NACC Project #2000-04
Collaborative PET Imaging Study

Principal Investigator
Norman Foster, University of Michigan

Collaborating Centers
University of Pennsylvania, University of California at Davis

Project Description
This study will provide preliminary data needed to propose a prospective, multi-center trial to test whether adding positron emission tomography with [18F] fluorodeoxy-glucose (FDG-PET) to clinical evaluation helps to distinguish patients with frontotemporal dementia (FTD) and Alzheimer's disease (AD). Ten patients with FTD and ten with AD will receive FDG-PET scanning in addition to a clinical evaluation at the three participating Centers. Each Center also provides clinical and FDG-PET imaging data from patients who have had a post-mortem examination confirming FTD or AD. Standardized clinical scenarios are being developed from the clinical data and sent to two raters at each of the Centers. These raters categorized subjects as either having FTD or AD based upon these scenarios and also after completing a symptom checklist. Imaging data are being processed into two different presentations that are categorized separately by the raters: transaxial images and statistical maps derived from stereotactic surface projections. Data analysis will be conducted with the assistance of the NACC. The Minimum Data Set will be collected for all subjects in this study, who will be added to the NACC database.

The study seeks to investigate four issues that are critical in the design of a study to validate the clinical utility of FDG-PET for the specific purpose of distinguishing FTD and AD: 1) Evaluate how best to standardize the clinical diagnosis of FTD and distinguish it from AD for patient selection. This information will also be helpful in refining diagnostic criteria used by ADCs; 2) Demonstrate the feasibility of methods to standardize collection, transmission, and image display of PET data from multiple Centers; 3) Evaluate the reliability of two different methods of image processing that can be used for interpretation; and 4) Collect preliminary data comparing the accuracy of clinical diagnosis of AD and FTD with and without FDG-PET as compared to the gold standard of pathological diagnosis.

Contact Information
For further information regarding the results of this study, please contact:
Norman Foster, MD
University of Michigan Alzheimer's Disease Research Center
phone: (734) 764-2190
http://sitemaker.umich.edu/madrc

Rev. 02/07/2005