Seventh Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7)

Resetting the Hypertension Sails

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The National High Blood Pressure Education Program (NHBPEP), coordinated by the National Heart, Lung, and Blood Institute (NHLBI), has released its long-awaited Joint National Committee (JNC) 7 report. The report will be made available in 2 forms: the “Express” or short version and a longer version that will be published in Hypertension and will provide more detail regarding the recommendations. On its surface, it resembles the 6 predecessors, but to fully appreciate this new landmark document, one must recognize the process and context from which it is derived and what it is about to do.

You cannot direct the winds; you can adjust the sails.

Approximately 35 years ago, clinicians were busy managing severe and malignant hypertension. Hospitals filled their beds with stroke patients and stroke wards were commonplace. Coronary heart disease and stroke prevalence and accompanying mortality rates were the highest ever recorded. During the next generation, different classes of antihypertensive agents were developed and tested in a variety of settings and among different patients. The studies independently and collectively contributed to a universal finding: lowering arterial pressure can remarkably reduce cardiovascular morbidity and mortality rates as well as slow the progression of renal disease, retinopathy, and all-cause deaths. When these findings first became available, the NHLBI formed the NHBPEP, designed to translate this information through public and professional education programs. One important step taken by the NHBPEP was the formation of a coordinating committee, which in essence is an advisory board to the NHLBI as well as to each of the participant groups on the committee. A critical component of the program is the Joint National Committee (JNC) Reports. The JNC is convened periodically by the coordinating committee to synthesize the scientific research for busy clinicians and public health workers in the form of a guideline report. The intent then as it is now is to unify the positions of the various professions and send one clear message.

One challenge has been to achieve consensus among the member organizations of the coordinating committee now numbered as 39 professional organizations and 7 federal agencies. However, having the 46 member organizations agree on strategies to prevent and manage hypertension and speak with one voice helps to bring a clear message and guidance to health professionals. The JNC documents demonstrate that different disciplines can agree when the focus is to improve the common good. Through the years, all organizations collectively pulling on the same line have lifted the sails to properly catch the wind, and the hypertension treatment ship has sailed efficiently. Almost immediately after the NHBPEP began, hypertension awareness, treatment, and control rates began to improve. Death rates from coronary heart disease and stroke declined shortly thereafter. The decline is real, seen in both genders, and in blacks and whites. The improvements continued until the early 1990s, when blood pressure control rates did not improve further and the decline in stroke and coronary heart disease mortality rates appeared to have waned and certainly were not what the program was accustomed to seeing. The sails were no longer set correctly; the ship was losing momentum. The question was why?

It was because clinical trials focused primarily on diastolic blood pressure, and the JNC and NHBPEP educational messages were on treating the diastolic number, which clinicians were doing quite well. However, data from the NHLBI Framingham Study and other studies suggested that systolic blood pressure was stronger than diastolic pressure as a predictor of cardiovascular disease in people over the age of 50. The Framingham study also pointed out that the subopimal control rates were due to systolic blood pressure not being well controlled. Prospective observational studies suggest the risk of cardiovascular death begins at 115/75 mm Hg and doubles for each 20/10–mm Hg increment in a near linear fashion. Thus arterial stiffness and other abnormal effects begin long before the 160/95–mm Hg mark, when clinicians began treating hypertension in older persons. Clinicians know all too well the difficult task of treating hypertension in older patients who have stiff arteries.

This knowledge set the stage for JNC 7, which began its task of redefining and streamlining the blood pressure nomenclature into three categories: normal, prehypertension, and hypertension stages 1 and 2. Before JNC 7, the defini-

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tions in use were more complicated and perhaps misleading. For example, the older terms “high normal” and “borderline” high blood pressure suggested to some a lack of importance. The new prehypertension category is designed to focus physician, patient, and public attention on blood pressure in the 120–139 mm Hg systolic and 80–89 mm Hg diastolic ranges and motivate them to adopt health-promoting lifestyles. The aim is to slow or prevent the progression of rising blood pressure and increasing arterial stiffness and kidney damage that occurs over time. Hypertension can be prevented. Hypertension stages 2 and 3 are now combined into stage 2 because the treatment for these conditions is essentially the same.

The JNC provides in a table format, numeric estimates based on clinical trials and observational studies, the potential falls in blood pressure that can occur with a variety of health-promoting lifestyle improvements. The point is to show what can possibly be achieved with this form of therapy. A new blood pressure treatment algorithm and accompanying tables have been constructed to help clinicians select the proper treatment regimens, based on patient presentation. The recommendations are derived from the preponderance of clinical trial evidence showing the clear benefits of lowering blood pressure with drugs. The report recommends that for hypertensive patients, the goal is to bring the blood pressure levels to <140/90 mm Hg and lower goals for those with diabetes and chronic kidney disease.

Important information from the behavioral sciences has been synthesized so that it can be applied to help patients achieve the blood pressure goal. The JNC 7 reminds us of some important clinical points: The most effective therapy prescribed by the most careful clinician will control hypertension only if patients are motivated. Motivation improves when patients have positive experiences with and trust in the clinician. Empathy builds trust and is a potent motivator. The clinical workup and treatment will not matter if patients have failed to stay on therapy.

The 46-member organizations of the NHBPEP coordinating committee have once again pulled on the hypertension lines in unison and the sails have been trimmed to accommodate the winds. When the JNC 7 messages are applied, hypertension control rates will improve and morbidity and mortality rates for coronary heart disease and stroke should begin to decline in a much more rapid fashion. The journey is not over.

References
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