Letter by Kawada Regarding Article, “Sleep Fragmentation, Cerebral Arteriolosclerosis, and Brain Infarct Pathology in Community-Dwelling Older People”

To the Editor:

Lim et al.1 examined the relationship between sleep fragmentation and the histopathologic measures of cerebrovascular disease using data from 315 autopsied older inhabitants. The authors used actigraphy for the measurement of sleep fragmentation before death and the severity of vascular pathology and the presence/absence of brain infarct after death at autopsy. Ordinal logistic regression models were adopted to analyze the relationships, and they concluded that sleep fragmentation was significantly associated with arteriolosclerosis and the presence of subcortical infarcts. I have some queries on their study.

First, the authors handled data from autopsy cases, and there is a need for a discussion on the representativeness of the sample for community-dwelling older inhabitants. The autopsy rate is important for their analysis. Although it has been reported that ≈90% of deceased inhabitants by stroke are examined by autopsy,2 if the rate was not so high, the study outcome could only be applied to limited cases.

Second, the authors handled the data of inhabitants with a mean age at death of 90.4 years. I understand that the authors conducted several adjustments to analyze the association between sleep fragmentation and the histopathologic measures of cerebrovascular disease. However, the target inhabitants were old, and aging could be speculated to be strongly associated with sleep disorders and cerebrovascular disease. Taken together, an indirect relationship via aging is plausible. Although there is no special way to determine the causal association, Cox regression analysis or path analysis would be alternative statistical models to speculate the causal association.

Finally, the validity of the sleep fragmentation index should be specified by further study. I appreciate that the authors have intensively reported on a specific indicator of sleep fragmentation by actigraphy,3 which was also applied to older inhabitants with cognitive impairment.4,5 However, there are many causes of sleep fragmentation in older inhabitants, and caution should be paid to the validity of the sleep fragmentation index determined by actigraphy in subjects with insomnia.

Disclosures

None.

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