Study examines midlife hypertension, cognitive change over 20-year period

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Hypertension in middle age (48 to 67 years) was associated with a greater, although still a modest, decline in cognition over a 20-year period compared with individuals who had normal blood pressure.

Evidence suggests hypertension is a risk factor for cognitive change and dementia and midlife hypertension may be the stronger risk factor.

Authors used the Atherosclerosis Risk in Communities (ARIC) study to examine the effects of hypertension by analyzing the results of three cognitive tests over time. Data from 13,476 participants (3,229 of whom were African American) were used and the maximum follow up was 23.5 years.

The decline in global cognitive scores for participants with hypertension was 6.5 percent greater than for individuals with normal blood pressure. An average ARIC participant with normal blood pressure at baseline had a decline of 0.840 global cognitive z score points during the 20-year period compared with 0.880 points for participants with prehypertension and 0.896 points for patients with hypertension. Individuals with high blood pressure who used medication had less cognitive decline during the 20 period than participants with high blood pressure who were untreated. A greater decline in global cognition scores also was associated with higher midlife blood pressure in white participants than in African Americans.

"Although we note a relatively modest additional [cognitive] decline

associated with hypertension, lower cognitive performance increases the risk for future dementia, and a shift in the distribution of cognitive scores, even to this degree, is enough to increase the public health burden of hypertension and prehypertension significantly. Initiating treatment in late life might be too late to prevent this important shift. Epidemiological data, including our own study, support midlife BP [blood pressure] as a more important predictor of – and possibly target for prevention of – late-life cognitive function than is later-life BP." Rebecca F. Gottesman, M.D., Ph.D., of the Johns Hopkins University School of Medicine, Baltimore, and colleagues said in their *JAMA Neurology* paper today.

In a related editorial, Philip B. Gorelick, M.D., M.P.H., of the Michigan State University College of Human Medicine, Grand Rapids, writes: "In this issue of JAMA Neurology, Gottesman and colleagues provide additional evidence to support the association between midlife hypertension and cognitive change. The study provides a unique opportunity to understand the role of raised BP on cognition during a 20-year period."

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