PERSPECTIVES IN HYPERTENSION

Orthostatic hypertension and frailty in elderly hypertensives

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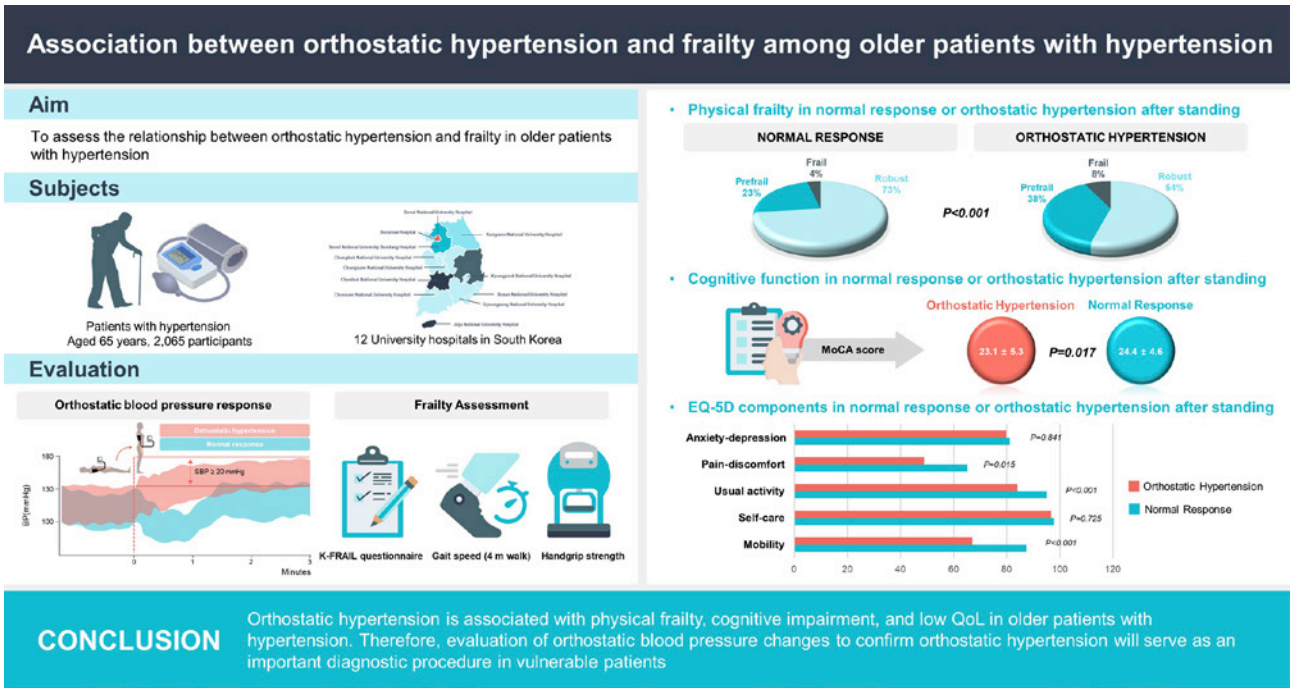
Hypertension is a very common chronic condition, with its prevalence continuously increasing due to rapid population aging. It is one of the most significant socioeconomic burdens and a leading cause of premature cardiovascular complication and death worldwide. Trends show that individuals aged ≥80 years will be the fastest-growing segment of the population in the near future. In managing hypertension among the oldest-older patients, several specific factors should be considered including frailty, multiple comorbidities, polypharmacy, cognitive impairment, depression, disability, dizziness, syncope and falls.[1] Assessing frailty, physical function, activity of daily living and cognitive function is described as an essential component to determine intensity of treatment and autonomy of older hypertensive patients in national and international guidelines (European Society of Hypertension 2023 guideline).[2] In people with orthostatic hypertension, blood pressure rises despite those processes. Recent proposals suggest that orthostatic hypertension could be defined as an increase in systolic blood pressure greater than or equal to 20 millimeters of mercury (mm Hg) and upright systolic blood pressure of ≥140 mm Hg when going from lying down to standing.[3] In a recent paper published in Hypertension, we reviewed the association between orthostatic hypertension and frailty, cognitive function and quality of life.[4] We hope this will drive future discussions to include comprehensive geriatric assessment for older hypertensive patients in hypertension guidelines.

This is an analysis of the study participants of the HOWOLD-BP trial (How to Optimize Elderly Systolic Blood Pressure), which was a prospective, multicenter, open-label randomized clinical trial to compare the optimal target blood pressure for older Korean patients with hypertension.[5] In older patients, frailty and hypertension often coexist. To investigate the relationship between frailty and orthostatic hypertension in older hypertensive patients in Korea, we measured blood pressure in both supine and standing positions and assessed the degree of physical frailty, cognitive function and quality of life in 2,065 patients recruited from 12 university hospitals. As a result of the orthostatic blood pressure test, 91.3% showed normal responses, while 4.6% of the patients were observed to have orthostatic hypertension and 4.1% of the elderly hypertensive patients were observed to have orthostatic hypotension. In the group with normal orthostatic blood pressure response, 23% were pre-frail and 4% were frail. In contrast, among the patients with orthostatic hypertension, 38% were pre-frail and 8% were frail ($p < 0.001$). Patients with orthostatic hypertension had significantly lower scores on the Montreal Cognitive Assessment compared to the normal group, 23.1±5.3 versus 24.4±4.6; $p = 0.017$) indicating cognitive decline. A higher proportion of these patients also had slower gait speed and weaker grip strength. (25.5% vs. 15.1%, $p = 0.024$) Additionally, their health-related quality of life, as measured by the EQ-5D index (mobility, self-care, usual activities, pain/discomfort, anxiety/depression), was found to be significantly reduced. (0.89±0.11 vs. 0.94±0.09, $p < 0.001$)

Orthostatic hypertension is associated with exaggerated sympathetic response, leading to excessive vasoconstriction and increased peripheral vascular resistance. Previous studies demonstrated orthostatic hypertension is associated with increased cardiovascular



risk, silent cerebral infarctions and advanced white matter lesions, and ultimately, increased mortality.[6-8] In our present study, frail older hypertensive patients were more likely to have impaired autonomic function, consistent with previous studies.[9] Measuring orthostatic blood pressure, including both orthostatic hypotension and orthostatic hypertension, will serve as an important diagnostic procedure for identifying vulnerable older hypertensive patients. To our knowledge, this is the first study to report the association between orthostatic hypertension and frailty. Further studies are needed to obtaining generalizability and identifying the clinical significance of orthostatic hypertension in frail older hypertensive patients.

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