

Consensus statement on the use of Alzheimer's disease biomarkers and anti-amyloid therapies in Hong Kong

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ABSTRACT

Alzheimer's disease (AD) is the most common aetiology of cognitive impairment worldwide and in Hong Kong. There have been rapid advances in the use of biomarkers for the diagnosis of AD and in the availability of anti-amyloid therapies (AAT) to slow cognitive and functional decline. At present, there is no consensus in Hong Kong regarding the application of AD biomarkers or the use of AAT. A multidisciplinary group of 20 medical specialists from five professional societies discussed issues related to the application of biomarkers for the diagnosis of AD pathology and the use of AAT, and reviewed the evidence in the context of local experience to inform recommendations. A modified Delphi approach was adopted to finalise the recommendations. Consensus was defined as $\geq 75\%$ agreement on a 9-point Likert scale among panellists. The panel finalised 26 consensus statements addressing the use of AD biomarkers, including neuroimaging and fluid biomarkers, as well as the use of AAT, including inclusion criteria, serial neuroimaging monitoring during treatment, and management of infusion reactions. These recommendations are relevant to the Hong Kong healthcare setting and may serve as guidance for doctors across specialties to facilitate appropriate management of AD.

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Introduction

There is increasing demand for accurate diagnosis of Alzheimer's disease (AD) pathology with the availability of anti-amyloid therapies (AAT).^{1,2} However, diagnostic accuracies for AD pathology in primary care and specialised memory clinics are approximately 61% and 73%, respectively.³ In Hong Kong, patients with memory problem are often referred to specialised clinics. Plasma biomarkers and neuroimaging have revolutionised the diagnostic approach to AD. Recently, AAT have emerged as disease-modifying treatments targeting the underlying pathology of AD.^{1,2} They have been shown to slow cognitive and functional decline and reduce amyloid-beta plaque burden.^{1,2} Nevertheless, amyloid-related imaging abnormalities (ARIA), frequent intravenous dosing, magnetic resonance imaging (MRI) monitoring, treatment costs, and healthcare infrastructure to support the new AAT treatment in Hong Kong remain important concerns in clinical practice.^{1,2}

In Hong Kong, there is currently no consensus regarding the use of AD biomarkers or AAT. This article presents the findings of an expert panel convened to formulate the first multispecialty consensus recommendations on the use of AD biomarkers and AAT, with the aim of providing practical local guidance for healthcare practitioners based on current evidence and expert opinion. This consensus statement comprises two parts, namely, the use of AD biomarkers and the use of AAT.

Methods

The joint consensus panel comprised 20 medical specialists from Hong Kong: four geriatricians (CK Shum, YF Shea, TW Au Yeung, PY Yeung) representing the Hong Kong Geriatrics Society; three psychiatrists (WC Chan, Linda CW Lam, Allen TC Lee) and one neurologist (KY Mok) representing the Chinese Dementia Research Association; four nuclear medicine physicians (TK Chow, Julio SH Kwok, CM Lok, David KK Ng) representing the Hong Kong Society of Nuclear Medicine and Molecular Imaging; four neurologists (WK Cheng, Nelson YF Cheung, Gardian CY Fong, Bonaventure YM Ip) representing the Hong Kong Neurological Society; and four radiologists (Cherry CY Chan, Danny HY Cho, Billy MH Lai, Deyond YW Siu) representing the Hong Kong Society of Diagnostic Radiologists. The panellists were nominated by the respective professional societies and had relevant knowledge and experience in the field.

Literature searches were conducted in PubMed and Ovid to identify relevant articles. The keywords used were 'biomarkers', 'Alzheimer's disease', 'plasma', 'amyloid positron emission tomography', 'memory clinic', 'lecanemab', and 'donanemab'. In

香港阿爾茨海默病生物標記及抗澱粉樣蛋白治療應用共識聲明

岑俊強、余日峯、歐陽東偉、陳卓忻、陳偉智、鄭永強、張煜暉、曹慶恩、周子傑、方頌恩、葉耀明、郭星翰、賴銘曦、林翠華、李廷俊、駱昭明、莫健英、吳官橋、蕭容媛、楊佩如、譚鉅富

阿爾茨海默病是全球及香港最常見的認知障礙病因，近年在利用生物標記協助診斷，以及使用抗澱粉樣蛋白藥物減緩認知和功能衰退方面均有迅速發展。目前，香港尚未就阿爾茨海默病生物標記的應用及抗澱粉樣蛋白治療的使用達成共識。因此，由五個專業學會組成、共20名來自不同專科的醫學專家成立工作小組，討論生物標記在診斷阿爾茨海默病病理方面的角色及抗澱粉樣蛋白治療的應用，並結合本地經驗和相關研究證據制訂建議。小組採用經修訂德爾菲法以確立最終建議。共識定義為在9分李克特量表上，有不少於75%小組成員表示同意。專家小組最終制訂了26項共識聲明，內容涵蓋阿爾茨海默病生物標記的應用（包括神經影像和體液生物標記）以及抗澱粉樣蛋白治療的使用（包括納入準則、治療期間的持續神經影像監測及輸注反應的處理）。上述建議適用於香港醫療環境，可為不同專科醫生提供參考，促進阿爾茨海默病的適切管理。

total, 49 articles were selected, including 10 major guidelines,⁴⁻¹³ four meta-analyses or systematic reviews,¹⁴⁻¹⁷ two randomised controlled trials,^{1,2} 32 original articles,^{3,18-48} and one case report.⁴⁹

Consensus statements were developed using a modified Delphi process (Fig 1).⁵⁰ Panellists evaluated each drafted statement on a 9-point Likert scale (1=strongly agree; 2=agree; 3=moderately agree; 4=mildly agree; 5=neutral; 6=mildly disagree; 7=moderately disagree; 8=disagree; 9=strongly disagree). A statement was considered 'accepted' if at least 75% of panellists rated it 1-3, and 'rejected' if at least 75% rated it 7-9. Statements with less than 75% agreement were rephrased and subjected to further voting. The level of evidence was determined according to the Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence.⁵¹

