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Sustained blood pressure treatment lowers dementia risk in elderly

American Heart Association rapid access journal report

Maintaining high blood pressure treatment may reduce the risk of dementia in old age, researchers reported in the rapid access issue of *Stroke: Journal of the American Heart Association*.

Lead author of the study Rita Peila, Ph.D., an epidemiologist at the National Institute on Aging (NIA), said "For every year of hypertension treatment, there is increased protection against dementia."

Some physicians hesitate to treat hypertension in the elderly because of concerns that lowering blood pressure might impair cognitive functioning. However, clinical trials have shown no harmful effects on cognitive function in elderly patients undergoing hypertension therapy.

"Hypertension treatment in the very old -- those aged 80 and older -- protects against stroke, heart disease and heart failure, and now we see that there is no harm -- and perhaps a benefit -- on cognitive function," said Peila, who is also a scientist at the Pacific Health Research Institute in Honolulu.

Researchers analyzed data from the long-term Honolulu-Asia Aging Study on Japanese-American men born between 1900 and 1919. They focused on 848 men (ages 50-65) who had mid-life high blood pressure and were free of dementia at age 77 (on average). Then, at follow-up visits three and six years later, the men had a thorough diagnostic evaluation for dementia and took the Cognitive Abilities Screening Instrument, a well-recognized test of cognitive function in Japanese and Western populations.

Of the 848 men, researchers identified 142 who had never been treated for their hypertension and 706 who were being treated at the age 77 examination. Researchers divided the treated group based on the duration of treatment:

- 195 men were on medication for less than five years;
- 149 were treated from five to 12 years; and
- 362 men were treated for more than 12 years prior to the exam.

Researchers found that each year of treatment reduced the risk of developing dementia during the follow-up period by about 3 percent. Compared with men who were never treated for hypertension, the risk of developing dementia during the follow-up period was:

- 6 percent lower in those treated less than five years;
- 48 percent lower in those treated from five to 12 years;
- 60 percent lower in those treated more than 12 years -- similar to the risk in a control group of 446 men with normal blood pressure.

"We found protection against both Alzheimer's disease and vascular dementia," Peila said. "There is more and more recognition that there is a vascular component to Alzheimer's disease."

Long-term hypertension can damage blood vessels of the brain, and the brains of Alzheimer's patients often have tiny blood clots and small infarcts, she said.

While only 7.8 percent of the 848 men were diagnosed with dementia, even those who did not have dementia showed cognitive declines. But men who had untreated hypertension had significantly more cognitive decline than men with normal blood pressure and hypertensive men treated for at least five years.

"Even if you're very old, have your blood pressure checked and talk to your doctor about treatment if it is high," Peila said.

In the study, hypertension was defined as:

- 160 mmHg or higher systolic blood pressure (the pressure when the heart contracts to pump blood to the body); or

- 95 mm Hg or higher diastolic blood pressure (the pressure when the heart rests between beats).

This cutoff is higher than the current definition of high blood pressure (140/90 mmHg) but is the same as treatment guidelines used when the men were first evaluated (from 1965 to 1974).

The study did not assess the type of blood pressure medications used. Many men had been switched from one type of medication to another during the lengthy study.

Co-authors are Lon White, M.D., M.P.H.; Kamal Masaki, M.D.; Helen Petrovitch, M.D.; and Lenore J. Launer, Ph.D.

Researchers were from the NIA, the Pacific Health Research Institute, and the John A. Burns School of Medicine at the University of Hawaii at Manoa.

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