Both the Toolset and Motivation Are Needed for Lasting Change

Sandra J. Taler

After 50 years of pharmacological treatment options and 7 expert guideline reports, hypertension control rates in the United States remain disappointing. With a plethora of salt-laden, calorie-dense, supersized foods that are widely marketed and regularly consumed by the American public, combined with the mechanical conveniences of modern life, it is no surprise that obesity is spreading, and this salt- and weight-sensitive disease of hypertension remains uncontrolled. Are we as healthcare providers offering the right amounts and types of counseling and feedback to assist our patients in reforming their choices and successfully reducing their sodium intake and their weight? If not, would additional lifestyle coaching be effective in improving hypertension control rates?

In this issue of Hypertension, Svetkey et al\(^1\) describe a Herculean effort to modify blood pressure (BP) control rates by interventions directed at 32 physicians and \(\approx600\) patients over an 18-month time period. This prospective, randomized trial evaluated the success of physician interventions within a practice, intervention efforts addressed directly to patients, and the combination, randomized within 8 primary care practices in community practice settings. The physician interventions included Internet-based learning, self-monitoring, and review of quarterly feedback reports. For the patients, the intervention included 20 weekly group sessions over 6 months, followed by 12 monthly telephone counseling contacts.

Enrollment rates were excellent, with 56% of screened patients randomized. Outcome results were available for 91.0% at 6 months and for 88.5% at 18 months. The primary outcome of systolic BP change after 6 months was promising, with a 9.7-mm Hg lower systolic BP in the dual intervention group, which was significantly greater than the 6.7-, 5.3-, and 7.1-mm Hg fall in those receiving neither, physician-alone, or patient-alone interventions, respectively. The percentage of patients achieving goal systolic BP increased at 6 months, with evidence by urinary excretion testing that this occurred because of adoption of dietary changes and weight loss. Sadly, by 18 months, this major effort did not produce sustained results of lower BP that were better than the BP declines seen in those who did not receive the interventions. Similarly, the weight loss and many of the dietary changes did not persist, although subjects were still receiving supportive telephone counseling. The results support a placebo BP-lowering effect related to study enrollment alone. Even in the combined intervention group, which demonstrated a synergy between patient intervention and physician intervention, the improved BP control was transient and did not persist after the intervention stopped.

A major weakness of the study was the inclusion of a majority of patients who had their hypertension controlled before entry (60% were at goal, and the mean entry BP was 133/74 mm Hg). Because of this, the authors changed their primary outcome from proportion at goal to change in systolic BP. On a deeper level, having BP already at goal at study entry would make it difficult for practitioners or patients to be motivated to make more drastic or long-term changes. The lack of measurable dietary change is also disappointing. Although this may reflect the futility of such efforts in general, it may relate to the reduced incentive for these patients. In a subanalysis, the authors were able to look at those uncontrolled at entry and observed a 4-mm Hg greater reduction in systolic BP, supporting the role of motivation in making lifestyle changes.

Results from the Hypertension Improvement Project (HIP) follow a pattern seen in other similar studies.\(^2,3\) In PREMIER,\(^2\) in which a similar study cohort was enrolled in an intensive program of multiple lifestyle modifications all directed at the patients, BP lowering occurred in the control group that received limited advice and in the intensively treated groups, with incrementally greater reduction with more intensive treatment. The net BP reductions of 4.3-mm Hg systolic and 2.6-mm Hg diastolic using behavioral interventions, the Dietary Approaches to Stop Hypertension diet instruction, and counseling were of similar magnitude to the findings reported in HIP. In both PREMIER and HIP, some persistent effects on behavior were evident, including weight loss and dietary changes. Interestingly, combination efforts aimed at changing multiple lifestyle factors resulted in subadditive BP reductions. By entry criteria, the PREMIER cohort was not treated with antihypertensive agents, the cohort in the study by Roumie et al\(^3\) was taking a single agent, and HIP subjects were taking multiple agents with a mean of 2. PREMIER trained the patients only, whereas Roumie and HIP trained the providers, the patients, or both. Both HIP and Roumie et al\(^3\) reported greatest benefit when patient education was part of the effort and only marginal benefit when efforts were directed only to the provider. All 3 of the studies detected BP reductions in their control groups that received limited lifestyle advice and were enrolled as part of a study. The mechanism for the improved BP control was not deter-
mined, and in Roumie et al, weight, dietary changes, and urinary metabolite excretion were not reported.

This study has additional weaknesses, including the designation of CKD on the basis of patient self-report, likely to greatly underestimate CKD prevalence rates. The use of physician self-reporting to indicate whether lifestyle modification counseling was provided at each visit would also seem unreliable. On a practical level, these interventions were costly and time intensive and, thus, difficult to continue outside of a research setting. The drain on the physicians participating was substantial related to the intervention and the required completion of a data form with every patient study visit.

In summary, this was an important study in an area of high significance addressed at key questions. Can we change the eating and exercise habits of a patient cohort? What types of efforts are successful and who should provide them? There are few studies that have evaluated the efficacy of a multi-level approach to BP control in hypertensive patients. Even after successful change, the patients were unable to maintain their positive results. We might conclude that success requires the right toolset and the motivation. Without the first, energy is present but undirected, and without the second, the tools stay on the shelf. We need the tools and the drive to begin and continue efforts to help our patients change. Svetkey et al shared the tools, but their study cohort was perhaps less motivated and the effort was not successful over time. Realizing this, we need to try again to apply these techniques in a motivated population.

Disclosures
None.

References
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