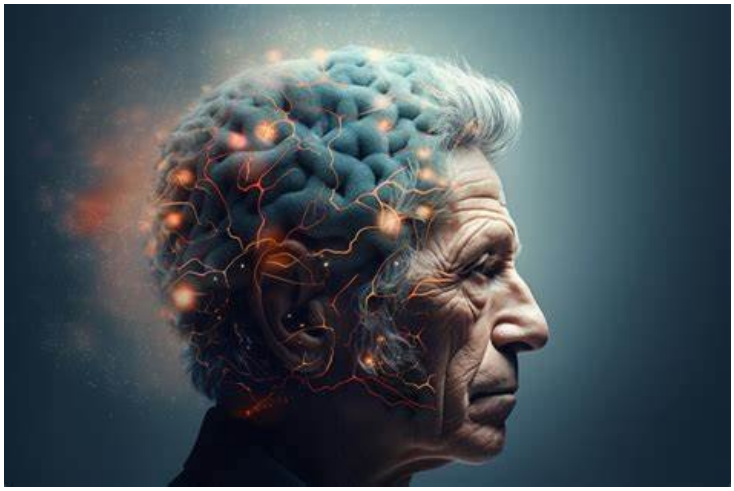
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Japan builds machine learning model to predict amyloid beta accumulation in brain

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Data can be collected in daily medical examinations by primary care physicians



Oita University and Eisai Co., in Japan, have announced the development of a machine learning model to predict amyloid beta (A?) accumulation in the brain, combining background data such as age, gender, smoking history and medical history, as well as general blood test and Mini-Mental State Examination (MMSE) items. This model is expected to enable primary care physicians to predict the accumulation of brain A?, which is an important pathological factor of Alzheimer's disease (AD), during routine medical examinations and to facilitate simple early screening for AD.

Currently, although brain A? accumulation can be detected by positron emission tomography (amyloid PET) and cerebrospinal fluid testing (CSF testing), the high cost and invasiveness of these tests are recognized as issues. Therefore, in recent years, numerous studies have been conducted on various AD related blood biomarkers as a more convenient screening method. However, there is almost no research evaluating the predictive performance of models for brain A? accumulation using routine clinical data.

As Japan has become a super-ageing society with the rise in the number of dementia patients over the age of 65, the development of new therapeutic agents for AD, the most common cause of dementia, is an urgent issue. In AD, accumulation of A? in the brain is a pathological event that precedes onset.

This study is the first to attempt the development of a machine learning model to predict amyloid PET positivity using only background data and general blood test results routinely collected in dementia care.