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More than 20 years have passed since the National High Blood Pressure Education Program was established and its initial report on the detection, evaluation and treatment of patients with hypertension was released. In those days, on the basis of an arbitrary definition of hypertension as diastolic pressure >104 mm Hg, 23 million Americans were estimated to have essential hypertension. In addition, in response to the initial results of the Veterans Administration Cooperative Studies, a stepped care algorithm of antihypertensive therapy was proposed. This approach, now considered to be one of therapeutic empiricism, recommended that antihypertensive therapy be initiated with a thiazide diuretic agent (for example, hydrochlorothiazide, 50 mg twice daily) followed, if necessary, by successive therapeutic steps including an adrenergic inhibitor (step 2: reserpine, for example); a direct-acting smooth muscle relaxing vasodilator (step 3: hydralazine, for example), and a more potent agent (step 4: guanethidine or minoxidil, for example). In reality, this concept was not at all empiric but founded on physiologic knowledge. Thus, if therapy was initiated by any of the other agents (in step 2, 3, or 4), the initial pressure reduction would soon be attenuated as a result of intravascular volume expansion (or “pseudotolerance”). Moreover, because the diuretic drug would be effective in approximately 50% or more of patients, its use as an initial therapeutic step was reasonable and doses of possible subsequent medications could be reduced, thereby diminishing chances of associated side effects.

This concept soon caught hold and, over the ensuing years, a dramatic reduction in deaths from stroke, coronary heart disease and overall cardiovascular diseases resulted. With the report of the Hypertension Detection and Follow-Up Program, definition of hypertension was modified to include all patients whose diastolic pressure exceeded 89 mm Hg, thereby increasing the number of patients with hypertension to upward of 59 million Americans. In the subsequent reports of the Joint National Committee (JNC) on Detection, Evaluation, and Treatment of High Blood Pressure, the beta-adrenergic receptor blocking agent was suggested as an alternative “first step” agent, to be prescribed (as with diuretic agents) in submaximal doses and later, if necessary, in full doses. With JNC-III, nonpharmacologic therapy was introduced, and other concepts such as step-down therapy and evaluation for other cardiovascular risk factors were encouraged. In JNC-IV, the angiotensin-converting enzyme (ACE) inhibitors and calcium antagonists were included among the initial therapeutic options. This broader spectrum of agents also permitted a more individualized selection of therapy based on certain clinical and demographic characteristics.

Over these 20 years of a national hypertension education program, for health care professions as well as the general public, continued reductions in morbidity and mortality ensued: Stroke deaths decreased by ≥60% and deaths from coronary heart disease by almost 50%. Indeed, with the publication last month of the primary prevention document on hypertension (1), for the first time the estimated number of patients with hypertension, defined as blood pressure >89 mm Hg, has been reduced—by approximately 17%—to 50 million Americans.

Accompanying this primary prevention document was the publication of JNC-V, which has once again underscored the dramatic and continued evolution of our concepts about hypertensive disease and antihypertensive therapy (2). Among the changes are:

1. Description of a new staging of the severity of hypertensive disease that excludes the term mild hypertension.
2. Inclusion of systolic pressure elevations in this severity staging of hypertensive disease.
3. An expanded section on the evaluation of patients with hypertension to include manifestations of target organ involvement; situations for use of noninvasive, automated, ambulatory blood pressure monitoring devices; further significance of laboratory tests and diagnostic procedures and more recent concepts on community blood pressure control programs.
4. Because of current concerns about health care economics, there is greater discussion of the cost of care and strategies related to the long-term follow-up of patients with hypertension.
5. The concept of nonpharmacologic approaches to the management of hypertension was modified to that of life-
style changes, now including exercise as an antihypertensive modality.

6. Initial drug therapy options were expanded to include alpha,- and alpha-beta-adrenergic receptor blocking agents.

7. In considering this broader option of initial therapies, the document indicates that the "diuretics and beta-blockers are preferred because a reduction in morbidity and mortality has been demonstrated" and that the other initial options that include "the ACE inhibitors, calcium antagonists, alpha,- and alpha-beta adrenergic receptor blockers have not been tested or shown to reduce morbidity and mortality." This concept was deemed appropriate in view of recent reports on the efficacy of antihypertensive therapy in several multicenter trials involving elderly patients. However, since submission of this consensus report, other multicenter trials, using compounds from the latter classes of agents, have shown a reduction in morbidity and mortality in normotensive cardiovascular patients.

8. Because the recent expansion of knowledge concerning treatment of special populations of patients with hypertension also includes patients with special demographic characteristics and coexisting diseases, the section on individualized antihypertensive therapy has been considerably expanded.

9. The foregoing special situations encompass other considerations including hypertension in women, isolated systolic hypertension in the elderly, hypertension associated with cyclosporine, shock wave renal lithotripsy, cocaine and erythropoietin-induced hypertension.

10. Pharmacologic tables were updated to include new drugs and drug classes, mechanisms of drug action, drug-drug interactions and drugs to be used in hypertensive crises and refractory hypertension.

All in all, there has been a tremendous evolution in the recommendations of the Joint National Committee and this is clear with its fifth consensus report. Should a reprint of this report be of interest, please direct your requests for reprints to the High Blood Pressure Education Program, National Heart, Lung, and Blood Institute, National Institutes of Health, Building 31, Room 4A05, Bethesda, Maryland 20892.

References