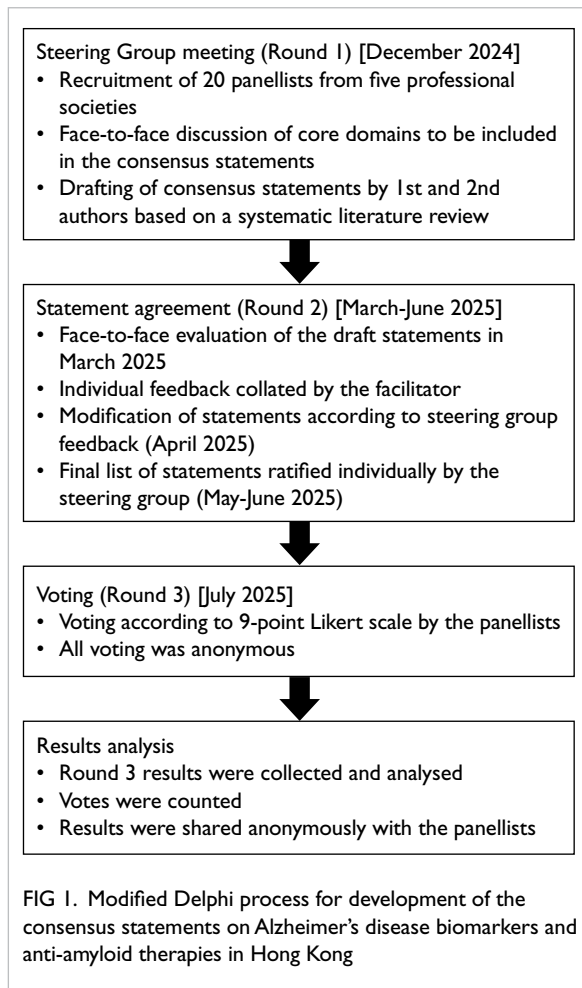
Results

In total, 26 statements met the threshold for consensus and were accepted after the first round of voting; these are summarised in the Table. No statements required rephrasing or further voting.

Part A: Clinical use of biomarkers in Alzheimer's disease

Target population

Statement 1: Testing of biomarkers (including plasma, cerebrospinal fluid, or neuroimaging) should only be considered in individuals with clinically relevant cognitive impairment.



Two recent diagnostic criteria for AD^{7,9} emphasise avoiding AD biomarker testing in individuals without cognitive complaints (ie, asymptomatic individuals in the community who may harbour AD pathology). It remains uncertain whether such individuals will progress to mild cognitive impairment (MCI) or dementia.⁷ Furthermore, there is no evidence that treatment in these individuals prevents future cognitive decline. Ongoing clinical trials aim to address these questions.

Clinical indications

Statement 2: Biomarkers may be used in individuals with young-onset dementia (ie, onset before 65 years of age).

Statement 3: Biomarkers may be used in individuals with suspected Alzheimer's disease and an atypical clinical course (eg, non-amnestic presentation, rapid or slow progression, or mixed aetiology).

Individuals with young-onset dementia may have various potential underlying aetiologies. Moreover, young-onset AD (ie, before 65 years of

age) is more likely to present with atypical clinical features, including prominent agnosia (posterior cortical atrophy), predominant language impairment (logopenic variant primary progressive aphasia), marked behavioural manifestations (eg, disinhibition in behavioural variant AD), or atypical parkinsonism, as seen in corticobasal syndrome.^{10,16} Confirmation of underlying AD pathology is important when considering AD-specific treatment.

Statement 4: Biomarkers may be used in individuals with suspected Alzheimer's disease and an amnestic presentation.

The diagnostic accuracy of a clinical diagnosis of AD is approximately 77%, even among dementia specialists.³ Observational studies and drug trials have shown that 15% to 20% of individuals clinically diagnosed with late-onset AD dementia had negative amyloid positron emission tomography (PET) results.¹⁰ The prevalence of amyloid PET positivity decreases with advancing age among patients with typical amnestic dementia, reflecting an increasing prevalence of non-AD pathologies (eg, limbic-predominant age-related TDP-43 encephalopathy) that can clinically mimic AD.⁵

Statement 5: Biomarkers can be used when anti-amyloid therapy is under consideration.

Initiation of AAT requires confirmation of AD pathology in accordance with current recommendations.^{6,11} At present, either amyloid PET imaging or cerebrospinal fluid (CSF) biomarkers is recommended.^{6,11}

Amyloid positron emission tomography imaging

Statement 6: Amyloid positron emission tomography scanning (using visual interpretation, with or without assistance from standardised uptake value ratio or the Centiloid scale) can be used to confirm Alzheimer's disease pathology.

Statement 7: The Centiloid scale is encouraged for comparison of amyloid positron emission tomography scans performed across different centres and for longitudinal monitoring of treatment response to anti-amyloid therapies.

Statement 8: Alzheimer's disease plasma biomarkers may be considered as an initial test before proceeding to amyloid positron emission tomography scanning for confirmation.

Amyloid PET imaging provides direct visualisation of amyloid plaques in the brain, enabling confirmation of amyloid pathology.¹⁰ Currently, only ¹¹C-Pittsburgh compound B, ¹⁸F-flutemetamol, and ¹⁸F-florbetaben are available locally. In the IDEAS study (Imaging Dementia—Evidence for Amyloid Scanning), which involved 11 409 individuals, patient

