

Treatment of Hypertension

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Hypertension is a major risk factor for cardiovascular events [1,2]. Hypertension is present in approximately 69% of patients with a first myocardial infarction [3], in approximately 77% of patients with a first stroke [3], in approximately 74% of patients with heart failure [3], and in 60% of patients with peripheral arterial disease [4]. Hypertension is also a major risk factor for a dissecting aortic aneurysm, sudden cardiac death, angina pectoris, atrial fibrillation, diabetes mellitus, the metabolic syndrome, chronic kidney disease, thoracic and abdominal aortic aneurysms, left ventricular hypertrophy, vascular dementia, Alzheimer's disease, and ophthalmologic disorders [2].

The 2009 European Society of Hypertension guidelines recommended that lowering the blood pressure to less than 130/80 mm Hg in patients at high risk for cardiovascular events was unsupported by prospective trial data, and that the systolic blood pressure should be lowered to less than 140 mm Hg in these patients [5]. The American College of Cardiology Foundation/American Heart Association 2011 expert consensus document on hypertension in the elderly recommended that the blood pressure should be lowered to less than 140/90 mm Hg in adults younger than 80 years at high risk for cardiovascular events [2]. On the basis of data from the Hypertension in the Very Elderly trial [6], these guidelines recommended that the systolic blood pressure should be reduced to 140 to 145 mm Hg if tolerated in adults aged 80 years and older. I concur with these guidelines [2,7-11].

The following studies discuss the reasons for my recommendations [12-19]. A meta-analysis of 147 randomized trials including 464,000 persons with hypertension showed that except for the extra protective effect of beta blockers given after myocardial infarction and a minor additional effect of calcium channel blockers in preventing stroke, the use of beta blockers, angiotensin-converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), diuretics, and calcium channel blockers cause a similar reduction in coronary events and stroke for a given decrease in blood pressure [20]. The proportionate reduction in cardiovascular events was the same or similar regardless of pretreatment blood pressure and the presence or absence of cardiovascular events [20]. Diuretics, ACE inhibitors, ARBs, calcium channel blockers, or beta blockers may be used as initial therapy in the treatment of primary hypertension in older and in younger persons. If beta blockers are used, beta blockers such as carvedilol, nebivolol, and bisoprolol are preferred [21].

The American College of Cardiology Foundation/American Heart Association 2011 expert consensus document on hypertension in the elderly recommended that diuretics, ACE inhibitors, ARBs, beta blockers, and calcium channel blockers have all demonstrated benefit in reducing cardiovascular events in randomized trials [2]. The choice of specific antihypertensive drugs depends on efficacy, tolerability, presence of specific comorbidities, and cost [2].

In conclusion, the blood pressure should be lowered to less than 140/90 mm Hg in adults younger than 80 years at high risk for cardiovascular events [2]. On the basis of data from the Hypertension in the very elderly trial [6], the systolic blood pressure should be reduced to 140 to 145 mm Hg if tolerated in adults aged 80 years and older.

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