Overview of hypertension treatment in the elderly

Edward D. Freis, MD

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Because blood pressure in humans rises with age, more and more of us develop hypertension as we grow older. Hypertension is one of the most important problems in older patients. In this country two thirds of persons older than 65 years of age have hypertension, *ie*, blood pressure greater than 140/90 mm Hg [1]. Furthermore, the elderly currently represent the most rapidly growing segment of the population. Also, the risk for cardiovascular complications is greater at any given level of blood pressure in older patients compared with younger patients [2]. In fact, epidemiologic evidence indicates that hypertension is the most important treatable risk factor in the elderly [3].

From the Department of Veterans Affairs Medical Center, Washington, DC, USA.

Requests for reprints to Dr. Edward D. Freis, Department of Veterans Affairs, Medical Center, 50 Irving Street Northwest, Washington, DC 20422, USA.

In persons older than 50 years of age, systolic blood pressure rises more than diastolic pressure [4]. The continued increase in systolic blood pressure associated with aging is probably caused by a gradual replacement of elastic tissue by collagen in the proximal aorta. The aorta becomes less distensible and causes blood pressure to increase during cardiac ejection, resulting in systolic hypertension. Contrary to previous opinion, it is now known that the risk for developing coronary artery disease or stroke is as great or greater in patients with systolic hypertension as in patients with diastolic hypertension [5].

A meta-analysis of several therapeutic trials in patients of all ages with mild to moderate hypertension has shown a 42% reduction in stroke and a 14% reduction in coronary heart disease after treatment with antihypertensive drugs [6]. The greatest protective effect was seen against stroke, whereas that against myocardial infarction was substantially less. Prevention of cardiovascular complications is at least as effective in elderly patients with hypertension, including those with isolated systolic hypertension, as it is in younger patients. This finding was shown in the Systolic Hypertension in the Elderly Program (SHEP) trial [7], which was limited to elderly patients with isolated systolic hypertension. Over a 4.5-year follow-up period, the drug-treated group showed a 36% reduction in stroke and a surprising 27% decrease in complications due to coronary heart disease. Treatment was effective even in persons 80 to 85 years of age.

A few common sense precautions can allow elderly people to tolerate antihypertensive drugs very well. The most important side-effects of these drugs result from excessive reduction of blood pressure, leading to postural hypotension, fatigue, and weakness. Many elderly patients exhibit much higher blood pressures in the physician's office than at home. Elderly patients often react to this so-called "white-coat" phenomenon. When antihypertensive drugs are titrated to high doses based only on office blood pressure readings, hypotension may occur when the patient is at home. To avoid these side-effects, treatment should begin with half the usual initial dose. Doses can then be increased gradually as needed, with particular attention not only to the blood pressure but also to the patient's complaints. If these complaints suggest the presence of hypotension, blood pressures should be taken by the patient or a family member in the home. These measurements should be done while the patient is in the upright (as well as the supine) position. It may be necessary to switch the patient to treatment with another drug or combination of drugs to obtain effective and symptom-free blood pressure control.

In these days of high-pressure advertising campaigns aimed at promoting the newest antihypertensive agents, we may forget or be uninformed of the safety and effectiveness of older, less expensive drugs (particularly the thiazide diuretics). These agents are highly effective, especially in older patients. For example, the combined data from three Veterans Administration Cooperative Studies [8] indicated that the antihypertensive response to thiazides was greater in older patients than in younger patients. This age-associated difference was not found with propranolol, nadolol, and captopril. The SHEP trial [7] also showed the effectiveness of the thiazide diuretics.

Not only are the thiazide diuretics highly effective in the elderly, but, contrary to previous opinion, they are also safe [9]. They do not increase the incidence of coronary heart disease, a finding that has now been convincingly shown by most clinical trials, including two recent trials in elderly patients [7,10]. The Medical Research Council of Great Britain trial [10] showed that thiazide diuretics were more effective than β-blockers in preventing stroke in elderly patients, whereas the SHEP trial [7] found that diuretic treatment resulted in a reduction of both stroke and, to a lesser extent, coronary heart disease.

Some patients have an aversion to taking drugs and would rather bear the Spartan discipline of weight reduction or salt restriction. How effective are these nonpharmacologic approaches to treatment? Neither is as reliably effective as drug treatment. The most effective nondrug treatment has been weight reduction, especially when it is combined with exercise. The problem for many patients is in maintaining this Spartan lifestyle over long periods.

Salt restriction is less dependable in controlling hypertension. Even after reducing salt intake by half (to about 5 g/d), blood pressure will only decrease, on average, by 1 or 2 mm Hg. Further salt restriction is especially difficult because processed foods contain salt.

During the past 40 years, we have seen great advances in the control of hypertension. Previously, hypertension was considered to be "essential" in nature. Despite these misguided beginnings, it has recently been proven that reduction of elevated blood pressure was of great benefit to all patients, including the elderly [11]. Malignant hypertension has practically disappeared. Congestive heart failure (once a common complication), renal failure, and stroke have been greatly reduced, and some evidence suggests that blood pressure reduction may lower, at least in part, the incidence of coronary artery disease. The combination of antihypertensive treatment and control of blood lipids should further reduce this cardiovascular complication. We have emerged from darkness into light and by doing so have provided great benefit to vast numbers of patients with this disorder.

Annotated references and recommended reading

- • Of special interest
- •• Of outstanding interest

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