

Safe Treatment Of Hypertension To Guideline Targets In Nonagenarian Vascular Dementia

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Introduction

More than 60 % of those over the age of 70 have hypertension, yet two-third receive no treatment or are not treated to meet current hypertension guideline criteria ($\leq 140/90$ mm Hg), even in case of secondary prevention [1]. Although there is evidence that blood pressure lowering in older adults effectively reduces cardiovascular risk [2], there remains concern that treatment may not confer any mortality benefit [3], whilst it could have unfavorable side-effects, including cerebral hypoperfusion. Recently, data from the HYVET study indicated that treatment of hypertension in patients aged 80 and over reduces stroke, heart failure and mortality [4]. However, trial participants were relatively healthy, and blood pressure was not rigorously lowered to meet guideline criteria.

This case study reports on the outcome of hypertensive treatment in a very old subject with cerebrovascular co-morbidity.

Case Report(s)

A 94- year old woman was diagnosed in our memory clinic with mild vascular dementia (CDR 1, NINCDS-AIREN: probable VaD). She had a history of hypertension, for which she received hydrochlorothiazide 12.5 mg/day, and a possible TIA that had not been further evaluated. She had played tennis into her late eighties, and had moved to an elderly home, requiring little formal care, after a hip fracture in 2004. In the past year, she had developed impairments in memory and executive functioning. Her MMSE score was 19, her CAMCOG (Cognitive part of the Cambridge Examination for Mental Disorders of the Elderly) score was 72 out of a maximum score of 104; memory: 19 of 37 points, executive function: 14 of 28 points, with a Geriatric Depression Scale score of 2 of 30. The Barthel index for ADL was 80 of 100. Carotid ultrasound evaluation showed plaques, but no significant stenosis. Her MRI displayed diffuse white matter disease, with a lacunar infarction, as well as central and cortical atrophy (fig 1). Blood pressure was

210/100 mmHg sitting 190/100 mm Hg standing on both sides on first measurement, and 190/90 mm Hg sitting and standing with repeated measurements after 4, 8 and 12 weeks, during which time medication compliance was ascertained.

There were no clear indicators for a very limited life expectancy, and this patient experienced a good quality of life and had a reasonably good functional ability. Because of the high risk of stroke with resulting disability, her blood pressure was reduced to 140/80 mmHg within a period of 3 months, by adding perindopril (starting dose 2 mg, final dose 4 mg per day). During follow-up, there was no orthostatic hypotension, and there were no falls or dizziness. 12 months after initiation of therapy, she was cognitively and functionally stable, showing no decline in test scores, although her caregiver noted some further impairment in memory in her everyday contact. Repeated MRI (fig 1) showed no progression of white-matter disease, and no new lacunar or cortical infarction. Renal function was stable.

Discussion

Regarding prevention of stroke, old patients with cerebrovascular disease have most to gain from antihypertensive treatment. However, they are also perceived as having most to lose from such therapy, because of the widespread belief that the aged brain, due to stiffened and stenotic arteries, needs elevated blood pressure to maintain adequate perfusion. This perception is not, however, substantiated by our physiological knowledge of cerebral autoregulation [5], nor by the available evidence in patients up to 75 years old showing normal autoregulation in hypertension [6].

Conclusion

This case-report in a very old patient with known cerebrovascular disease suggests stable cerebral perfusion despite rigorous blood pressure lowering, as evidenced by stable vascular lesions on MRI, stable

cognitive function, and absence of dizziness or falls. Awaiting further trials, we may be able to prevent disabling comorbidity by critically asking ourselves in each individual patient: which arguments do I have not to aim for blood pressure values within guideline targets?

Abbreviations(s)

HYVET: Hypertension in the very elderly trial

CDR: clinical dementia rating scale

NINCDS-AIREN: National Institute of Neurological Disorders and Stroke (NINDS) Association Internationale pour la Recherche et l'Enseignement en Neurosciences

VaD: vascular dementia

MMSE: mini mental state examination

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