Association Between Pulse Pressure Values During the Acute Stroke Stage and Stroke Outcome

To the Editor:

We read with great interest the recent Research Report by Aslanyan et al.1 The authors reported that elevated weighted average pulse pressure (PP) during the first 60 hours of ischemic stroke was independently associated with poor outcome assessed by mortality, Barthel index, National Institutes of Health Stroke Score and modified Rankin Scale score. Elevated baseline PP was associated with Barthel Index and Rankin score but not with mortality. Weighted average PP was the only blood pressure (BP) component to be consistently associated with all outcome measures.

We have also evaluated the prognostic value of the different BP components in 198 patients with acute stroke (146 cases with cerebral infarction and 42 cases with intracerebral hemorrhage) by means of 24-hour BP-monitoring.2 Our results indicated an independent association between increasing 24-hour PP levels and 1-year mortality after correcting for stroke risk factors, stroke subtypes, clinical (stroke severity and level of consciousness) and radiological characteristics (brain edema, mass effect and hemorrhagic transformation). Higher PP levels on hospital admission were related to an increased risk of 1-year mortality on univariate analysis, but in the multivariable Cox-regression model this association did not retain its statistical significance. This finding underlines the superiority of 24-hour BP variables over admission BP measurements in predicting stroke outcome. It is in keeping with the results of Aslanyan et al and other investigators, which indicate that variables describing BP course during the acute stroke period, such as 24-hour,2,3,4 beat-to-beat5 and weighted average1 BP recordings correlate more strongly and independently with stroke outcome.

On the other hand, other studies failed to document any association between PP levels in acute stroke and early5 or late outcome.4 Since, antihypertensive medication have been shown to have a differential effect on conduit vessel stiffness and to selectively alter the different BP components,6–8 we believe that the prognostic impact of PP levels at baseline and especially during the first hours of ictus on stroke outcome needs further clarification. An increasing body of evidence suggests that raised BP levels following acute stroke may not be a benign phenomenon and are associated with adverse prognosis.9 However, before embarking in a large randomized, placebo-controlled trial the question of whether the lowering of the pulsatile, the steady or both BP components in acute stroke might improve outcome remains to be answered.

Konstantinos N. Vemmos, MD
Acute Stroke Unit
Department of Clinical Therapeutics
University of Athens
Athens, Greece

Georgios Tsivgoulis, MD
Konstantinos Spengos, MD
Department of Neurology
University of Athens
Athens, Greece


Does Preventing Stroke Prevent All Kinds of Dementia?

To the Editor: The recent publication in Stroke regarding dementia after stroke4 makes interesting observations. However, there are some points in the article to which I would like to draw attention.

First, the subgroup analysis in the text mentions that the e4 allele for apolipoprotein E (ApoE) genotype was present in 17.3% of the cases and in 22% of the controls. Table 1 in the article seems to have a printing error in that the above percentages have been reversed in the table (ie, 22% of cases and 17% of controls have e4 allele for ApoE genotype).

Second, the changing denominators in Table 1 show that a lot of baseline data were actually missing. A mention of this would have been appropriate in the limitations of the study.

Last, it seems logical to conclude that the prevention of stroke would reduce the burden of vascular dementia. The authors conclude that primary and secondary prevention of stroke should significantly decrease the risk of all dementia. I wonder how valid that observation could be. It is true that a proportion of stroke cases had Alzheimer disease (AD), but the proportion of AD still remained higher among controls. There is no statistical
Association Between Pulse Pressure Values During the Acute Stroke Stage and Stroke Outcome

Konstantinos N. Vemmos, Georgios Tsivgoulis and Konstantinos Spengos

Stroke. 2004;35:2436; originally published online October 14, 2004;
doi: 10.1161/01.STR.0000145486.71701.8c

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://stroke.ahajournals.org/content/35/11/2436.1