Relationship Between Stroke Subtypes and Morning Surge or Dipping Pattern

To the Editor:

We read with interest the article by Verdecchia et al demonstrating that a blunted morning ambulatory blood pressure surge (MABPS) was an independent predictor of cardiovascular disease in the Progetto Ipertensione Umbria Monitoraggio Ambulatoriale (PIUMA) study. Furthermore, cardiovascular risk was increased in reverse dippers and nondippers.

Kario reported that a high MABPS was a risk for stroke in their cohort of elderly hypertensive individuals who were older than those in the PIUMA study (72.2 versus 50.8 years). This might have resulted in the higher threshold of the top decile of MABPS among their patients (55 versus 44 mmHg). However, Verdecchia et al further reported that the risk of cardiovascular events declined with higher levels of MABPS, regardless of age.

In the International Database on Ambulatory Blood Pressure in Relation to Cardiovascular Outcome (IDACO; mean age, 53.0 years) study, the top decile of MABPS (≥37.0 mmHg) was independently associated with cardiovascular risk only when the nocturnal decline of blood pressure was simultaneously included (P=0.01). The Ohasama study (mean age, 61.1 years) indicated that nondippers and risers had a significantly higher risk for cerebral infarction compared with dippers and extreme dippers (relative hazard, 1.59; P=0.04). An MABPS was not associated with cerebral infarction (P for trend=0.94), whereas an MABPS and a large nocturnal decline in blood pressure were associated with cerebral hemorrhage (P≤0.04), and the threshold for a high MABPS was similar to that in the PIUMA study (25.0 versus 27.5 mmHg).

Exaggerated MABPS is likely to be a risk for cardiovascular disease in a specific population, but not in the general population. Nevertheless, the associations of each stroke subtype with MABPS or dipping pattern would be different. Therefore, we would like to understand the association of stroke subtypes with MABPS and the dipping pattern among the PIUMA patients. We would also like to know the association between cardiovascular risk and MABPS when the degree of nocturnal decline in blood pressure is simultaneously included as in the IDACO study.

Disclosures

None.

References

Relationship Between Stroke Subtypes and Morning Surge or Dipping Pattern
Miki Hosaka, Kei Asayama, Yutaka Imai and Takayoshi Ohkubo

*Hypertension*. 2013;61:e21; originally published online December 24, 2012;
doi: 10.1161/HYPERTENSIONAHA.111.00247

*Hypertension* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2012 American Heart Association, Inc. All rights reserved.
Print ISSN: 0194-911X. Online ISSN: 1524-4563

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://hyper.ahajournals.org/content/61/2/e21

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Hypertension* can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to *Hypertension* is online at:
http://hyper.ahajournals.org//subscriptions/