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Long-term Hypertension Contributes to the Development of Alzheimer's Disease

2009 New Investigator Research Grant

High blood pressure (hypertension) is a known risk factor for Alzheimer's disease and the related condition known as vascular dementia. Although high blood pressure is not a sole cause of Alzheimer's disease, there is evidence that untreated high blood pressure causes changes in the vascular system of the brain. These changes lead to reduced blood flow in the brain, possibly contributing to declines in brain function.

Inga Kadish, Ph.D. and colleagues have found that high blood pressure causes worse accumulation of amyloid plaques in mice that have been genetically altered to express Alzheimer-like pathology. Because amyloid plaques are a hallmark feature of Alzheimer pathology, these results suggest that high blood pressure can worsen the development and severity of the disease. Dr. Kadish and colleagues have proposed to study whether high blood pressure in Alzheimer-like mice causes decreases in brain blood flow, and worsening of cognitive function and brain pathology. They will also treat the mice with drugs to reduce blood pressure to determine if such treatment slows the progression of Alzheimer-like pathology and cognitive decline. These studies will provide clues about whether aggressive treatment of blood pressure may be useful for slowing the progression of Alzheimer's disease in humans.