Dr. Silverman comments on July 11 AV-45 clinical presentation at the International Conference on Alzheimer’s Disease (ICAD)

Daniel Silverman, MD, PhD, Director, UCLA Geffen School of Medicine, Brain Imaging Clinic comments on newest advances in diagnosing Alzheimer’s disease (AD) based on the July 11 AV-45 clinical presentation at ICAD. His team is presenting results of their current research using FDG-PET brain imaging and NeuroQ. The poster titled “Clinical and quantitative fluorodeoxyglucose positron emission tomography in pre- and symptomatic persons inheriting familial Alzheimer's disease mutations," will be presented Monday, Jul 12, at 11:30 AM - 1:00 PM (HST). As the head of the Neuronuclear Imaging Section at the David Geffen School of Medicine at UCLA, Dr. Silverman is an internationally known researcher, specializing in nuclear medicine imaging studies for the improved diagnosis and treatment of many types of dementia, including AD.

Honolulu, HI (PRWEB) July 11, 2010 -- MEDIA ADVISORY --Daniel Silverman, MD, PhD, attended ICAD and the Imaging Consortium and offers these comments based on the AV-45 news report from the ICAD meeting. He can be contacted for additional perspective.

As the head of the Neuronuclear Imaging Section at the David Geffen School of Medicine at UCLA, Dr. Silverman is an internationally known researcher, specializing in nuclear medicine imaging studies for the improved diagnosis and treatment of many types of dementia, including AD.

In 2001, Dr. Silverman developed the first quantification software program for FDG-PET brain imaging (trade name NeuroQ®) cleared by the FDA for assisting with the differential diagnosis of dementia. Dr. Silverman is currently working on a NeuroQ next generation module designed to automatically quantify Avid’s AV-45 amyloid brain imaging agent. He is currently a U.S. investigator on the Alzheimer Disease Neuroimaging Initiative supported by the Alzheimer Foundation and a consultant to Japan’s AD Neuroimaging Initiative.

At ICAD his team is presenting results of their current research using FDG-PET brain imaging and NeuroQ. The poster titled “Clinical and quantitative fluorodeoxyglucose positron emission tomography in pre- and symptomatic persons inheriting familial Alzheimer's disease mutations," will be presented on Monday, Jul 12, at 11:30 AM - 1:00 PM (HST).

Problem: More than 40% of patients with early dementia who are found at autopsy to not have Alzheimer’s disease were actually misdiagnosed with AD during their lifetime.

According to Dr. Silverman, “There is a clear use for the AV-45 PET imaging agent for the development of drugs aimed at Alzheimer’s. Patients can be selected for clinical trials and the ability of a drug to reduce amyloid load in the brain can be tested. If a drug with such an ability does come to market, we could then also use this imaging agent clinically, to monitor the effect of therapy on amyloid load.”

Q1. Medical news reports: Amyloid brain imaging using the AV-45 agent provides structural imaging of the brain. Is there a benefit to having structural imaging over functional imaging currently available by FDG-PET for improved diagnosis of Alzheimer’s disease?
SILVERMAN: Often structural imaging refers to gross structure like you see with a CT scan or conventional MRI. In the case of amyloid brain imaging, we are talking about microstructures. This imaging is not looking directly at how the brain is functioning; instead, we see how the microscopic plaque is distributed in the brain and how much of it is there.

There can be older people whose brains are full of amyloid plaques at the time they die, but they don’t have Alzheimer’s disease. So there are two questions to ask. Is there much amyloid present? But the real important question clinically is -- Is brain function being affected in a way that will impact cognitive abilities? That is what you are directly looking at with FDG PET imaging – brain function.

Q2. More than 40% of patients with early dementia who are found at autopsy to not have Alzheimer’s disease were actually misdiagnosed with AD during their lifetime. If FDG-PET imaging currently provides the most advanced diagnostic tool, is anything available that is better?

SILVERMAN: For patients who have had a good clinical work-up establishing the presence of dementia or mild cognitive impairment, short of an autopsy there is currently no test that is more accurate than FDG-PET imaging to determine whether Alzheimer’s is present. Once the PET scan is obtained, a skilled interpreter can have a high level of diagnostic or prognostic accuracy with visual analysis alone. When quantification with NeuroQ (a software package from Syntermed, Inc.) is also performed, the severity of the problem is objectively assessed region by region throughout the brain, how the brain changes over time can be measured, and the accuracy of less experienced interpreters can be increased to match the level of the most expert readers.

Note: No amyloid-imaging tracer is currently available on the market. There are several agents in development. AVID Pharmaceutical announced results from its Phase 3 trial at the ICAD meeting, Sunday, July 11, the first company to do so.

Q3. Memory loss: If a patient has cognitive problems or even full-blown dementia, the reality is it may not be Alzheimer’s disease, right?

SILVERMAN: Absolutely. Determining the cause of cognitive decline or memory loss will determine the best treatment. It is important to distinguish between the many types of dementia including Alzheimer’s disease, since they can differ from each other substantially with respect to the most appropriate treatment and clinical course. It all starts by having a good clinical work-up (history, physical, lab tests, neurological exam, and often an MRI). If the diagnosis remains unclear, that is the time to consider an FDG-PET scan. With FDG-PET, the overall diagnostic accuracy of the work-up, as proven when all patients being studied have gone to autopsy, typically increases from about 70% to 90%.

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