Blood biomarker associated with prevalence, severity of Alzheimer's, but not risk of development

April 5 2011

Higher levels in blood of the protein clusterin, also known as apolipoprotein J, are significantly associated with the prevalence and severity of Alzheimer's disease, but not with the risk of onset of new disease, according to a study in the April 6 issue of *JAMA*.

Clusterin levels have been found to be increased in brain and cerebrospinal fluid of patients with Alzheimer disease (AD), and have been suggested to be involved in the pathogenesis of AD. "Plasma clusterin was reported to be associated with brain atrophy, baseline disease severity, and rapid clinical progression in AD, suggesting its possible use as a biomarker of AD," according to background information in the article.

Elisabeth M. C. Schrijvers, M.D., of Erasmus MC University Medical Center, Rotterdam, the Netherlands, and colleagues examined the associations between plasma levels of clusterin and the prevalence, severity, and risk of AD. The study included analysis of data on plasma levels of clusterin measured at baseline (1997-1999) in 60 individuals with prevalent AD, a random sub-group of 926 participants, and an additional 156 participants diagnosed with AD during follow-up (average, 7.2 years) until January 2007.

The researchers found that the likelihood of prevalent AD increased with increasing plasma levels of clusterin, with the odds increased by 63

percent for every standard deviation increase in clusterin levels, after adjusting for age, sex, education level, apolipoprotein E status, diabetes, smoking, coronary heart disease, and hypertension. Among patients with AD, higher clusterin levels were associated with more severe disease.

There was no statistically significant association of plasma clusterin levels with new AD during total follow-up or with new AD within or after 3 years of baseline. Results for all-cause dementia and vascular dementia were similar.

"In conclusion, our data from the general population show that increased plasma clusterin levels are associated with prevalent AD and are higher in more severe cases of AD. However, increased levels of clusterin do not precede development of AD and therefore are not a potential early marker of subclinical disease," the authors write.

More information: *JAMA*. 2011;305[13]1322-1326.

Provided by JAMA and Archives Journals

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