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Category: Care of the older person

Study type: Cohort study

Declarative title: Antihypertensive medications may reduce the risk of dementia in older African-Americans with hypertension

Citation: Murray MD, Hendrie HC, Lane KA, et al. Antihypertensive Medication and Dementia Risk in Older Adult African Americans with Hypertension: A Prospective Cohort Study. J Gen Intern Med. 2018 Apr;33(4):455-462

Commentary

Implications for practice and research

- Treatment for hypertension to target blood pressure in community dwelling African-Americans aged over 65 was associated with a reduced incidence of all-cause dementia.
- This study provides further suggestion that lower blood pressure in late middle age is associated with a reduced risk of developing dementia in later life.
- There is no indication on the basis of these findings to modify current guidance on blood pressure management in older people.
- Interpretation of this study's findings is hampered by methodological issues. Future research examining the association between antihypertensive use and incident dementia should adopt an approach which avoids these complexities.

Context High blood pressure is very common amongst older adults,¹ with blood pressure increasing into middle age and then falling towards the end of life ². It is often regarded as the most important cardiovascular risk factor with the greatest impact on mortality³. High blood pressure is a risk factor for developing dementia⁴ raising the hypothesis that treatment to lower blood pressure may also lower the risk of developing dementia in later life. The aim of this study was to assess the effect of antihypertensive medications on the incidence of dementia in a cohort of African-Americans.

Methods

A cohort of community dwelling African-Americans was recruited at two different time points (1992 and 2001) as part of the Indianapolis Ibadan Dementia Project (IIDP). Participants were followed up over a maximum period of 24 years and underwent a screening evaluation for cognitive impairment every 2 to 3 years. This also included blood pressure measurements from 1997 onwards. Participants with a positive screen underwent more detailed clinical evaluation and dementia was diagnosed according to standard internationally recognized criteria if appropriate.

For this study a subgroup of participants was selected who had a history of hypertension (either self-reported or based on electronic medical records) and had made at least three visits to a primary care physician. Participants with a diagnosis of dementia at baseline were excluded. Prescription data was derived from electronic records.

Findings

A total of 1236 people took part in the study out of an original cohort of 4105. Of this group 114 (9%) went on to develop dementia during follow up. Those who went on to develop dementia were older, had fewer years of education, and a higher blood pressure at baseline. Participants prescribed antihypertensives were found to have a significantly reduced risk of dementia (HR 0.57 (CI 0.37-0.88 $p=0.011$) compared to untreated individuals. This effect was no longer detected when adjustment was made for suboptimal blood pressure control (HR 0.65, 95% CI 0.32-1.3, $p=0.22$).

Commentary

This study found that increased age, fewer years of education and higher blood pressure were more common in people who developed dementia in this group during follow up. Exposure to antihypertensive medications when blood pressure was controlled to <140/90 in older African Americans was associated with decreased risk of dementia. However, we cannot be sure, on the basis of this study, of a causative association between exposure to antihypertensives and improved outcomes. The comparison group of those with diagnosed hypertension not on antihypertensive medications may be a significant source of bias and so interpretation should be with caution as further work is required. This is an important area of research and further work to test the effect of antihypertensive medication on risk of dementia which avoids similar methodological problems is warranted.

There are a number of methodological issues which potentially limit the interpretation of these findings. Participants were selected on the basis of self-reported hypertension. This is problematic as there is a significant risk of recall bias where memory of historic high blood pressure readings or historic diagnoses may have prompted a participant to be classified as hypertensive erroneously.

The use of a reference group with diagnosed hypertension but not on antihypertensives is also not ideal. Baseline blood pressures in the treated and untreated groups were not reported meaning that differences between these groups remain unclear to the reader. There is significant potential for confounding with this approach. For instance it is conceivable that antihypertensive medication may have been appropriately discontinued in an individual who has become normotensive or hypotensive. In addition, as antihypertensive medications are used to treat other conditions, there is potential for confounding by indication.

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