TABLE. Summary of voting results for each statement

	Evidence quality	Consensus level (responses)								
		1	2	3	4	5	6	7	8	9
Part A: Clinical use of biomarkers in Alzheimer's disease										
Statement 1: Testing of biomarkers (including plasma, cerebrospinal fluid, or neuroimaging) should only be considered in individuals with clinically relevant cognitive impairment.	1	55%	35%	0	10%	0	0	0	0	0
Statement 2: Biomarkers may be used in individuals with young-onset dementia (ie, onset before 65 years of age).	1	70%	30%	0	0	0	0	0	0	0
Statement 3: Biomarkers may be used in individuals with suspected Alzheimer's disease and an atypical clinical course (eg, non-amnestic presentation, rapid or slow progression, or mixed aetiology).	1	60%	40%	0	0	0	0	0	0	0
Statement 4: Biomarkers may be used in individuals with suspected Alzheimer's disease and an amnestic presentation.	1	65%	35%	0	0	0	0	0	0	0
Statement 5: Biomarkers can be used when anti-amyloid therapy is under consideration.	1	90%	5%	0	5%	0	0	0	0	0
Statement 6: Amyloid positron emission tomography scanning (using visual interpretation, with or without assistance from standardised uptake value ratio or the Centiloid scale) can be used to confirm Alzheimer's disease pathology.	1	55%	45%	0	0	0	0	0	0	0
Statement 7: The Centiloid scale is encouraged for comparison of amyloid positron emission tomography scans performed across different centres and for longitudinal monitoring of treatment response to anti-amyloid therapies.	1	45%	50%	5%	0	0	0	0	0	0
Statement 8: Alzheimer's disease plasma biomarkers may be considered as an initial test before proceeding to amyloid positron emission tomography scanning for confirmation.	1	45%	50%	5%	0	0	0	0	0	0
Statement 9: Tau positron emission tomography may aid in the diagnosis of atypical Alzheimer's disease and may provide prognostic information in individuals with mild cognitive impairment or those undergoing anti-amyloid therapies. At present, it should not be used routinely.	2	35%	65%	0	0	0	0	0	0	0
Statement 10: Cerebrospinal fluid biomarkers (A β 42, total tau, phosphorylated tau 181, and ratios including A β 42/A β 40, total tau/A β 42, and phosphorylated tau 181/A β 42) may be used to confirm Alzheimer's disease pathology.	1	60%	40%	0	0	0	0	0	0	0
Statement 11: Plasma phosphorylated tau 217 can be used to support the diagnosis of Alzheimer's disease pathology. A three-range (two-cutoff) approach, with test sensitivity and specificity of at least 90% in the intended population, is recommended.	1	40%	55%	5%	0	0	0	0	0	0
Statement 12: Plasma phosphorylated tau 181 may assist in the diagnosis of Alzheimer's disease among individuals with cognitive complaints. Confirmation of Alzheimer's disease pathology with amyloid positron emission tomography or cerebrospinal fluid biomarkers is needed.	2	50%	20%	30%	0	0	0	0	0	0
Statement 13: The plasma A β 42/A β 40 ratio may assist in the diagnosis of Alzheimer's disease among individuals with cognitive complaints. Confirmation of Alzheimer's disease pathology with amyloid positron emission tomography or cerebrospinal fluid biomarkers is needed. However, robustness remains a major limitation affecting clinical use.	1	35%	50%	5%	0	10%	0	0	0	0
Statement 14: Plasma biomarkers or other diagnostic tests can be used to diagnose Alzheimer's disease if they achieve a minimum sensitivity and specificity of at least 90% for the identification of moderate or frequent neuritic plaques at autopsy (gold standard) or approved surrogates (amyloid positron emission tomography or cerebrospinal fluid biomarkers).	1	20%	70%	10%	0	0	0	0	0	0
Statement 15: Given rapid progress in the field of Alzheimer's disease biomarkers, local professional bodies should organise updates and share local experience regarding their use.	5	60%	35%	5%	0	0	0	0	0	0
Part B: Anti-amyloid therapies										
Statement 16: Patients with Alzheimer's disease should have either mild cognitive impairment or early dementia. Given the generally lower educational level among the older population, the diagnosis of mild cognitive impairment or mild dementia should be primarily based on clinical history.	2	40%	40%	5%	5%	10%	0	0	0	0
Statement 17: The Hong Kong version of the Montreal Cognitive Assessment can be used to support the classification of mild cognitive impairment or mild dementia, with locally validated cutoffs according to age and educational level.	2	45%	35%	5%	0	15%	0	0	0	0

TABLE. (cont'd)

	Evidence quality	Consensus level (responses)								
		1	2	3	4	5	6	7	8	9
Statement 18: The use of anti-amyloid therapies should be reviewed if patients progress to moderate dementia.	2	55%	40%	0	0	5%	0	0	0	0
Statement 19: Blood pressure should be adequately controlled according to age and co-morbidities before initiation of anti-amyloid therapies.	4	55%	40%	0	5%	0	0	0	0	0
Statement 20: Patients who are unable to undergo regular magnetic resonance imaging (eg, due to claustrophobia or the presence of magnetic resonance imaging-incompatible devices) should not receive anti-amyloid therapies.	1	45%	55%	0	0	0	0	0	0	0
Statement 21: Serial magnetic resonance imaging scans (at least 1.5T, preferably 3.0T) using a standardised protocol and consistent magnetic field strength are recommended during anti-amyloid therapy to monitor the development of amyloid-related imaging abnormalities.	1	95%	5%	0	0	0	0	0	0	0
Statement 22: Apolipoprotein E genotyping is recommended before initiation of anti-amyloid therapies.	2	45%	55%	0	0	0	0	0	0	0
Statement 23: Patients and their relatives should be fully informed of the common non-specific symptoms of amyloid-related imaging abnormalities, including headache, dizziness, confusion, nausea, vision changes, gait disturbance, or seizures. They should be advised to inform the attending physician or emergency department promptly if such symptoms occur, and brain magnetic resonance imaging should be arranged as early as possible (if indicated).	1	75%	20%	0	5%	0	0	0	0	0
Statement 24: Patients receiving anti-amyloid therapies should have an alert in their electronic medical record or be issued a drug card.	5	85%	10%	5%	0	0	0	0	0	0
Statement 25: A multidisciplinary approach is recommended when administering anti-amyloid therapies. This approach involves clinicians experienced in the management of cognitive impairment (eg, geriatricians, neurologists, psychiatrists, nuclear medicine physicians, and radiologists).	2	65%	30%	5%	0	0	0	0	0	0
Statement 26: Infusion reactions, including hypersensitivity and acute symptoms such as fever, chills, or nausea, may occur during administration of anti-amyloid therapies. Protocols should be developed to manage various infusion reactions so that medical staff in wards or day centres can respond promptly and reduce the risk of recurrence.	2	60%	40%	0	0	0	0	0	0	0

management changed in 60.2% of those with MCI and 63.5% of those with dementia.³⁰ The diagnosis changed from AD to non-AD in 25.1% of patients and from non-AD to AD in 10.5%.³⁰ Amyloid PET has been included as a core biomarker of amyloid deposition.⁹ It should be performed before initiation of AAT and may be used to confirm AD pathology in individuals with inconclusive plasma or CSF biomarker results.^{9,12,17} However, high cost and limited availability may restrict its routine use. Therefore, measurement of plasma AD biomarkers as an initial test is recommended before proceeding to amyloid PET imaging (eg, in the context of financial constraints).^{12,17}

Given the availability of multiple centres offering amyloid PET imaging in Hong Kong and the potential need for serial scans to monitor response to AAT, reporting of amyloid burden using the Centiloid scale is encouraged.²¹

Tau positron emission tomography imaging

Statement 9: Tau positron emission tomography may aid in the diagnosis of atypical Alzheimer’s

disease and may provide prognostic information in individuals with mild cognitive impairment or those undergoing anti-amyloid therapies. At present, it should not be used routinely.

