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BRAIN BLOOD FLOW IMAGING PROMISING IN ALZHEIMER'S DIAGNOSIS

DALLAS--A study at The University of Texas Southwestern Medical Center at Dallas indicates that imaging blood flow in the brain shows promise as an accurate tool for diagnosing Alzheimer's disease. Currently, only biopsy or autopsy of the patient's brain is accepted as definitive confirmation of the disease.

In a study of 18 patients, Dr. Frederick Bonte and colleagues found that brain blood flow imaging correlated almost 100 percent with autopsy verification of the disease. Bonte is professor of radiology and director of the Nuclear Medicine Center at UT Southwestern. He also holds the Effie and Wofford Cain Distinguished Chair in Diagnostic Imaging.

Bonte presented his group's findings Nov. 30 at the Radiological Society of North America's 78th scientific assembly and annual meeting in Chicago. In one of the largest studies of its kind, Bonte and his associates used single-photon emission computed tomography (SPECT) to study the regional cerebral blood flow of 11 men and seven women between the ages 42 and 84. Fourteen were diagnosed with Alzheimer's and three with other disorders. One was found normal.

Fifteen of the UT Southwestern patients were studied

(More)

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with Xe-133 SPECT, two with Tc-99m HM-PAO 3-camera SPECT and one with both. Diagnosis of patients imaged with the Xe-133 was made by visually interpreting the computer scan of each patient's brain blood flow and by quantifying flow ratios of brain blood flow in areas thought to be involved in the disease process and comparing them to results in elderly normal volunteers. Tc-99m HM-PAO studies were interpreted visually. All were compared to normal subjects.

UT Southwestern researchers now have completed a total of 24 brain blood flow imaging comparisons with brain tissue samples. "To really test brain blood flow imaging as a diagnostic tool for Alzheimer's, we need a sampling of 50 to 100 patients," Bonte said. Talks are under way with The University of California, Berkeley, scientists about working together to study more patients faster.

"We are fortunate to have a busy Alzheimer's Disease Research Center at UT Southwestern, which gives us an opportunity to study and evaluate large numbers of patients," Bonte said. He added that UT Southwestern would be able to complete the sampling alone in about two years.

The technique--not the machine--is what matters, Bonte said, so there will be no problem combining data from patient studies at UT Southwestern with those done at another institution. "Even primitive equipment in a small hospital can show abnormal brain

blood flow patterns if the physicians know how to interpret them," Bonte said.

UT Southwestern researchers in the Alzheimer's Disease Research Center see the greatest promise for the technique in hard-to-diagnose cases since its cost makes routine use impractical.

Bonte and his associates are excited about the results of the first study and continue to look at brain blood flow with larger patient groups. "It's a good start," he said. "Some of our researchers think if you live to be 85, you have an almost 50 percent chance of developing Alzheimer's disease. If that's true, we all need all the help we can get."

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NOTE: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences, Southwestern Allied Health Sciences School, affiliated teaching hospitals and outpatient clinics.