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P4-039 CLINICAL AND MRI FACTORS FOR VASCULAR
DEMENTIA IN THE CARDIOVASCULAR HEALTH
STUDY COGNITION STUDY

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Background: The incidence and risk factors for vascular dementia (VaD) were examined in the 3,608 Cardiovascular Health Study Cognition Study (CHS-CS) participants, age 65+, who had a magnetic resonance imaging (MRI) of the brain in 1992–1994. **Objective(s):** We evaluated the incidence and determinants of VaD. **Methods:** Among the 3,375 non-demented cases followed until 1998-1999, there were 480 (13%) incident dementia cases, among which were 213 (44%) classified as having VaD. Classification of VaD was based on modified State of California Alzheimer's Disease Diagnostic and Treatment Center criteria. **Results:** The incidence of VaD increased with age from 3.3/1000/year at age <70 to 50/1000/year at age 80+ at entry to the study. Incidence rates for VaD were higher in men than women and in blacks compared to whites. In Cox survival analyses, lower education, diabetes, hypertension, apolipoprotein-E₄ and black race were independent predictors of VaD. History of stroke and incident stroke prior to the diagnosis of dementia were strong predictors of the risk of VaD. VaD risk was strongly related to the number of MRI-detected infarcts. Most of these were silent, 6.4/1000/year for those with no infarcts and 81/1000/year for those with 4+ infarcts; high white matter grade (WMG), 3.9/1000/year for those with WMG of 0 or 1 to 60/1000/year for those with a WMG of 7+; and for global brain atrophy, 2.9/1000/year for those with a grade of 1 to 48/1000/year for those with a grade of 7+. When the MRI variables were added to other risk factors in Cox proportional hazards models, education, diabetes and hypertension were no longer significant predictors of risk of VaD. **Conclusions:** The percentage of all dementia cases with a major vascular component is very high. Cardiovascular risk factors such as hypertension and diabetes are probably primary determinants of the MRI findings that determine the risk of possible VaD. The cardiovascular risk factors are both preventable and treatable. Thus, treatment of these risk factors could substantially decrease the incidence of dementia. Further clinical trials should focus on the prevention of the MRI-related vascular abnormalities and assess effects on the incidence of dementia.