Only one tau PET tracer is currently available in Hong Kong: ¹⁸F-T807 (also known as ¹⁸F-AV-1451 or ¹⁸F-flortaucipir). In donanemab trials, individuals with a lower tau burden on tau PET demonstrated greater slowing of cognitive decline compared with those with higher tau deposition.² A previous study has also shown that tau deposition follows characteristic patterns in atypical AD, such as increased uptake in the posterior regions in posterior cortical atrophy and in the language-dominant left hemisphere in logopenic variant primary progressive aphasia.³²

Cerebrospinal fluid biomarkers

Statement 10: Cerebrospinal fluid biomarkers (Aβ42, total tau, phosphorylated tau 181, and ratios including Aβ42/Aβ40, total tau/Aβ42, and phosphorylated tau 181/Aβ42) may be used to confirm Alzheimer’s disease pathology.

It is well established that individuals with AD have approximately 50% lower CSF A β 42 levels than non-AD controls, owing to amyloid plaque deposition, and approximately twofold higher total tau (T-tau) or phosphorylated tau (p-tau181) levels, reflecting neuronal injury and release of neurofibrillary tangles into the CSF.¹⁵ Ratios such as A β 42/A β 40, T-tau/A β 42, and p-tau181/A β 42 improve diagnostic accuracy for AD pathology.¹⁵ A local study demonstrated that the sensitivity and specificity of the CSF A β 42/T-tau and A β 42/p-tau181 ratios were 96% and 83%, and 92% and 83%, respectively.³¹ Cerebrospinal fluid biomarkers may be used to confirm AD pathology in individuals with inconclusive plasma biomarker results.^{6,9,11}

Plasma biomarkers

Statement 11: Plasma phosphorylated tau 217 can be used to support the diagnosis of Alzheimer's disease pathology. A three-range (two-cutoff) approach, with test sensitivity and specificity of at least 90% in the intended population, is recommended.

Alzheimer's disease is characterised by neurofibrillary tangles composed of p-tau species, including p-tau181 and p-tau217.¹⁴ These are released following neuronal injury and death.¹⁴ Plasma p-tau217 has emerged as a robust biomarker for AD pathology and is elevated by 250% to 600% in patients with AD compared with non-AD individuals.^{3,14,17,19,22,25,26} Multiple measurement techniques are available, including immunoprecipitation mass spectrometry (IP-MS), the Meso Scale Discovery platform, and single molecule array. Increasing evidence suggests that the diagnostic accuracy of plasma p-tau217 is comparable to that of CSF biomarkers or amyloid PET imaging.^{25,26,33} A three-range (two-cutoff) strategy has been proposed, comprising a lower threshold to rule out AD (90%-95% sensitivity) and a higher threshold to rule in AD (90%-95% specificity).²⁵ A recent guideline has included plasma p-tau217 as a core biomarker for the diagnosis of AD pathology.⁹

Statement 12: Plasma phosphorylated tau 181 may assist in the diagnosis of Alzheimer's disease among individuals with cognitive complaints. Confirmation of Alzheimer's disease pathology with amyloid positron emission tomography or cerebrospinal fluid biomarkers is needed.

Similar to p-tau217, plasma p-tau181 is elevated in individuals with AD.^{17,34} Levels can be measured using IP-MS, single molecule array, or other ultra-sensitive immunoassays.^{17,34} Previously reported values of area under the receiver operating characteristic curve (AUC) for the detection of AD

pathology range from 0.86 to 0.89.^{17,34} Confirmation of AD pathology with amyloid PET imaging or CSF biomarker assessment remains necessary.

Statement 13: The plasma A β 42/A β 40 ratio may assist in the diagnosis of Alzheimer's disease among individuals with cognitive complaints. Confirmation of Alzheimer's disease pathology with amyloid positron emission tomography or cerebrospinal fluid biomarkers is needed. However, robustness remains a major limitation affecting clinical use.

Plasma A β 42 levels and the A β 42/A β 40 ratio are reduced in individuals with positive amyloid PET findings.²⁷ The A β 42/A β 40 ratio can be measured by IP-MS (AUC=0.86-0.89)¹⁷ or by ultra-sensitive immunoassays (AUC=0.69-0.78).²⁷ The plasma A β 42/A β 40 ratio correlates with cerebral amyloid PET and CSF amyloid measurements, and its diagnostic accuracy is relatively high across the AD spectrum.^{17,27} The ratio is more strongly associated with amyloid deposition than individual plasma A β 42 or A β 40 values. However, the plasma A β 42/A β 40 ratio is reduced by only 8% to 15% in individuals harbouring AD pathology,^{17,27} compared with a 40% to 60% reduction in CSF, owing to peripheral production of A β in extracerebral tissues.¹⁷ Consequently, there is greater overlap in plasma A β 42/A β 40 ratios between AD and non-AD individuals than in corresponding CSF ratios. The robustness of plasma A β measurements declines substantially with minor increases in the coefficient of variation, and plasma A β is highly sensitive to small measurement biases.^{18,29} The A β 42/A β 40 ratio may also be affected by medications such as sacubitril/valsartan.¹⁷

Statement 14: Plasma biomarkers or other diagnostic tests can be used to diagnose Alzheimer's disease if they achieve a minimum sensitivity and specificity of at least 90% for the identification of moderate or frequent neuritic plaques at autopsy (gold standard) or approved surrogates (amyloid positron emission tomography or cerebrospinal fluid biomarkers).

