

# **The use of plasma biomarkers to improve the diagnosis and disease burden in Alzheimer's disease**

Chiung-Chih Chang

Kaohsiung Chang Gung Memorial Hospital Department of General Neurology Attending physician

The lecture will primarily discuss how to use biomarkers in blood to predict the risk of Alzheimer's disease and reduce the need for expensive positron emission tomography (PET) scans.

Alzheimer's disease is a brain disorder that affects memory and cognitive function and is associated with the abnormal accumulation of "amyloid plaques" and "tau proteins." Currently, PET scans are used to detect these protein accumulations, but they are costly and not easily accessible. Researchers aim to use blood tests to replace some PET scans, making screening more convenient.

The lecture will cover the diagnostic criteria of T-ADNI and blood samples from 361 participants, measuring indicators such as p-tau217, p-tau181, and A $\beta$ 42/40 (the amyloid protein ratio), and comparing them with PET scan results. The research found that p-tau217 was the most accurate in predicting the risk of Alzheimer's disease, achieving a 94% accuracy rate. Using this data for screening patients could reduce 57.5% of PET scans, saving significant medical resources.



2025

# The 8<sup>th</sup> AAMLS & The 16<sup>th</sup> APFMLS

2025 8<sup>th</sup> Congress of Asia Association of Medical Laboratory Scientists  
in conjunction with 16<sup>th</sup> Asia-Pacific Forum of Medical Laboratory Sciences

Precision, Innovation, and Legacy in Laboratory Medicine



Additionally, for those already showing amyloid plaque accumulation in PET scans, p-tau217 can help assess tau protein load, which is useful in determining disease progression and selecting vaccine treatment options.

In summary, the speaker will propose a two-step screening process: first, using a blood test for p-tau217 to identify potential Alzheimer's patients, then deciding whether a PET scan is needed. This approach would improve diagnostic efficiency and reduce healthcare costs, holding significant implications for the early diagnosis and treatment of Alzheimer's disease in the future.

