

# Letter to the Editor

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## Response to Letter Regarding Article, “Antihypertensive Drug Use, Blood Pressure Variability, and Stroke Risk in Older Adults: Three-City Cohort Study”

We thank Nagai et al<sup>1</sup> for their commentary on our blood pressure variability (BPV) study, which reported that  $\beta$ -blocker and angiotensin-II receptor blocker (ARB) use increased stroke risk, especially the ischemic stroke subtype.<sup>2</sup> Our study did not stratify analyses by antihypertensive drug classes because we analyzed all drugs concomitantly, thereby accounting for polytherapy, which occurred in 36.9% of the sample. We did, however, show that ARB users had significantly higher mean systolic blood pressure, systolic BPV, and BPV<sub>reg</sub> (Table I in the online-only Data Supplement). As we<sup>2</sup> and Nagai et al<sup>1</sup> have stated, the association between stroke and  $\beta$ -blocker use is better documented than the association between ARB use and stroke. Nagai et al<sup>2</sup> posit that arterial stiffness is a pivotal moderator for the relationship between BPV and stroke in ARB users. This seems plausible because BPV was associated with arterial stiffness in users of renin–angiotensin system inhibitors (n=59) but not non–renin–angiotensin system inhibitor users (n=105). However, claim by Nagai et al<sup>1</sup> is based on as yet unpublished data. Unfortunately, we are not aware of any empirical study

showing that arterial stiffness in users of ARBs, but not other antihypertensive drugs, increases the risk of stroke. Indeed, the mechanisms underlying ARB use and stroke risk are less well understood and merit further study.

## Disclosures

None.

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1. Nagai M, Dote K, Kato M. Letter by Nagai et al regarding article, “Antihypertensive drug use, blood pressure variability and stroke risk in older adults: Three-City Cohort Study.” *Stroke*. 2016;47:e195. doi: 10.1161/STROKEAHA.116.013656.
2. Tully PJ, Debette S, Dartigues JF, Helmer C, Artero S, Tzourio C. Antihypertensive drug use, blood pressure variability and stroke risk in older adults: Three-City Cohort Study. *Stroke*. 2016;47:1194–1200. doi: 10.1161/STROKEAHA.115.012321.

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