Compounds in spinal fluid associated with faster decline among individuals with mild dementia

May 11 2009

Levels of biomarkers in the cerebrospinal fluid of individuals with very mild dementia may be associated with the rate at which their thinking, learning and memory skills decline, according to a report in the May issue of *Archives of Neurology*.

Finding effective treatments for Alzheimer's disease will likely depend on early identification of patients, according to background information in the article. "Because there is a growing emphasis on enrolling individuals with less cognitive impairment into clinical trials of putative anti-Alzheimer's disease agents, methods are needed that will identify individuals with very mild dementia of the Alzheimer's type who are more likely to exhibit measurable cognitive decline during the study," the authors write.

Barbara J. Snider, M.D., Ph.D., and colleagues at Washington University School of Medicine, St. Louis, studied 49 individuals with a diagnosis of very mild dementia of the Alzheimer type. Participants underwent a lumbar puncture to obtain a sample of cerebrospinal fluid, which was tested for several biomarkers associated with Alzheimer's disease, including alpha-beta peptide 1-42 (Aβ42), tau and phosphorylated tau 181 (ptau 181). All the participants had at least one follow-up assessment an average of 3.5 years later.

"The rate of dementia progression was significantly more rapid in

individuals with lower baseline cerebrospinal fluid Aβ42 levels, higher tau or ptau 181 levels or high tau: Aβ42 ratios," the authors write.

"Although the number of participants in this study was relatively small, the results suggest that CSF biomarkers might be useful as entry criteria for clinical trials of disease-modifying therapies for mild cognitive impairment and very mild dementia of the Alzheimer type," they continue. "Limiting enrollment to individuals with CSF Aβ42 values below a certain cutoff point might ameliorate the difficulties caused by lack of disease progression in some individuals during the trial." For instance, if dementia progresses slowly among all patients in a trial, a larger number of participants would be needed to determine if the treatment was effective over a given time period.

"These findings are likely to have important implications for reducing the number of participants needed to show an effect in clinical trials for very mild dementia of the Alzheimer type and mild cognitive impairment and, ultimately, to assist in making treatment decisions as more invasive and potentially harmful disease-modifying treatments for Alzheimer's disease become available," they conclude.

More information: Arch Neurol. 2009;66[5]:638-645

Source: JAMA and Archives Journals (news : web)