The Lumipulse G pTau217/ β -amyloid 1-42 plasma ratio in vitro diagnostic test (Fujirebio, Tokyo, Japan) has been approved by the United States Food and Drug Administration for the detection of Alzheimer's pathology.⁵² It adopts a three-range approach; confirmatory testing (amyloid PET imaging or CSF biomarkers) is required if results are indeterminate, which occurs in fewer than 20% of patients.⁵² The reported positive predictive value is 92% and the negative predictive value is 97%.⁵² Other international organisations have similarly recommended performance thresholds of at least 90% sensitivity and 90% specificity for confirmatory tests of AD pathology.^{12,13}

Role of professional bodies

Statement 15: Given rapid progress in the field of Alzheimer’s disease biomarkers, local professional bodies should organise updates and share local experience regarding their use.

Local professional bodies may organise workshops or regular updates to guide clinicians. Local assays are in development and have shown encouraging results (eg, PlasmakAD; Cognitact, Hong Kong SAR, China); they may have future clinical utility if they meet the minimum performance requirements for the test assay in the intended population.²⁴ The use of AD biomarkers suggested in the consensus statement was summarised in Figure 2.

Part B: Anti-amyloid therapies

Target population

Statement 16: Patients with Alzheimer’s disease should have either mild cognitive impairment or early dementia. Given the generally lower educational level among the older population, the diagnosis of mild cognitive impairment or mild

dementia should be primarily based on clinical history.

Statement 17: The Hong Kong version of the Montreal Cognitive Assessment can be used to support the classification of mild cognitive impairment or mild dementia, with locally validated cutoffs according to age and educational level.

Statement 18: The use of anti-amyloid therapies should be reviewed if patients progress to moderate dementia.

Older adults in Hong Kong often have lower levels of formal education. Clinical history obtained from a primary caregiver should be relied upon when assessing cognitive impairment, including staging as MCI or dementia. Mild cognitive impairment should be diagnosed according to the Petersen criteria,²⁸ with preservation of activities of daily living. In patients with dementia, activities of daily living are impaired. The Hong Kong version of the Montreal Cognitive Assessment has been locally validated and may be used as supportive evidence for the diagnosis of MCI or mild dementia.^{11,35} Alternatively,

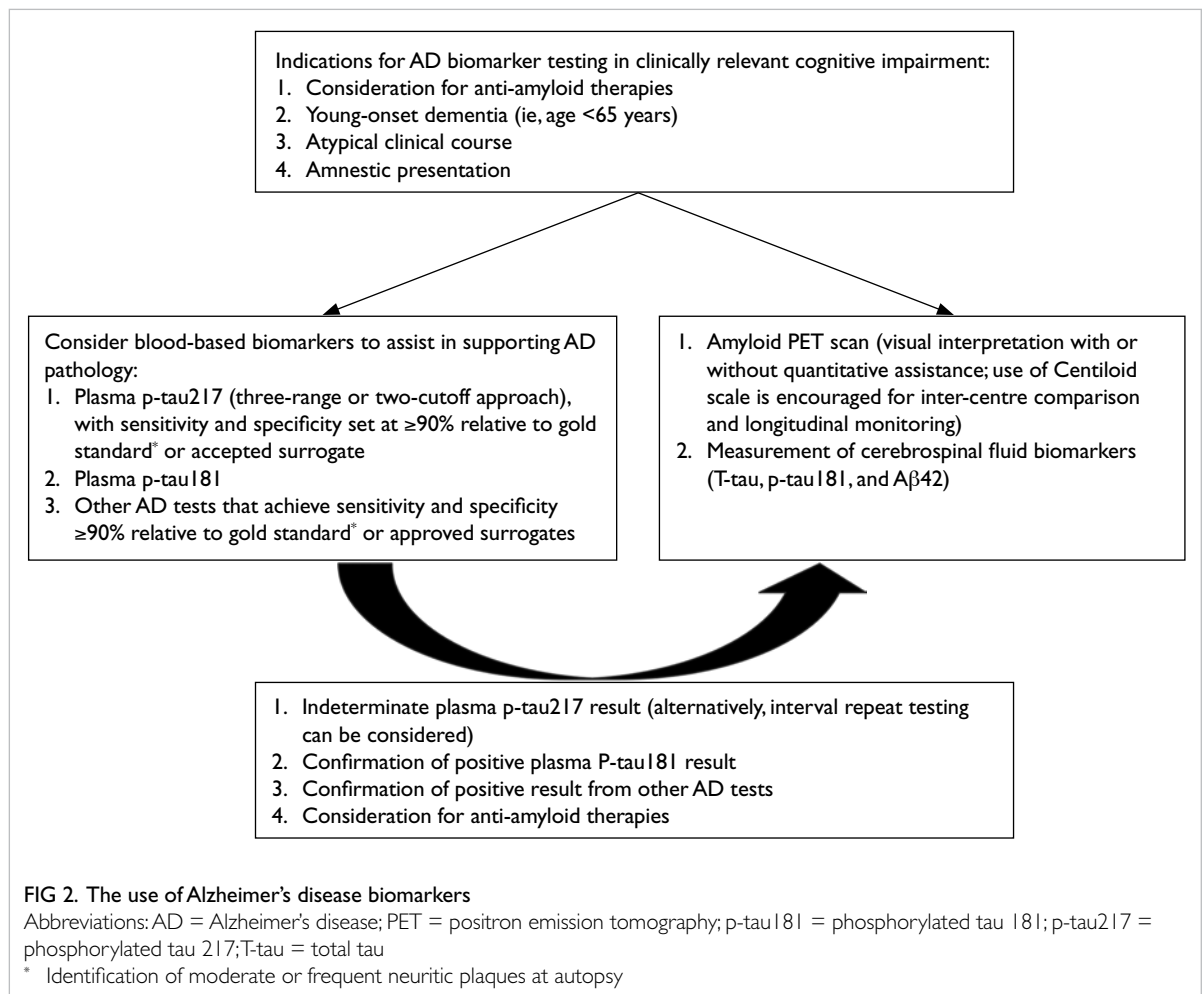


FIG 2. The use of Alzheimer’s disease biomarkers

Abbreviations: AD = Alzheimer’s disease; PET = positron emission tomography; p-tau181 = phosphorylated tau 181; p-tau217 = phosphorylated tau 217; T-tau = total tau

* Identification of moderate or frequent neuritic plaques at autopsy

the Cantonese version of the Mini-Mental State Examination may be used in accordance with the Clarity-AD study, which included patients with the scores between 22 and 30.^{6,20}

Blood pressure

Statement 19: Blood pressure should be adequately controlled according to age and co-morbidities before initiation of anti-amyloid therapies.

