Letter to the Editor

Mind the Gap: Prevalence and Pathophysiology of Isolated Systolic Hypertension

To the Editor:
In the otherwise excellent editorial,1 Wilkinson and Cockroft make a few unfounded assertions:

1. That more than half of those aged ≥60 years have isolated systolic hypertension. This is not true in our population2 and probably not in any other population, unless treated hypertensives with complete diastolic blood pressure response and partial systolic response are considered; the large number of patients screened for the Systolic Hypertension in the Elderly Program (447,921 subjects aged 60 years and older) yielding only 4,736 participants is only one indication.3

2. They claim that in isolated systolic hypertension in the elderly there is no increase in peripheral resistance, yet the opposite was shown.4

3. Thus, the conclusion that “... isolated systolic hypertension and essential hypertension can no longer be viewed as the same condition ...” is in contradiction to Framingham’s study findings that at least 40% of subjects with isolated systolic hypertension had had diastolic hypertension in previous years.5

Although everyone would (and should) agree with most of their editorial, these points are unfounded and over-rated.

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References

In Reply:
We are pleased that Dr. Bursztyn enjoyed our editorial on isolated systolic hypertension.1 We believe it highlighted the importance of a serious medical condition that is both underdiagnosed and undertreated.

We would agree that the true prevalence of isolated systolic hypertension will vary between populations and also with the definition one uses. From the Framingham cohort,2 defining isolated systolic hypertension as a systolic pressure >160 and diastolic <90 mm Hg yields a prevalence of ~14% for men and 23% for women aged more than 60 years. However, using the Joint National Committee on Detection, Prevention, Evaluation and Treatment of High Blood Pressure definition of systolic ≥140 and diastolic <90 mm Hg, Franklin et al3 found that ~51% of subjects aged more than 50 years in the National Health and Nutrition Examination Survey study had isolated systolic hypertension. Moreover, given that the prevalence of isolated systolic hypertension increases considerably with age,2 it might be expected that a substantially larger proportion of the individuals aged over 70 years would be affected. Therefore, it is somewhat surprising that Bursztyn et al4 only reported an incidence of 5% for isolated systolic hypertension in an Israeli population. A number of explanations for this disparity exist, including the rather small sample size, 448 of the Israeli study, ethnic considerations, and perhaps the unusual method of blood pressure assessment—averaging lying and standing pressures—used by Bursztyn et al.

Although peripheral vascular resistance was assessed in 23 patients with systolic hypertension in the study by Varden et al,5 to which Dr. Bursztyn refers, no direct comparative measurements whatsoever were undertaken in age-matched normotensive subjects. Therefore, it is difficult to draw any conclusion regarding differences in peripheral vascular resistance between those with isolated systolic hypertension and those older individuals who remain normotensive. However, in a well-controlled study involving both older and younger patients with systolic hypertension, Simon et al6 demonstrated that peripheral vascular resistance was no different between patients and controls. Nevertheless, arterial stiffness was increased in the older subjects with systolic hypertension, which may, in part, explain why isolated systolic hypertension is often resistant to therapy with conventional antihypertensive agents targeted at resistance vessels.

Dr. Bursztyn’s final criticism centers on whether isolated systolic hypertension and essential hypertension are different entities. We stand by our assertion that they are...