Researchers in Sweden have found that measuring two biomarkers in blood plasma can identify Alzheimer's disease more accurately than current tests. However, experts here say that even when a blood test is available, it should be used only for patients with symptoms, to differentiate Alzheimer's from other forms of dementia. ST PHOTO: JASON QUAH

Docs not keen on blood test to screen for Alzheimer's now

Experts here say usefulness currently limited, given lack of available treatments

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A blood test that could tell if someone has Alzheimer's disease could be on the cards in the coming years, as researchers in Sweden have found that measuring two biomarkers in blood plasma can identify the condition more accurately than current tests.

The study tested blood plasma for the levels of two key abnormal proteins associated with Alzheimer's: phosphorylated tau 217 (p-tau217) which is indicative of neurodegeneration, and beta-amyloid 42 which, when built up, is associated with Alzheimer's.

This blood test had an accuracy of 90 per cent or more in identifying people with Alzheimer's, which accounts for about 70 per cent of all dementia cases globally. These results were published in the Journal of the American Medical Association (Jama) on July 28.

The p-tau217 biomarker was also studied by researchers at the National Neuroscience Institute (NNI) in early 2024. In this small pilot, 72 blood samples tested were found to have significant differences in levels of this biomarker in people with and without Alzheimer's.

NNI is now planning larger studies on patients with early cognitive symptoms to validate its earlier findings.

Associate Professor Adeline Ng, a senior neurologist at NNI, told The Straits Times: "The data gathered will help us understand ptau-217 levels in Singapore patients with Alzheimer's disease and mild cognitive impairment (the stage before dementia) and how levels change as the condition progresses."

Diagnosis today is done with either positron emission tomography (PET) imaging or with cerebrospinal fluid. Such tests are either expensive or invasive.

Experts here say that even when a blood test is available, it should be used only for patients with symptoms, to differentiate Alzheimer's from other forms of dementia. This is because treatments currently available in Singapore treat only symptoms of the disease, and do not prevent it or slow down its progression.

Prof Ng said population screening is useful only in diseases that are preventable or manageable, "to identify people with health conditions but who have no symptoms yet, so that treatment can be started to prevent damage".

LOCAL STUDIES NEEDED

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ASSOCIATE PROFESSOR ADELINE NG, a senior neurologist at the National Neuroscience Institute, on how the institute is now planning larger studies on patients with early cognitive symptoms to validate its earlier findings.

In Singapore, roughly one in 11 people aged 60 and older is estimated to suffer from dementia, according to a recent study by the Institute of Mental Health.

It said about 74,000 people here had dementia in 2023 – which works out to 52,000 seniors likely having Alzheimer's – with the number expected to increase significantly as the population ages rapidly.

Early symptoms of Alzheimer's include forgetting recent conversations, asking questions repeatedly, finding it more difficult to make decisions, and taking longer to complete normal daily tasks.

It usually takes around 10 years for the condition to progress from mild to severe dementia, although in some patients, it can take as long as 20 years.

Dr Chong Yao Feng, a clinician and researcher specialising in dementia at the National University Hospital, said the Swedish results are part of a research trend in determining the possible use of blood biomarkers to identify Alzheimer's.

He said: "Having a blood biomarker test, if approved, will dramatically improve access to biomarker tests for the diagnosis of Alzheimer's disease."

Because of the rising rates of Alzheimer's as populations around the world, especially in developed countries, age, many large pharmaceutical companies are working on treatments to slow or even stop the progression of the disease. There are currently 164 ongoing clinical trials to test 127 drugs designed to treat Alzheimer's.

While experts here say the usefulness of identifying Alzheimer's is currently limited, given the lack of available treatments, this will hopefully change in the future.

The Food and Drug Administration of the United States in 2023 approved a new drug that removes beta-amyloid plaques from the brain. This drug, Lecanemab, has not been approved for use here yet, but Britain approved its use in 2024.

Studies show it was able to slow the decline in memory and thinking by about 30 per cent over 18 months of treatment in patients with early stage Alzheimer's.

But Dr Chong said Lecanemab is likely to be "very expensive" and logistically difficult to administer, as patients will need intravenous infusions every two or four weeks, as well as regular magnetic resonance imaging scans to monitor for complications, he said.

Lecanemab's manufacturer has set its list price at US$26,500 (S$34,600) per year in the US.

Prof Ng said the drug has serious known side effects such as bleeding in the brain and swelling, so it should not be prescribed to people who are taking blood thinners or have clotting disorders, strokes or seizures.

Studies to date show there is no clinical benefit in using biomarkers and brain imaging to screen for mild cognitive impairment or dementia in people who have no symptoms.

But Prof Ng said a blood test for Alzheimer's disease that has a similar or higher diagnostic accuracy than current methods "would definitely make a difference, especially as we seek to move towards point-of-care testing for neurodegenerative disorders".

This is why the NNI is doing studies on the p-tau217 biomarker.

Prof Ng said local studies are needed as most studies, like the Swedish one, "were done with Caucasian and other non-Asian cohorts, so researchers in Singapore are currently replicating and validating the results in our local population".

In Jama's editorial on the Swedish study, it stated: "Alzheimer's disease is increasingly viewed as a treatable condition and managed like other major chronic diseases, such as heart disease and cancer."

It added that accurate and early diagnosis of the disease is increasingly important, with new drugs being developed to reduce amyloid build-up in the brain.

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