Benefits for new immunoassays for measuring A-beta-42 in CSF

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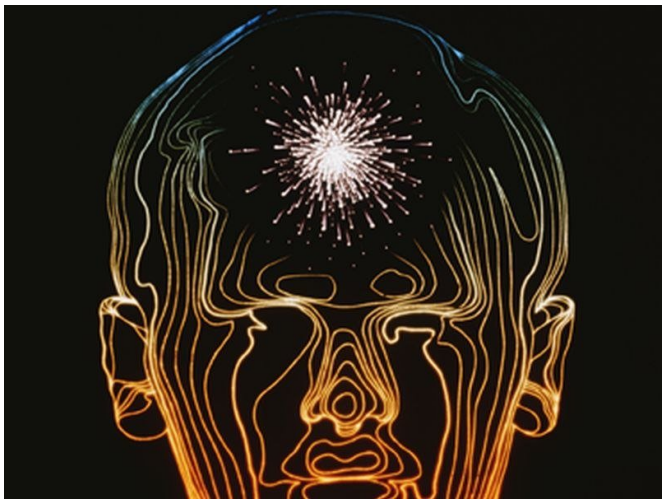

(HealthDay)—Concentrations of cerebrospinal fluid (CSF) ?42-amyloid 42 (A?42) derived from new immunoassays may show improved agreement with visual flutemetamol F18 ([^{18}F]flutemetamol)-labeled positron emission tomography (PET) assessment, according to a study published online Nov. 6 in *JAMA Neurology*.

Shorena Janelidze, Ph.D., from Lund University in Sweden, and colleagues examined the concordance between CSF A?42 levels measured using five different immunoassays and visual amyloid PET analysis in a study involving 262 patients with mild cognitive impairment or subjective cognitive decline who had undergone [^{18}F]flutemetamol-labeled PET. Levels of CSF A?42 were analyzed using the classic INNOTEST, modified INNOTEST, full automated Lumipulse (FL), EUROIMMUN (EI), and Meso Scale Discovery (MSD) assays.

The researchers found that the mass spectrometry-derived A?42 values showed higher correlations with the modified A?42-INNOTEST, A?42-FL, A?42-EI, and A?42-MSD assays versus the classic A?42-INNOTEST assay. Recombinant A?1-40 peptide partially quenched the signal in the classic A?42-INNOTEST assay. Better concordance with visual [^{18}F]flutemetamol PET status was seen for the classic A?42-INNOTEST assay versus the newer assays (area under the receiver operating characteristic curve, 0.92 versus 0.87 to 0.89; P ? 0.01). When A?42-to-A?40, A?42-to-total tau, or A?42-to-phosphorylated tau ratios were used, the accuracies of the newer assays improved significantly.

"These findings suggest the benefit of implementing the CSF A?42-to-A?40 or A?42-to-tau ratios as a biomarker of amyloid deposition in clinical practice and trials," the authors write.

Several authors disclosed financial ties to the pharmaceutical industry. GE Healthcare sponsored doses of [^{18}F]flutemetamol injection, and EUROIMMUN provided test kits.

More information: Abstract/Full Text