Editorial

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Editorial on Scope of Hypertension

Jean K. Ho

University of California, California

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Hypertension is an established risk factor for cognitive decline and dementia in older adults, highlighting the potential importance of antihypertensive treatments in prevention efforts. Work surrounding antihypertensive treatments has suggested possible salutary effects on cognition and neuropathology. Several studies have specifically highlighted renin-angiotensin system drugs, including AT1-receptor blockers and angiotensin-converting-enzyme inhibitors, as potentially benefiting cognition in later life. A small number of studies have further suggested renin-angiotensin system drugs that cross the blood-brain barrier may be linked to lower dementia risk compared to their nonpenetrant counterparts. The present meta-analysis sought to evaluate the potential cognitive benefits of blood-brain barrier crossing renin-angiotensin system drugs relative to their nonpenetrant counterparts. We harmonized longitudinal participant data from 14 cohorts from 6 countries (Australia, Canada, Germany, Ireland, Japan, United States), for a total of 12 849 individuals at baseline, and assessed for blood-brain barrier crossing potential within antihypertensive medications used by cognitively normal participants. We analyzed 7 cognitive domains (attention, executive function, language, verbal memory learning, recall, mental status, and processing speed) using ANCOVA (adjusted for age, sex, and education) and meta-analyses. Older adults taking blood-brain barrier-crossing renin-angiotensin drugs exhibited better memory recall over up to 3 years of follow-up, relative to those taking nonpenetrant medications, despite their relatively higher vascular risk burden. Conversely, those taking nonblood-brain barrier-penetrant medications showed better attention over the same follow-up period, although their lower vascular risk burden may partially explain this result. Findings suggest links between blood-brain barrier crossing renin-angiotensin drugs and less memory decline.