Achievement of Cardiometabolic Goals in Aware Hypertensive Patients in Spain
Implications for Population Health

Brent M. Egan

The article by Banegas et al published in the present issue of Hypertension provides important population-based data for improving cardiovascular health. The data from a population-based sample of adults in Spain during 2008-2010 include the clinical epidemiology of hypertension and concomitant cardiovascular risk factors, evidence-based pharmacotherapy for cardiovascular risk factor reduction and target organ protection, medical advice, and lifestyle factors.

This commentary addresses 3 aspects of their comprehensive report, including a comparison of data in Spain and the United States with regard to the following: (1) clinical epidemiology of hypertension; (2) prevalence of concomitant risk factors, risk factor values, and/or control levels among hypertensive patients; and (3) lifestyle factors. The commentary concludes with a discussion of strategies for improving cardiovascular health in the population.

Clinical Epidemiology of Hypertension in Spain (2008-2010) and United States (2005-2008)
The authors note the higher stroke incidence in Spain than in the United States probably reflects differences between the 2 countries in the clinical epidemiology of hypertension (Table 1).1-3 More specifically, the prevalence of hypertension is marginally higher in Spain than in the United States, whereas awareness, treatment, and control of hypertension are much lower in Spain than in the United States. Hypertension prevalence, awareness, and control were defined similarly in both countries (Table 1), although blood pressure was measured in triplicate in 2 sets of measurements separated by 90 minutes in the Spain cohort and in triplicate in only 1 set of readings in the US cohort. Blood pressure for each individual was determined by the mean of ≥3 of the last 5 readings in Spain and the mean of the second and third readings in the US report. Thus, differences between the 2 studies could potentially explain the modest differences in prevalence but are unlikely to account for the large differences in awareness, treatment, and control. Whereas the current data from Spain and the previous reports from the United States were not conducted in the same years, a very recent online publication indicates that the clinical epidemiology of hypertension in the United States did not change significantly from 2007-2008 to 2009-2010.4

Clinical Characteristics and Concomitant Risk Factors Among Hypertensive Patients in the 2 Countries
Although the mean age of hypertensive patients in both countries is similar, the proportion of men with hypertension is greater in Spain than in the United States (Table 2).1,3,5 In contrast, body mass indices, prevalent obesity, and prevalent diabetes mellitus are lower in Spain, whereas low-density lipoprotein cholesterol is lower in the United States. Among hypertensive patients in Spain, diabetes mellitus control, defined as a hemoglobin A1c <6.5%, is excellent at 59.6%. In contrast, among all of the diabetic patients in the United States, mean hemoglobin A1c values were 7.2% in 2007-2008,6 which is substantially above the hemoglobin A1c control goal of <6.5% in Spain.

Lifestyle Factors
Direct and indirect evidence in Spain and the United States1,7-9 suggest that the lifestyle patterns are deteriorating and contributing to the growing obesity epidemic in many countries. Few, if any, individuals in Spain and the United States are meeting objectives for healthy lifestyle patterns. The rising prevalence of overweight and obesity is a major driver of cardiometabolic risk. In the United States, ≥5% of lean, 25% of overweight, and 50% of obese adults have the metabolic syndrome.10 Prevalent metabolic syndrome rises from ≤15% in normotensive to 30% in prehypertensive and to 60% in hypertensive individuals.11

Lifestyle patterns in the population have a major impact on cardiovascular events. In the United States, age-adjusted coronary heart disease death rates declined from 800 to 500 per 100,000 individuals annually between 1965 and 1978. More than 50% of the decline in coronary heart disease mortality over that time was attributed to population lifestyle changes, including a reduction in salt and saturated fat intake, as well as in cigarette smoking.12

These observations are consistent with the work of Rose,13 which demonstrated that a relatively modest left (downward) shift in the risk of the population, affected by a public health mass strategy, can reduce morbidity and mortality more than a medical intervention applied to patients at the highest 5% to 10% of risk, that is, a high-risk strategy. What has occurred in the United States and globally over the past ≥30 years is that lifestyles patterns have generally worsened, that is, the public health mass strategy has not counterbalanced the increasing “access to excess” calories, passive entertainment, and labor-saving devices.14
The work by Banegas et al\(^1\) documents the high level of global cardiovascular risk among hypertensive patients in Spain, composed of one third of all adults. Another third of adults are likely prehypertensive and have cardiovascular disease risk 50% to 100% greater than adults with normal BP\(^1\). The population-based data highlight a major need for serious deliberations to effect an affordable, effective, and sustainable public health mass strategy, as well as highly efficient and effective healthcare delivery systems (medical strategy) to reduce the growing global burden of cardiometabolic risk and disease.

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### References

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