

Improved detection of frontotemporal degeneration may aid clinical trial efforts

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A series of studies demonstrate improved detection of the second most common form of dementia, providing diagnostic specificity that clears the way for refined clinical trials testing targeted treatments. The new research is being presented by experts from the Perelman School of Medicine at the University of Pennsylvania at the American Academy of Neurology's 65th Annual Meeting in San Diego March 16-23, 2013.

Frontotemporal degeneration, the most common [dementia](#) in people under 60, can be hereditary or sporadic in nature and caused by one of two different mutated proteins (tau or TDP-43). The disease results in damage to the anterior temporal and/or frontal lobes of the brain. As the disease progresses, it becomes increasingly difficult for people to plan or organize activities, behave appropriately in social or work settings, interact with others, and care for oneself, resulting in increasing dependency.

In one study, the team confirmed that a novel multimodal imaging approach was more accurate (88 percent) than using either MRI (72 percent) or DTI (81 percent) alone to detect FTD versus Alzheimer's disease. The two imaging techniques integrate measures of [white matter](#) and [grey matter](#), providing a statistically powerful method for predicting underlying pathology in order to screen patients for clinical trials.

"We are moving forward on our biomarker work to optimize our ability to identify the specific cause of an individual's difficulties during life, said senior author Murray Grossman, MD, EdD, professor of Neurology

and director of the Penn FTL D Center. "We use a novel multi-modality approach involving behavioral, imaging and biofluid biomarker measures."

In a second study, researchers found that a brief series of [neuropsychological tests](#) of memory, word generation and conceptual flexibility (needed for [creative problem](#)-solving) helped differentiate people with very mild behavioral variant FTD (bvFTD) and those with [mild cognitive impairment](#) (MCI). The combination of tests correctly classified 85.7 percent of bvFTD cases and 83.3 percent of MCI cases at early stages of disease.

"This is particularly important because treatment trials with disease-modifying agents are emerging, often based on animal studies, yet we still don't have all the tools we need to identify who is most appropriate to participate in one of these trials. Moreover, we can use this information we ascertain to help determine who is responding to a treatment in a clinical trial."

The third study being presented at the meeting showed that hereditary forms of FTD appear to have more rapid cognitive decline and differing tau profiles compared with sporadic forms of the disease. For clinical trials testing whether a drug can delay damage caused by tau, any known differences in the speed of disease progression could interfere with trial results.

More information: [P06.034] The Power of Multimodal Neuroimaging Biomarkers for Clinical Trial Screening
Thursday, March 21, 2013 7:30 AM

[P03.086] Utility of Neuropsychological Testing in the Differential Diagnosis of Early Behavioral Variant Frontotemporal Dementia (bvFTD) and Mild Cognitive Impairment (MCI)

Tuesday, March 19, 2013 2:00 PM

[P05.102] Longitudinal Cognitive Performance and Cerebrospinal Fluid Biomarkers in Sporadic and Hereditary Frontotemporal Lobar Degeneration

Wednesday, March 20, 2013 2:00 PM

Provided by University of Pennsylvania School of Medicine

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