Yet Another Study Reports Poor Control of Elevated Blood Pressure

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The article by Sorlie et al. (this issue) provides estimates of the prevalence of hypertension and of awareness, treatment, and control among the Hispanic community. Previous publications from this study have described the study design and recruitment and baseline measurements and the distribution of risk factors and prevalent cardiovascular disease. The reports documented very substantial variability in the prevalence of hypertension by specific Hispanic groups and communities.

The most interesting observation is the low prevalence of hypertension noted both in this and in previous publications among Mexican Americans as compared with the other groups, especially Dominicans (i.e., 13.3% of Mexican Americans in Bronx, NY; vs. 29.5% of Dominicans in Bronx, NY; vs. 21.2% of Mexicans in San Diego, CA). A previous publication noted that the diet scores were much better in the Mexican Americans than in the Dominicans or the other populations. Dietary differences could potentially explain the variations in hypertension among the populations. It is also possible that the lower prevalence of hypertension among Mexicans and South Americans may be a function of genetic admixture (i.e., black, white, and Indian) and possibly lifestyle interactions.

Variation in the prevalence of hypertension, if not due to the above, could be related to novel determinants of blood pressure (BP) levels that are unique to ≥1 of the Hispanic populations in this study. It would be important to compare BP in the Hispanic subgroups to similar BP levels in countries of origin and try to relate BP levels, as noted, to genetic admixture, degree of acculturation, specific dietary factors, vascular structure, kidney function, and psychosocial stressors. Such studies will require much more in-depth investigation than in the parent study. Furthermore, differences in specific dietary factors as measured by metabolomics, proteomics, and amino acids, such as dietary amino acids, or differences in gut microbiology could account for differences in hypertension variation. The null hypothesis is that variation in hypertension among the Hispanic population in the study is a function of sampling of specific Census tracts and low response percentage, approximately 45%. Individuals who migrated from the high-density Census tracts would be excluded (i.e., acculturation and better education). The response to the examination (i.e., so-called white coat hypertension) could vary by center and specific Hispanic group.

The other new information provided in the Sorlie et al. article is the documentation of very poor control of hypertension (Table 2 in the Sorlie et al. article), consistent with hypertension control in other US populations. The estimate of the lower awareness, treatment, and control of BP is, in part, an artifact of sampling BP at only 1 time point. There is substantial within-individual variability in the measurement of BP. In individuals with lower BP at 1 time, the BP on average will progress toward higher levels on repeat measurement, whereas in individuals with higher BP, the BP will regress downward toward the mean or lower levels. There are many more individuals, especially in younger age groups, with BP in the lower levels (i.e., 120 or 130 to 139 mm Hg), who, at any 1 time, will have BP >140 mm Hg (i.e., progressing upward), than there are individuals with BP >140 mm Hg whose BP on repeat measurements will drop to <140 mm Hg. Thus, individuals with BP >140 mm Hg in this study who were classified as hypertensives will probably be found after repeat measurement to not have hypertension—that is, their BP level will regress downward to <140 mm Hg. The size of this effect is related to the within-individual variability of BP levels over time. Multiple measurements of BP over time are required to adequately classify individuals as hypertensives. Repeat measurement of BP over time is usually a better prediction of clinical events than a measurement at only 1 point.

A very critical question is whether observational studies can continue to follow participants with uncontrolled hypertension and then report the higher incidence of stroke, congestive heart failure, coronary heart disease, subclinical vascular disease, and brain vascular disease, including dementia. Untreated hypertensives are at higher risk. Should the National Heart, Lung, and Blood Institute or other funding agencies provide adequate antihypertensive
therapy and follow-up to maximize control of hypertension for the participants as a requirement for continuing such studies? Such an approach would be expensive and might preclude further observational studies. On the other hand, linkage of observational studies such as the Hispanic Community Health Study with public health and clinical programs might provide unique opportunities to test best approaches to maximize long-term antihypertensive drug therapies in high-risk populations. The recommendations in the article’s Discussion to follow the Hispanic cohorts to determine whether the Affordable Care Act will result in improvement in BP control is a novel idea that should be carefully evaluated.14

Control of hypertension has improved over time but is still inadequate. The approaches to maximize BP control in the community have been identified over at least 50 years. A standard drug protocol, frequent follow-up by well-trained community health workers, low- or no-cost drugs, and minimization of side effects substantially improved BP control.15,16

Control of BP, lipids, cigarette smoking, and diabetes will probably be the primary determinants of whether we can substantially reduce the disparities in morbidity and mortality among adults in the community. We do not need any more studies that document that uncontrolled high BP causes cardiovascular disease or that a high percentage of the United States population has uncontrolled hypertension and then do nothing about the findings.17–20

DISCLOSURE

The author declared no conflict of interest.

REFERENCES


