

Scientists Seek to Block Progression of Alzheimer's Disease with Novel Medication that Targets the Source

November 17 2008, By Debra Kain

(PhysOrg.com) -- Researchers at the University of California, San Diego Shiley-Marcos Alzheimer's Research Center (ADRC) are conducting studies on an experimental medication to block nerve damage and inflammation in the brain that can lead to progressive memory loss and behavioral changes in people with Alzheimer's disease. While current Alzheimer's disease therapies focus on improving symptoms, this study aims to attack the root of the disease progression. Nationwide, 400 volunteers with mild to moderate Alzheimer's disease are needed to further test this new approach.

The buildup of plaques in the area of the brain associated with memory can trigger inflammation in the brains of people with Alzheimer's disease. These plaque deposits are primarily made up of proteins called amyloid beta, which may promote damage to nerve cells. Researchers will test an experimental drug designed to stop amyloid beta from binding to a receptor in the brain called RAGE (receptor for advanced glycation endproducts) and may prevent plaques from forming. Douglas Galasko, M.D., professor of neurosciences at UC San Diego School of Medicine and director of the ADRC, is directing the study.

"The evidence from basic research studies is compelling and merits further evaluation in a rigorous human clinical trial," Galasko said. "While most current Alzheimer's disease therapies focus on the various symptoms of cognitive impairment, this trial is testing whether we can

modify actual progression of the disease itself by targeting the interaction between amyloid beta and an important receptor in the brain.”

The industry-sponsored study is being conducted by the Alzheimer’s Disease Cooperative Study (ADCS), a nationwide consortium of leading research institutions supported by the National Institutes of Health’s National Institute on Aging (NIA), and headquartered at UC San Diego. The ADCS will coordinate the 18-month, double-blind, placebo-controlled clinical trial. The drug, which has been tested in animals and in preliminary human studies, is being studied in this Phase II clinical trial to determine if it will slow the progressive decline associated with Alzheimer’s disease.

The study will recruit the 400 volunteers, age 50 and older, at 40 sites nationwide. The ADCS consortium is a public resource, supported by the NIA to facilitate the study of potential new therapies for Alzheimer’s disease. Its nationwide outreach is critical to the recruitment of participants into such studies.

“Progress in treating and preventing Alzheimer’s would just not be possible without the dedication of the patients and families who volunteer for clinical trials,” said Neil Buckholtz, Ph.D., chief of the NIA Dementias of Aging Branch.

Physicians and nurses will monitor the participants during regular visits and measure the severity and progression of disease using standard tests of functional and cognitive abilities. To ensure unbiased results, neither the researchers conducting the trial nor the participants will know who is receiving the study drug and who is getting the placebo.

“In addition to monitoring disease progression through cognitive tests, we will examine various biological markers of the disease,” said Jody

Corey-Bloom, M.D., Ph.D., professor of neurosciences at UC San Diego and principal investigator at the ADRC study. “These include the degree of atrophy, or shrinkage, of the brain as measured by magnetic resonance imaging (MRI), the extent of amyloid beta buildup in the brain assessed by Positron Emission Topography (PET) imaging, and levels of amyloid beta and other proteins in blood and spinal fluid.”

Much of the preclinical, basic research connecting RAGE to amyloid beta that led to the current study was performed by scientists at Columbia University, the University of Perugia in Italy and the University of Magdeburg in Germany.

To view a list of the research sites or for information on dementia and aging, go to www.nia.nih.gov/Alzheimers .

Provided by University of California, San Diego

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