Poorly controlled blood pressure has been associated with an increased risk of ARIA.⁸

Magnetic resonance imaging

Statement 20: Patients who are unable to undergo regular magnetic resonance imaging (eg, due to claustrophobia or the presence of magnetic resonance imaging-incompatible devices) should not receive anti-amyloid therapies.

Statement 21: Serial magnetic resonance imaging scans (at least 1.5T, preferably 3.0T) using a standardised protocol and consistent magnetic field strength are recommended during anti-amyloid therapy to monitor the development of amyloid-related imaging abnormalities.

Magnetic resonance imaging is important for monitoring ARIA during treatment with AAT.^{6,11} Accurate detection and follow-up are critical. This is particularly relevant for sequences used to detect microhaemorrhages, including susceptibility-weighted imaging, T2*-weighted gradient echo (T2* GRE), and susceptibility-weighted angiography (SWAN); the first two are more commonly used in Hong Kong. Susceptibility-weighted imaging is reportedly more sensitive than T2* GRE for detecting haemosiderin deposition. Nevertheless, T2* GRE has been preferred in clinical trials because of lower inter-scanner variability.⁴ A previous study comparing SWAN with T2*-weighted imaging indicated that SWAN was similar or superior, particularly for detecting microbleeds or lesions near the skull base.²³ Serial MRI scans should be performed using standardised imaging protocols and, whenever possible, the same scanner to minimise inter-scan variability.

Relevant to amyloid-related imaging abnormalities

Statement 22: Apolipoprotein E genotyping is recommended before initiation of anti-amyloid therapies.

Lecanemab was first approved in China in January 2024, based on the Clarity-AD study,⁵³ which did not include participants of Chinese ethnicity. Donanemab was approved in China in December 2024.⁵⁴ Consequently, data regarding the use of AAT in the Chinese population remain limited. Given the early stage of local implementation, patients

and their relatives should be fully informed of the increased risk of ARIA associated with AAT. To facilitate informed decision-making, apolipoprotein E genotyping should be performed.^{6,11}

Statement 23: Patients and their relatives should be fully informed of the common non-specific symptoms of amyloid-related imaging abnormalities, including headache, dizziness, confusion, nausea, vision changes, gait disturbance, or seizures. They should be advised to inform the attending physician or emergency department promptly if such symptoms occur, and brain magnetic resonance imaging should be arranged as early as possible (if indicated).

Statement 24: Patients receiving anti-amyloid therapies should have an alert in their electronic medical record or be issued a drug card.

Fatal outcomes have been reported following inadvertent administration of intravenous recombinant tissue plasminogen activator to patients receiving AAT who presented to the emergency department with stroke-like symptoms.⁴⁹ Patients and their relatives should inform attending physicians of ongoing AAT, and brain MRI should be arranged as early as possible when clinically indicated.⁴⁹ An alert within the electronic medical record system or provision of a drug card may enable attending doctors, particularly emergency physicians, to be promptly informed of treatment status. Physicians planning to initiate local AAT services are also encouraged to notify colleagues in the stroke team and emergency department.⁴⁹

Multidisciplinary advice

Statement 25: A multidisciplinary approach is recommended when administering anti-amyloid therapies. This approach involves clinicians experienced in the management of cognitive impairment (eg, geriatricians, neurologists, psychiatrists, nuclear medicine physicians, and radiologists).

Experienced clinicians (eg, geriatricians, neurologists and psychiatrists) can identify suitable candidates, arrange baseline evaluations, including apolipoprotein E genotyping, amyloid PET imaging and brain MRI, assess the severity of cognitive impairment, and manage behavioural and psychological symptoms. They can also advise on the management of ARIA, particularly in severe amyloid-related imaging abnormalities—oedema/effusion, which may require pulse corticosteroids, immunosuppressive therapy, or seizure management.^{6,11} Nuclear medicine physicians play a key role in reviewing amyloid and tau PET imaging and interpreting treatment-related amyloid clearance. Radiologists are important for monitoring ARIA and reviewing baseline imaging, including

assessment of the number of microhaemorrhages, the presence of superficial siderosis, and the number of lacunar infarcts.^{6,11}

Infusion reactions

Statement 26: Infusion reactions, including hypersensitivity and acute symptoms such as fever, chills, or nausea, may occur during administration of anti-amyloid therapies. Protocols should be developed to manage various infusion reactions so that medical staff in wards or day centres can respond promptly and reduce the risk of recurrence.

Management of infusion reactions should follow the relevant appropriate use recommendations.^{6,11} The development of clear protocols enables healthcare professionals to address these manifestations with confidence and to implement appropriate preventive measures.^{6,11} General management may include temporary interruption of infusion, intramuscular adrenaline injection, bronchodilators, intravenous hydrocortisone, second-generation antihistamines, and paracetamol.^{6,11} Preventive measures for future infusions may include premedication with paracetamol or non-steroidal anti-inflammatory drugs, second-generation antihistamines, or intravenous hydrocortisone prior to the next AAT infusion.^{6,11}

Conclusion

It is hoped that this consensus statement will provide as practical guidance for local clinicians in the management of patients with AD. Regarding biomarkers in the diagnosis of AD, amyloid PET and CSF biomarkers remain the surrogate gold standards, while other biomarkers that achieve a minimum sensitivity and specificity of at least 90% in the intended population may also be used. For the administration of AAT, clinicians should be aware of contraindications, and relevant risks should be explained to patients and their caregivers. For future implementation of AAT in public system, accessibility to AD biomarkers (eg, plasma biomarkers and amyloid PET), MRI capacity for ARIA monitoring, healthcare infrastructure to support the new treatment, and cost-effectiveness considerations are obstacles that need to be addressed.

Author contributions

All authors contributed to the concept or design, drafting of the manuscript, and critical revision of the manuscript for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

YF Shea reported acting as a member of the Eisai Hong Kong

Lecanemab Advisory Board in 2024. Other authors disclosed no conflicts of interest.

