NACC Project #2010-JI-05 (Secondary Analysis of NACC data)
“The Influence of Smoking History on the Phenotype and Pathology of Dementia”

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Project Description
This project will improve the understanding of the role of smoking history in the clinical phenotype and pathology of dementia. A rapidly aging population presents a number of challenges, one of which is the rising incidence and prevalence of dementia. The health care costs for patients with dementia are significant, as are the opportunity costs for their caregivers. Increasingly, it is recognized that cardiovascular risk factors not only affect the risk of heart disease and stroke, but increase the risk for dementia. Smoking history presents an interesting dilemma. Smoking increases the risk of strokes, and strokes increase the risk of dementia; but the direct relationship between smoking and dementia is less clear. Smoking likely increases the risk of all-cause dementia, but it does not clearly increase the risk of vascular dementia or Alzheimer's disease, the most common dementias. Many epidemiological studies show that smoking decreases the risk of Parkinson's disease. However, smoking history has not been well studied in a dementia with pathology similar to Parkinson's disease, Dementia with Lewy Bodies. Nicotine may actually improve some cognitive test scores and may play a role in clearing amyloid plaques from the brain in animal models. This project involves the secondary analysis of data from the National Alzheimer's Coordinating Center. We hypothesize that this secondary analysis will demonstrate that smoking does increase the risk of dementia and that a dose-response curve exists between the smoking history and the incidence of dementia. In the light of data that shows that smoking decreases the risk of Parkinson's disease, we hypothesize that smoking history decreases the degree of dementia-related parkinsonism, also in a dose-related fashion. Thirdly, we hypothesize that the pathologically-confirmed etiologies of dementia in smokers are substantially different from those in non-smokers. Understanding how modifiable lifestyle factors, such as smoking, can increase or decrease the risk of dementia is a major public health issue, which this project will help address.

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