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UNIVERSITY OF MISSISSIPPI MEDICAL CENTER TO TAKE LEADING ROLE IN NEW $26 MILLION STUDY OF ALZHEIMER'S DISEASE AND COGNITIVE DECLINE

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JACKSON, Miss. – The University of Mississippi Medical Center and four collaborating academic medical centers have received $26 million from the National Institutes of Health to identify risk factors for Alzheimer's disease and related forms of cognitive decline, said Dr. Thomas Mosley, UMMC professor of geriatric medicine and one of the new study's lead investigators.

The new funding will pay for the ARIC Neurocognitive Study, a comprehensive examination of thousands of patients, which will include detailed neurocognitive testing and brain imaging. The project builds on the influential Atherosclerosis Risk in Communities (ARIC) study, a large epidemiologic investigation of the risk factors for heart disease and stroke.

Using the new exam data and the wealth of information collected during ARIC's 20-plus years, the ARIC Neurocognitive Study is expected to further illuminate causes of dementia, giving researchers a unique window into early physiological changes that eventually culminate in Alzheimer's.

Of particular interest is the role that vascular risk factors – including hypertension, diabetes and lifestyle – experienced during middle age play in Alzheimer's and cognitive decline later in life.

"The new ARIC Neurocognitive Study will be one for the most comprehensive investigations to date into the role of vascular and related mid-life risk factors in Alzheimer's and cognitive decline," Mosley said.

He believes Alzheimer's disease likely isn't caused by a single factor, but rather by a complex process involving multiple factors interacting and accumulating over decades.

"Understanding the risk factors involved in this complex process may lead to new targets for treatment," he said. "It could also allow us to intervene at an earlier point with people who are at high risk for dementia, a time when preventative treatments may be most effective."

Researchers at UMMC will work with four collaborating primary study sites Johns Hopkins University, receiving about $4.6 million, Wake Forest University, receiving about $3.6 million, the University of Minnesota, receiving about $4.3 million, and the University of North Carolina at Chapel Hill receiving about $4.6 million.

Funded under UMMC's $9 million portion of the grant, Mosley's team includes scientists from the Mayo Clinic, Baylor College of Medicine, the University of Texas at Houston, Boston University and Erasmus University in the Netherlands.

The ARIC study has followed a group of roughly 16,000 participants for more than 20 years, from middle age into late life. Participants were initially recruited from four communities around the U.S., including approximately 4,000 African Americans from Jackson, Miss. Through a series of medical examinations over the years, ARIC participants have been extensively evaluated for diseases and factors including heart disease, hypertension and cognitive function.

Recent research has found African Americans may have a twofold or greater risk for Alzheimer's compared to whites. With one of the largest and most extensively evaluated African American study subgroups, the ARIC Neurocognitive Study will help illuminate the role of ethnic differences in relative risk for dementia.

Previous work by Mosley and ARIC colleagues has pointed to the importance of vascular risk factors in predicting decline in cognitive functions such as memory and processing speed. Using brain imaging, Mosley and colleagues have also shown brain changes, such as atrophy and silent strokes, are surprisingly common, even in middle-age adults and that these brain abnormalities begin to affect cognitive functions as early as middle age.

“A key question is whether brain changes we find in mid life predict dementia later in life and, if so, whether they are caused by potentially modifiable conditions, such as hypertension,” Mosley said.

The ARIC Neurocognitive Study will also bring together state-of-the-art brain imaging and new genetic technology, powerful tools in the search for the causes of dementia.

“Rapidly advancing technology helps us address fundamental questions about how and why the brain ages,” Mosley said. “We’ve put together a world-class team of leading experts representing a range of disciplines, including brain imaging, genetics, epidemiology, and neurology, to illuminate factors that increase risk as well as those that may protect against dementia.”

In light of the aging U.S. population and a strong association between age and dementia risk, Mosley said it’s paramount to improve clinical care and decode the factors that contribute to and protect against dementia.

“They represent some of the greatest challenges facing our medical system over the next 50 years,” he said.

The ARIC Neurocognitive Study is the foundational study of UMMC’s Memory Impairment and Neurodegenerative Dementia (MIND) Center, which Mosley directs.

A separate capital campaign at UMMC is under way to raise $8.9 million for the MIND Center. As the center develops, Mosley plans to recruit additional investigators to expand research in brain aging and dementia.

Due to the grant’s scope, the ARIC Neurocognitive Study is co-funded by three NIH institutes: lead sponsor National Heart, Lung and Blood Institute; the National Institute of Neurological Disorders and Stroke; and the National Eye Institute.

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