Ambulatory Arterial Stiffness Index Is Not a Specific Marker of Reduced Arterial Compliance

To the Editor:

The Ambulatory Arterial Stiffness Index (AASI) is a newly described ambulatory blood pressure measure–derived predictor of cardiovascular outcome. The proposition that AASI is a noninvasive measure of arterial stiffness already elicited some criticism.1,2 Schillaci et al,3 who explored the determinants of AASI among untreated hypertensive subjects, concluded that AASI is strongly dependent on the degree of nocturnal blood pressure fall and that AASI is correlated with neither a widely accepted measure of aortic stiffness nor with the left ventricular mass after proper adjustment for confounding factors.

Although we fully accept the authors’ conclusion that AASI cannot be considered a genuine measure of arterial stiffness, we wish to provide an argument suggesting that the link between AASI and dipping is secondary to a more fundamental relationship. We have discovered recently that dipping, measured as a continuous variable, is tightly associated with the degree of correlation (r) between the systolic and diastolic pressures (P<0.00001 with 133 patients (Gavish et al, unpublished abstract, 2007). Calculation of AASI by standard regression produces a considerably overestimated diastolic-on-systolic slope. Erroneously, this overestimation inversely depends on r (Gavish et al, unpublished abstract, 2007). This statistical artifact disappears when using a symmetric type of regression.4 Thus, the dipping-dependent nature of AASI noted by Schillaci et al3 is secondary to its avoidable correlation with r, which is the true correlate of dipping. Recalculating AASI in accordance with our proposed analysis can easily test the potential relevance of this rationale.

Disclosures

None.

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