



The study on cognitive impairment in hypertensive individuals in ambulatory care (Cherry study)

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Abstract

The Cherry study is a multicenter cohort investigation aimed at exploring the prevalence and underlying factors of cognitive impairment in elderly hypertensive patients. A total of 312 hypertensive patients aged 65 and above, receiving outpatient care, were examined, revealing that approximately one-third of these patients exhibited cognitive impairment based on cognitive function assessments. Advanced age and reduced instrumental activities of daily living (IADL) were associated with cognitive impairment. The patients with cognitive impairment had relatively preserved IADL, despite a higher number of antihypertensive medications when comparing with patients in the national cohort of mild cognitive impairment.

Background & Results

Background:

Hypertension, affecting more than half of individuals aged 65 and older, is the most common noncommunicable disease in the older population. Cognitive impairment in hypertensive patients can influence factors such as medication adherence and the risk of falls. However, detecting cognitive impairment without apparent symptoms remains challenging. The Cherry study, conducted across six core hospitals nationwide, aimed to elucidate the relationship between hypertension and cognitive decline and optimize patient care. This research employed initial registration data from the Cherry study to investigate the reality of cognitive impairment in hypertensive patients.

Results:

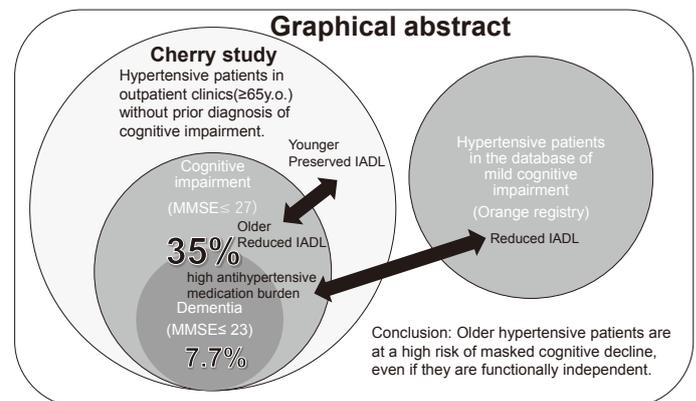
Among 312 hypertensive patients receiving outpatient care, 35% (n=109) and 7.7% (n=24) met the criteria for cognitive impairment or dementia, defined by MMSE scores ≤ 27 and ≤ 23 , respectively. Patients with cognitive impairment were older and had lower educational levels compared to those without. Patients with cognitive impairment had lower basic activities of daily living (ADL) and instrumental ADL (IADL) scores. There was no significant difference in hypertension management between the two groups. Patients with cognitive impairment exhibited reduced grip strength and walking speed. Multivariate logistic regression analysis revealed that high age and low IADL scores were associated with cognitive impairment. When compared to the national cohort of mild cognitive impairment, no significant differences in age, gender, education level, or MMSE scores were observed, but Cherry study registrants had higher prevalence of diabetes, dyslipidemia, and severer hypertension, with relatively preserved IADL.

Significance of the research and Future perspective

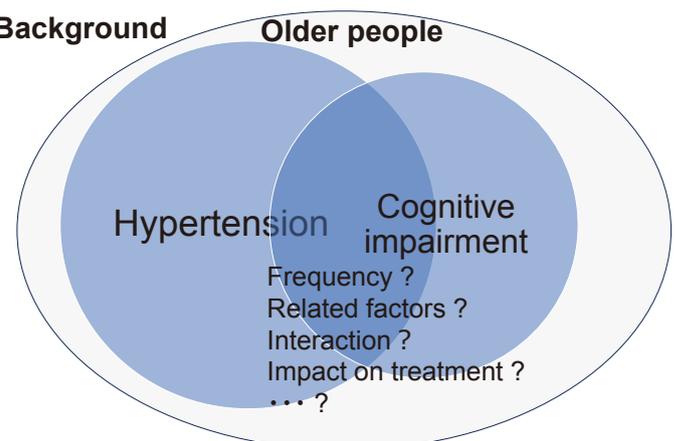
This study revealed that older hypertensive patients frequently have undiagnosed cognitive impairment. Similar findings have been reported in diabetes patients, underscoring the importance

of lifestyle disease management with a heightened awareness of age-related cognitive decline. The Cherry study's longitudinal investigation has yielded results suggesting the involvement of muscle weakness in the progressive deterioration of cognitive function, raising the possibility of a condition termed "cognitive frailty" that warrants further exploration. Additionally, the development of simpler cognitive function assessments for screening purposes is needed, and our research lab is actively working on methods to simplify assessments of cognitive and physical function.

Graphical abstract



Background



Patent

Treatise

URL

Keyword

Yamamoto, Koichi; Akasaka, Hiroshi; Rakugi, Hiromi et al. Clinical characteristics of older adults with hypertension and unrecognized cognitive impairment. *Hypertens Res.* 2022, 45(4), 612-619. doi: 10.1038/s41440-022-00861-z

hypertension, cognitive impairment, geriatrics