



Association between Hypertension and Vascular Dementia

3rd Year Basic Medical science Libyan International Medical University

Monia Omer Alzwie 2420

Supervised by Dr Ibtesam kaziri



Introduction

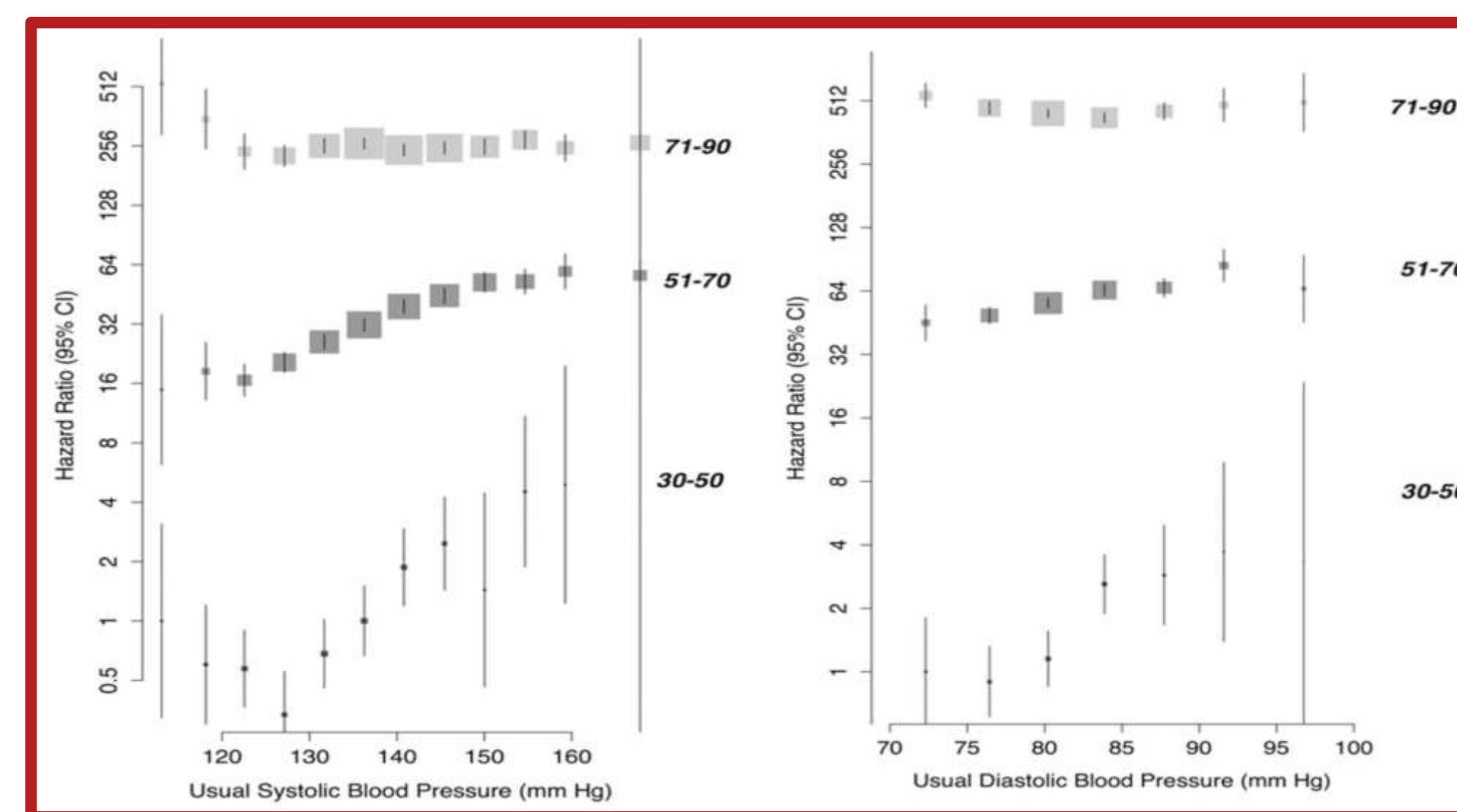
Vascular dementia is the second most common cause of Dementia and the rising frequency of the disease in developing countries. Vascular dementia is characterized by a loss in cognitive function, apathy, and depression, and can finally lead to death. It is most typically associated with vascular risk factors or after a transient ischemic attack (TIA) or stroke. Blood pressure has been discovered as a potential risk factor for vascular dementia, as well as a known causal risk factor for stroke. However, investigations on the link between blood pressure and vascular dementia have shown mixed results.¹

Methods

Patients were eligible for inclusion if they were between the ages of 30 and 90, inclusive, and had a blood pressure measurement performed at their general practice between January 1, 1990 and January 1, 2013. Patients also had to have their age recorded and registered for at least one year at a research-standard general practice. Body mass index (BMI), smoking status, total cholesterol, and HDL cholesterol are all baseline factors.¹

Results

During follow-up, 14 934 people were found to have vascular dementia. In the first four years of follow-up, 3820 of these presentations were documented and were omitted from the primary analysis. Within the age categories of 30-50 and 51-70, the relationship between normal SBP and the risk of vascular dementia appeared to be generally linear (Figure 1). Although there was no strong evidence of a nadir, floating risks appeared to peak at around 120 mm Hg SBP in both the 30-50 and 51-70 year age groups. In the age group of 71-90 years, however, there was no significant link between baseline SBP and floating chances of vascular dementia. With each age category, the strength of the connection per 20 mm Hg higher normal SBP decreased.^{1,2}



(Figure 1)

Discussion

A major strength of our study is the combination of the “big data” from the CPRD with the more deeply phenotyped prospective population-based data. Risk of dementia within 5-years of recruitment into OXVASC was unrelated to the most recent pre-morbid blood pressure, but no statistically significant negative associations were observed even in this group. Significant positive associations with both DBP and SBP were observed with measurements 5-9 years and 10-20 years prior to the TIA or stroke.

Previous studies have been limited by relatively small sample sizes and have provided conflicting results on the relationship between blood pressure and vascular dementia. In an analysis of the relationship between midlife blood pressure and vascular dementia, with 38 presentations of vascular dementia, SBP was significantly and positively related to the risk of vascular dementia. In contrast, in an analysis of 6668 participants aged 55 years and older with 46 presentations of vascular dementia, no significant association between SBP and risk of vascular dementia was observed.^{1,2,3}

Conclusion

Hypertension is thought to be directly associated with vascular dementia and preliminary evidence suggests an association between elevated blood pressure and impairments in cognitive functioning. Vascular dementias are potentially preventable and cases of Alzheimer's disease with vascular components are becoming increasingly recognized.

References

1. Emdin, C., Rothwell, P., Salimi-Khorshidi, G., Kiran, A., Conrad, N., Callender, T., Mehta, Z., Pendlebury, S., Anderson, S., Mohseni, H., Woodward, M. and Rahimi, K., 2022. Blood Pressure and Risk of Vascular Dementia.
2. Stroke. 2022. Blood Pressure and Risk of Vascular Dementia. [online] Available at: <<https://www.ahajournals.org/doi/full/10.1161/STROKE.AHA.116.012658>> [Accessed 16 January 2022].
3. Gabin, J.M. et al., 2017. Association between blood pressure and alzheimer disease measured up to 27 years prior to diagnosis: The hunt study - alzheimer's research & therapy. BioMed Central. Available at: <https://alzres.biomedcentral.com/articles/10.1186/s13195-017-0262-x>