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References

1. Sims JR, Zimmer JA, Evans CD, et al. Donanemab in early symptomatic Alzheimer disease: the TRAILBLAZER-ALZ 2 randomized clinical trial. *JAMA* 2023;330:512-27.
2. van Dyck CH, Swanson CJ, Aisen P, et al. Lecanemab in early Alzheimer's disease. *N Engl J Med* 2023;388:9-21.
3. Palmqvist S, Tideman P, Mattsson-Carlgren N, et al. Blood biomarkers to detect Alzheimer disease in primary care and secondary care. *JAMA* 2024;332:1245-57.
4. Cogswell PM, Andrews TJ, Barakos JA, et al. Alzheimer disease anti-amyloid immunotherapies: imaging recommendations and practice considerations for monitoring of amyloid-related imaging abnormalities. *AJNR Am J Neuroradiol* 2025;46:24-32.
5. Corriveau-Lecavalier N, Botha H, Graff-Radford J, et al. Clinical criteria for a limbic-predominant amnesic neurodegenerative syndrome. *Brain Commun* 2024;6:fcae183.
6. Cummings J, Apostolova L, Rabinovici GD, et al. Lecanemab: appropriate use recommendations. *J Prev Alzheimers Dis* 2023;10:362-77.
7. Dubois B, Villain N, Schneider L, et al. Alzheimer disease as a clinical-biological construct—an international working group recommendation. *JAMA Neurol* 2024;81:1304-11.
8. Greenberg SM, Aparicio HJ, Furie KL, et al. Vascular neurology considerations for anti-amyloid immunotherapy: a science advisory from the American Heart Association. *Stroke* 2025;56:e30-8.
9. Jack CR Jr, Andrews JS, Beach TG, et al. Revised criteria for diagnosis and staging of Alzheimer's disease: Alzheimer's Association Workgroup. *Alzheimers Dement* 2024;20:5143-69.
10. Rabinovici GD, Knopman DS, Arbizu J, et al. Updated appropriate use criteria for amyloid and tau PET: a report from the Alzheimer's Association and Society for Nuclear Medicine and Molecular Imaging Workgroup. *J Nucl Med* 2025;66:S5-31.
11. Rabinovici GD, Selkoe DJ, Schindler SE, et al. Donanemab: appropriate use recommendations. *J Prev Alzheimers Dis* 2025;12:100150.
12. Schindler SE, Galasko D, Pereira AC, et al. Acceptable performance of blood biomarker tests of amyloid pathology—recommendations from the Global CEO Initiative on Alzheimer's Disease. *Nat Rev Neurol* 2024;20:426-39.
13. Palmqvist S, Whitson HE, Allen LA, et al. Alzheimer's Association Clinical Practice Guideline on the use of blood-based biomarkers in the diagnostic workup of

suspected Alzheimer's disease within specialized care settings. *Alzheimers Dement* 2025;21:e70535.

