Optimization of Neuropathologic Assessment of Alzheimer's Disease

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Collaborating centers
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Project description
A recent panel of expert neuropathologists from the United States and Europe recently concluded that there is no consensus on the optimal methods for tissue staining and evaluation of the neuropathologic changes of Alzheimer's disease (AD). This is a serious limitation to the field of AD research because non-standardized evaluations are potential sources of variation that will adversely impact progress in other areas, like genomics and molecular neuroimaging, which use neuropathologic assessment as the "gold standard." The goal of the proposed research is to fill this important gap in our knowledge. Specific objectives of the propose research are to determine the degree of variation in the neuropathologic assessment of AD in the following scenarios:
(i) multiple independent staining protocols and independent evaluations (current state) vs. multiple independent staining protocols with centralized evaluation, (ii) one staining protocol and centralized evaluation vs. one staining protocol and multiple independent expert evaluations using light microscopy, and (iii) one staining protocol and centralized evaluation vs. one staining protocol and multiple independent expert evaluations using digital microscopy. The outcome of this research will be to provide an evidence base to the National Institute on Aging and the National Alzheimer's Coordinating Center so they can make informed recommendations to AD Centers on the optimal protocols for the neuropathologic assessment of AD.

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