Abstract Title: Beta Blocker Treatment of Hypertensive Older Persons Ameliorates the Brain Lesions of Dementia Measured at Autopsy: the Honolulu-Asia Aging Study

Press Release Title: Can Blood Pressure Drugs Reduce the Risk of Dementia?

Objective: To examine the relationship of brain lesions and autopsy of treatment with a beta blocker, as compared with other drugs.

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Background: The HAAS is a community-based study of Japanese-American men aged 71-93 at baseline, conducted 1991-2012. Prior analyses identified elevated midlife blood pressure as a risk factor for Alzheimer's disease, cognitive impairment and Alzheimer brain lesions at autopsy. Midlife systolic pressure >120mm Hg was a predictor for 17-27% (population attributable risk) of subsequent dementia cases. While angiotensin receptor blockers and other treatments have been reported to reduce the development of dementia, comparisons with beta blockers are lacking. A concurrent analysis in HAAS subjects demonstrates a congruent amelioration of cognitive decline or impairment associated with beta blocker use, including but not limited to participants described in this report

Design/Methods: Of 774 autopsied men, 610 had been hypertensive or treated with anti-hypertensive drugs. Logistic and linear regression analyses took into account non-normal neuropathologic endpoint distributions while adjusting for age, baseline pressures and cognitive test score, follow-up interval, age at death, diabetes, apolipoprotein E genotype, midlife hypertension and treatment thereof.

Results: Autopsied HAAS subjects treated with beta blockers as the sole medication were found to have significantly fewer microinfarcts, less brain atrophy, and fewer Alzheimer brain lesions compared with decedents who had received other medications. Those who had received beta blockers plus other medications had intermediate or marginally fewer brain abnormalities.

Conclusions: Compared with other treatments, beta blocker use in HAAS participants was associated with lower levels of neuropathologic abnormalities associated with cognitive impairment and dementia.

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