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Antihypertensive drugs, prevention of cognitive decline and dementia: A systematic review of observational studies, randomized controlled trials and meta-analyses with discussion of potential mechanisms

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Background: Chronic hypertension particularly midlife high blood pressure has been associated with an increased risk for cognitive decline and dementia. In this context, antihypertensive drugs might have a preventive effect but the association remains poorly understood.

Objectives & Methods: The aim of our systematic review was to examine all published findings that investigated this relationship and discuss the mechanisms underlying the potential benefits of antihypertensive medication use. We conducted a literature search using Medline, Embase and the Cochrane Library.

Results: 18 longitudinal studies, 11 randomized controlled trials and 9 meta-analyses were identified from the 10.251 articles retrieved in the literature search. In the 7 longitudinal studies assessing the effect of antihypertensive medication on cognitive impairment or cognitive decline, antihypertensive drugs appeared to be beneficial. Of the 11 longitudinal studies that assessed the effect of antihypertensive medication on incidence of dementia, only 3 did not find a significant protective effect. Antihypertensive medication could decrease the risk of not only vascular dementia but also Alzheimer's disease. 4 randomized controlled trials showed a potentially preventive effect of antihypertensive drugs on the incidence of dementia or cognitive decline. Meta-analyses have sometimes produced conflicting results but this may be due to methodological considerations.

Conclusion: Antihypertensive drugs particularly calcium channel blockers and renin-angiotensin system blockers may be beneficial in preventing cognitive decline and dementia not only by lowering blood pressure but also through a neuroprotective specific effect. However, further randomized controlled trials with longer periods of follow-up and cognition as the primary outcome are needed to confirm these findings.

Biography

Laure Rouch has completed her PharmD and was appointed University Hospital Assistant in 2013 in Toulouse, France. She is a PhD student at the INSERM 1027 Unit. As a Clinical Pharmacist, she works with geriatricians especially in an Alzheimer's care unit. She has been teaching clinical pharmacy since 2011. She is currently working as research fellow in Epidemiology on dementia. She is mainly interested in the relationship between antihypertensive drugs, cognitive decline and dementia. She also works on care management of dementia, potentially inappropriate drugs in the elderly and frailty. She has published in reputed scientific journals and has been asked to review papers in the field of antihypertensive therapy.

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