

Letter to the Editor

Barometric Pressure in Cerebral Amyloid Angiopathy: A Pressure to Bleed?

We read with interest the study by Garg et al [1] which concluded that barometric pressure influences the incidence of spontaneous intracerebral hemorrhage (sICH).

First, current literature suggests that weather changes, particularly air and barometric pressure have a significant effect on the incidence of hypertension-related subgroup of sICH. [2,3] The mechanism for increase in hypertensive-sICH, although unclear, is postulated to be due to the sudden rise in arterial blood pressure with barometric pressure drops. [3] However, no such pathophysiological correlation has been established specifically with cerebral amyloid angiopathy (CAA) to the best of our knowledge. Could absolute barometric pressure or air pressure variations influence the incidence of sICH in a normotensive patient aged greater than 55 years with isolated focal or disseminated cortical superficial siderosis on brain magnetic resonance imaging? Such a patient fits into the 'possible CAA' according to the validated modified Boston criteria. [4] It is unclear in this study [1] how CAA-related sICH is affected by barometric pressure. It would be worthwhile to look exclusively at the subset of patients (13.4%) [1] with 'possible/probable CAA' to assess if barometric pressure has a significant effect on the incidence, and by extension, uncover a novel pathological pathway to the formation of sICH.

Second, while the authors have excluded sICH due to coagulopathy for the study [1], it remains unclear how many patients were under antithrombotic therapy for any reason. Selected studies have suggested that prior antiplatelet use (mostly aspirin) [5] and vitamin K-antagonists like warfarin [6] may be independently associated with the development and increase in prevalence of hemorrhagic small vessel markers called cerebral microbleeds. On the other hand, a previous retrospective study posited that a higher frequency of cerebral microbleeds in the lobar region suggests a vascular niche with thicker vessel walls that confer protection from acute bleeding in the event of lobar sICH. [7] Therefore, are patients with lobar microbleeds on magnetic resonance imaging with at least 'possible CAA', with a history of antithrombotic use at a higher or lower risk of sICH due to barometric pressure drops? Future studies of CAA-

related sICH patients with comparable bleeding risk might help answer this question.

Conflict of Interest

All authors have nothing to declare.

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