14. Mielke MM, Fowler NR. Alzheimer disease blood biomarkers: considerations for population-level use. *Nat Rev Neurol* 2024;20:495-504.
15. Olsson B, Lautner R, Andreasson U, et al. CSF and blood biomarkers for the diagnosis of Alzheimer's disease: a systematic review and meta-analysis. *Lancet Neurol* 2016;15:673-84.
16. Shea YF, Pan Y, Mak HK, et al. A systematic review of atypical Alzheimer's disease including behavioural and psychological symptoms. *Psychogeriatrics* 2021;21:396-406.
17. Teunissen CE, Verberk IM, Thijssen EH, et al. Blood-based biomarkers for Alzheimer's disease: towards clinical implementation. *Lancet Neurol* 2022;21:66-77.
18. Benedet AL, Brum WS, Hansson O, et al. The accuracy and robustness of plasma biomarker models for amyloid PET positivity. *Alzheimers Res Ther* 2022;14:26.
19. Cecchetti G, Agosta F, Rugarli G, et al. Diagnostic accuracy of automated Lumipulse plasma pTau-217 in Alzheimer's disease: a real-world study. *J Neurol* 2024;271:6739-49.
20. Chiu HF, Lee HC, Chung WS, Kwong PK. Reliability and validity of the Cantonese version of Mini-Mental State Examination—a preliminary study. *J Hong Kong Coll Psychiatr* 1994;4:25-8.
21. Collij LE, Bollack A, La Joie R, et al. Centiloid recommendations for clinical context-of-use from the AMyPAD consortium. *Alzheimers Dement* 2024;20:9037-48.
22. Dyer AH, Dolphin H, O'Connor A, et al. Performance of plasma p-tau217 for the detection of amyloid-beta positivity in a memory clinic cohort using an electrochemiluminescence immunoassay. *Alzheimers Res Ther* 2024;16:186.
23. Hayashida Y, Kakeda S, Hiai Y, et al. Diagnosis of intracranial hemorrhagic lesions: comparison between 3D-SWAN (3D T2*-weighted imaging with multi-echo acquisition) and 2D-T2*-weighted imaging. *Acta Radiol* 2014;55:201-7.
24. Jiang Y, Zhou X, Ip FC, et al. Large-scale plasma proteomic profiling identifies a high-performance biomarker panel for Alzheimer's disease screening and staging. *Alzheimers Dement* 2022;18:88-102.
25. Mattsson-Carlgrén N, Collij LE, Stomrud E, et al. Plasma biomarker strategy for selecting patients with Alzheimer disease for anti-amyloid immunotherapies. *JAMA Neurol* 2024;81:69-78.
26. Mendes AJ, Ribaldi F, Lathuiliere A, et al. Head-to-head study of diagnostic accuracy of plasma and cerebrospinal fluid p-tau217 versus p-tau181 and p-tau231 in a memory clinic cohort. *J Neurol* 2024;271:2053-66.
27. Nakamura A, Kaneko N, Villemagne VL, et al. High performance plasma amyloid- β biomarkers for Alzheimer's disease. *Nature* 2018;554:249-54.
28. Petersen RC, Smith GE, Waring SC, Ivnik RJ, Tangalos EG, Kokmen E. Mild cognitive impairment: clinical characterization and outcome. *Arch Neurol* 1999;56:303-8.
29. Rabe C, Bittner T, Jethwa A, et al. Clinical performance and robustness evaluation of plasma amyloid- β 42/40 prescreening. *Alzheimers Dement* 2023;19:1393-402.
30. Rabinovici GD, Gatsonis C, Apgar C, et al. Association of amyloid positron emission tomography with subsequent change in clinical management among Medicare beneficiaries with mild cognitive impairment or dementia. *JAMA* 2019;321:1286-94.
31. Shea YF, Chu LW, Zhou L, et al. Cerebrospinal fluid biomarkers of Alzheimer's disease in Chinese patients: a pilot study. *Am J Alzheimers Dis Other Demen* 2013;28:769-75.
32. Tetzloff KA, Graff-Radford J, Martin PR, et al. Regional distribution, asymmetry, and clinical correlates of tau uptake on [18F]AV-1451 PET in atypical Alzheimer's disease. *J Alzheimers Dis* 2018;62:1713-24.
33. Theriault J, Servaes S, Tissot C, et al. Equivalence of plasma p-tau217 with cerebrospinal fluid in the diagnosis of Alzheimer's disease. *Alzheimers Dement* 2023;19:4967-77.
34. Thijssen EH, La Joie R, Wolf A, et al. Diagnostic value of plasma phosphorylated tau181 in Alzheimer's disease and frontotemporal lobar degeneration. *Nat Med* 2020;26:387-97.
35. Wong A, Law LS, Liu W, et al. Montreal Cognitive Assessment: one cutoff never fits all. *Stroke* 2015;46:3547-50.
36. Kwon HS, Lee EH, Kim HJ, et al. Predicting amyloid PET positivity using plasma p-tau181 and other blood-based biomarkers. *Alzheimers Dement (Amst)* 2023;15:e12502.
37. Karikari TK, Pascoal TA, Ashton NJ, et al. Blood phosphorylated tau 181 as a biomarker for Alzheimer's disease: a diagnostic performance and prediction modelling study using data from four prospective cohorts. *Lancet Neurol* 2020;19:422-33.
38. Cheung CY, Ran AR, Wang S, et al. A deep learning model for detection of Alzheimer's disease based on retinal photographs: a retrospective, multicentre case-control study. *Lancet Digit Health* 2022;4:e806-15.
39. Fan X, Cai Y, Zhao L, et al. Machine learning-derived MRI-based neurodegeneration biomarker for Alzheimer's disease: a multi-database validation study. *J Alzheimers Dis* 2024;97:883-93.
40. Liu W, Au LW, Abrigo J, et al. MRI-based Alzheimer's disease-resemblance atrophy index in the detection of preclinical and prodromal Alzheimer's disease. *Aging (Albany NY)* 2021;13:13496-514.
41. Jiang Y, Uhm H, Ip FC, et al. A blood-based multi-pathway biomarker assay for early detection and staging of Alzheimer's disease across ethnic groups. *Alzheimers Dement* 2024;20:2000-15.
42. Huang KL, Hsiao IT, Huang CW, et al. The Taiwan-ADNI workflow toward integrating plasma p-tau217 into prediction models for the risk of Alzheimer's disease and tau burden. *Alzheimers Dement* 2025;21:e14297.
43. Thijssen EH, La Joie R, Strom A, et al. Plasma phosphorylated tau 217 and phosphorylated tau 181 as biomarkers in Alzheimer's disease and frontotemporal lobar degeneration: a retrospective diagnostic performance study. *Lancet Neurol* 2021;20:739-52.
44. Ashton NJ, Brum WS, Di Molfetta G, et al. Diagnostic accuracy of a plasma phosphorylated tau 217 immunoassay for Alzheimer disease pathology. *JAMA Neurol* 2024;81:255-63.
45. Figdore DJ, Griswold M, Bornhorst JA, et al. Optimizing cutpoints for clinical interpretation of brain amyloid status using plasma p-tau217 immunoassays. *Alzheimers Dement* 2024;20:6506-16.

46. Kivisäkk P, Fatima HA, Cahoon DS, et al. Clinical evaluation of a novel plasma pTau217 electrochemiluminescence immunoassay in Alzheimer's disease. *Sci Rep* 2024;14:629.
47. Thanapornsanguth P, Booncharoen K, Khieukhaje J, et al. The Bayesian approach for real-world implementation of plasma p-tau217 in tertiary care memory clinics in Thailand. *Alzheimers Dement* 2024;20:6456-67.
48. Arranz J, Zhu N, Rubio-Guerra S, et al. Diagnostic performance of plasma pTau217, pTau181, Aβ1-42 and Aβ1-40 in the LUMIPULSE automated platform for the detection of Alzheimer disease. *Alzheimers Res Ther* 2024;16:139.
49. Reish NJ, Jamshidi P, Stamm B, et al. Multiple cerebral hemorrhages in a patient receiving lecanemab and treated with t-PA for stroke. *N Engl J Med* 2023;388:478-9.
50. Jünger S, Payne SA, Brine J, Radbruch L, Brearley SG. Guidance on Conducting and REporting DElphi Studies (CREDES) in palliative care: recommendations based on a methodological systematic review. *Palliat Med* 2017;31:684-706.
51. Centre for Evidence-Based Medicine. OCEBM Levels of Evidence. Available from: <https://www.cebm.ox.ac.uk/resources/levels-of-evidence/ocebml-levels-of-evidence>. Accessed 23 Mar 2026.
52. United States Food and Drug Administration. FDA clears first blood test used in diagnosing Alzheimer's disease. New test provides less invasive option, reduces reliance on PET scans and increases diagnosis accessibility [press release]. 2025 May 16. Available from: <https://www.fda.gov/news-events/press-announcements/fda-clears-first-blood-test-used-diagnosing-alzheimers-disease>. Accessed 1 Sep 2025.
53. Biogen. LEQEMBI (Lecanemab) approved for the treatment of Alzheimer's disease in China [press release]. 2024 January 9. Available from: <https://investors.biogen.com/news-releases/news-release-details/leqembir-lecanemab-approved-treatment-alzheimers-disease-china>. Accessed 1 Sep 2025.
54. Eli Lilly. Lilly's Kisunla (donanemab-azbt) approved in China for the treatment of early symptomatic Alzheimer's disease [press release]. 2024 December 17. Available from: <https://investor.lilly.com/news-releases/news-release-details/lillys-kisunlatm-donanemab-azbt-approved-china-treatment-early>. Accessed 1 Sep 2025.