DOI: 10.1002/alz.093092

BIOMARKERS

PODIUM PRESENTATION

Alzheimer's & Dementia®
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

Optimizing tau-PET referrals in memory clinics through a blood biomarker workflow

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Abstract

Background: Blood-based biomarkers have demonstrated great promise for identifying biomarker-confirmed Alzheimer's disease. We aimed to evaluate whether blood-based biomarkers could optimize the referral of memory clinic patients to a tau-PET exam, which is crucial for prognostic evaluation.

Method: The study measured various plasma biomarkers (Aβ42/Aβ40, pTau181, pTau217, pTau231, NfL, and GFAP) and compared them with tau-PET scan results in patients with subjective cognitive decline, mild cognitive impairment, or dementia. Participants were sourced from the Swedish BioFINDER-2 study (548 individuals) and the TRIAD study (179 individuals). Cutoffs for each biomarker were established at 90%, 95%, and 97.5% sensitivity for detecting tau-PET-positivity. We then calculated the percentage of patients below these cutoffs (to potentially avoid unnecessary tau-PET scans) and the tau-PET-positivity rate among those above the cutoffs.

Result: Plasma pTau217 showed the most promising results. At a 95% sensitivity cutoff in both cohorts, using pTau217 could avoid nearly half of the tau-PET scans while maintaining a tau-PET-positivity rate of approximately 70% in those referred. Furthermore, tau-PET was strongly associated with subsequent cognitive decline. In the BioFINDER-2 cohort, tau-PET predicted cognitive decline only in individuals above the plasma pTau217 referral cutoff, suggesting a more targeted and informative use of tau-PET scans.

Conclusion: Plasma pTau217 demonstrates potential as a guiding biomarker for selecting Alzheimer's disease patients for tau-PET scans, particularly when accurate

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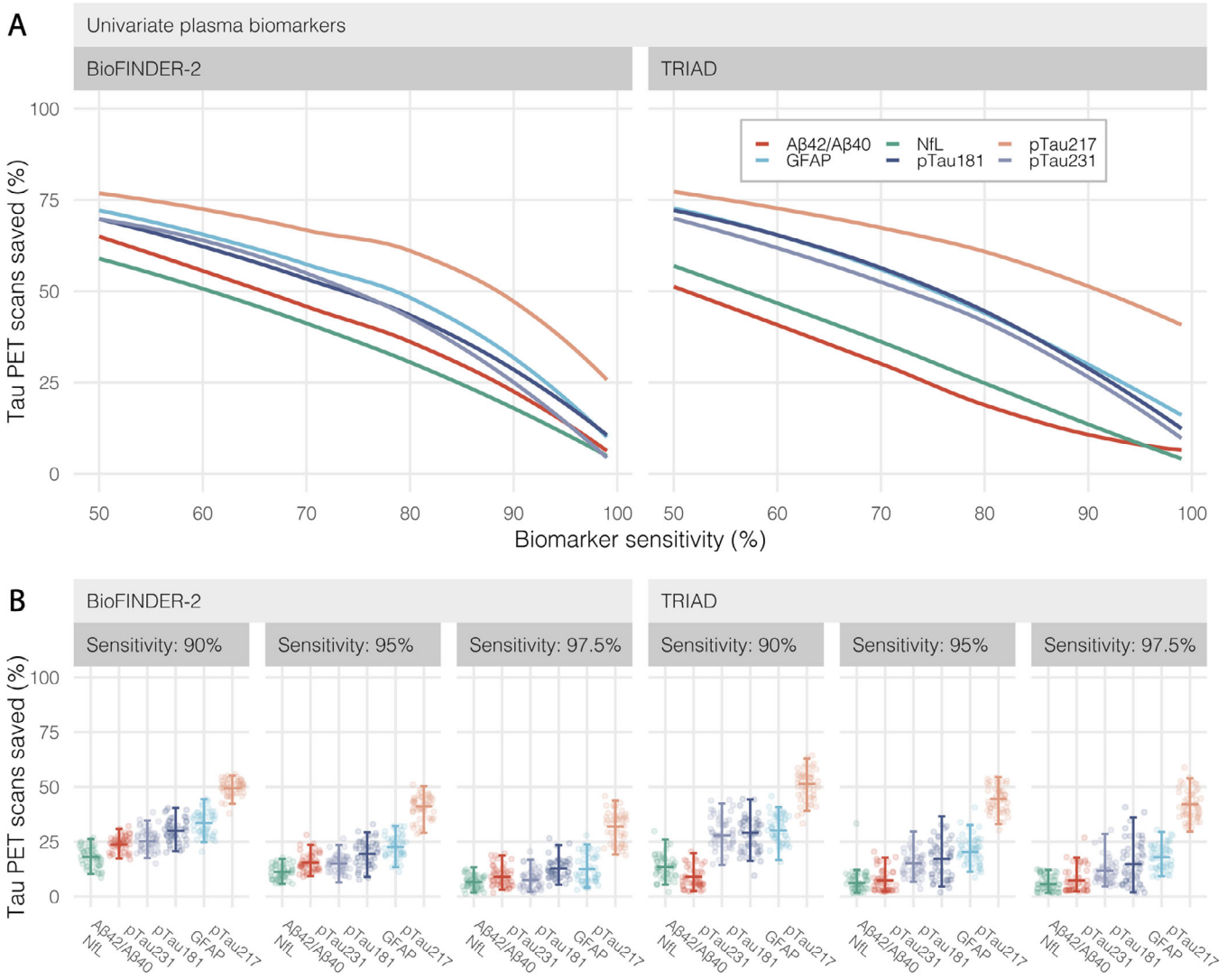
prognostic information is clinically valuable. This approach could lead to more efficient and informative use of tau-PET scans, avoiding unnecessary procedures in patients unlikely to benefit from them.



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