ⁵⁷ REIN, ⁵⁸ AASK ⁵⁹
Recurrent stroke prevention	•		•				PROGRESS ³⁵

* Compelling indications for antihypertensive drugs are based on benefits from outcome studies or existing clinical guidelines; the compelling indication is managed in parallel with the BP.

† Drug abbreviations: ACEI, angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; Aldo ANT, aldosterone antagonist; BB, beta-blocker; CCB, calcium channel blocker.

‡ Conditions for which clinical trials demonstrate benefit of specific classes of antihypertensive drugs.

Idaho Drug Utilization Review Program

Cost Comparison of Commonly Prescribed Oral Antihypertensive Drugs
(For a full listing of Idaho Medicaid preferred agents see <http://idahodur.isu.edu>)

Agent	Common Dose mg/day	Estimated Cost*
Thiazide Diuretics		
Hydrochlorothiazide tablets (HydroDiuril®)	25 mg	7.99
Hydrochlorothiazide capsules (Microzide®)	12.5 mg	14.89
Beta Blockers		
Atenolol (Tenormin®) [†]	50 mg	7.99
Bisoprolol (Zebeta®) [†]	5 mg	33.99
Metoprolol tartrate (Lopressor®) [†]	50 mg	12.09
Metoprolol succinate (Toprol XL®) ^{†‡}	100 mg	39.99
Angiotensin Converting Enzyme (ACE) Inhibitors		
Enalapril (Vasotec®) [†]	20 mg	14.99
Lisinopril (Zestril®, Prinivil®) [†]	20 mg	10.99
Ramipril (Altace®) ^{†‡}	5 mg	47.99
Angiotensin Receptor Blockers (ARBs)		
Irbesartan (Avapro®) [†]	150 mg	45.99
Losartan (Cozaar®) [†]	50 mg	47.99
Aldosterone Antagonist		
Spironolactone (Aldactone®)	25 mg	9.99
Dihydropyridine Calcium Channel Blockers		
Amlodipine (Norvasc®) ^{†‡}	5 mg	46.99
Felodipine (Plendil®) [†]	5 mg	29.99
Combination Products		
Amlodipine/benazepril (Lotrel®)	5/10 mg	72.99
Enalapril/HCTZ (Vaseretic®) [†]	5/12.5 mg	23.99
Lisinopril/HCTZ (Prinzide®, Zestoretic®) [†]	20/12.5 mg	21.99
Losartan/HCTZ (Hyzaar®) [†]	50/12.5 mg	47.99
Irbesartan/HCTZ (Avalide®) [†]	150/12.5 mg	55.99
Telmisartan/HCTZ (Micardis HTC®) [†]	40/12.5 mg	53.49
Triamterene/HCTZ (Dyazide®, Maxzide®)	37.5/25 mg	21.29

*Cost based on 30 day supply of generic agent (if available) www.drugstore.com (3/2006)

[†]Idaho Medicaid preferred drug

[‡]Brand name only, no generic available

Conclusions

Because of the many risks of HTN, it is necessary to treat this disease state aggressively, appropriately, and to recommended goals. A thiazide-type diuretic should be used as initial drug therapy for most patients with uncomplicated hypertension. Since a majority of patients will require more than one antihypertensive agent, appropriate drug selection should be based on presence of compelling indications, individual patient response, and cost.

Reference

Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Hypertension. 2003 Dec;42(6):1206-52.