Review Article

Recommendations for the Clinical Use of Anti-Amyloid-ß Monoclonal Antibody for Alzheimer's Disease (2024)

Article History
Received: 06-Nov-2024
Revised: 08-Dec-2024
Accepted: 18-Feb-2025
Published: 25-Aug-2025

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Abstract: Several anti-amyloid-β monoclonal antibodies have been approved for clinical use in China and some other countries recently. To facilitate the safe and effective treatment of anti-amyloid-β monoclonal antibodies for Alzheimer's disease (AD) in China, we present recommendations for the clinical use of anti-amyloid-β monoclonal antibodies based on existing clinical trials and the clinical practice of AD treatment with Aducanumab at Ruijin Hospital Hainan Branch, Shanghai Jiaotong University School of Medicine. The recommendations include clinical indications, pre-medication assessment and preparation, medication instructions and precautions, as well as post-medication clinical monitoring, which is aimed at furnishing clinicians with comprehensive medication guidance.

Keywords: Alzheimer disease; Amyloid beta-peptides; Antibodies, Monoclonal; Diagnosis; Drug Therapy; Guideline

INTRODUCTION

Alzheimer's disease (AD) is the most common cause of dementia[1]. According to "The China Alzheimer Report", as of 2019, the prevalence of Alzheimer's disease and related dementias (ADRD) in China was 924.1/100,000, the mortality rate was 22.5/100,000, and the disability-adjusted life years (DALYs) were 368.5/100,000. These figures are slightly higher than the global average[2–3], placing a significant burden on families and society[4].Unfortunately, drug treatment for AD and the development and application of new drugs fall short of meeting clinical needs[5]. The classic β-amyloid protein (Aβ) hypothesis holds that the deposition of Aβ in brain tissue is the initial cause of the disease, occurring 15 to 20 years before the onset of clinical symptoms and signs[6]. Therapies targeting Aβ have also been a hot spot in the development of AD drugs. Recently, several anti-Aβ monoclonal antibodies, Aducanumab (Aduhelm®; Biogen), Lecanemab (Leqembi®; Eisai and Biogen), Donanemab (Kisunla®; Eli Lilly), were approved by the U.S. Food and Drug Administration (FDA) in 2021, 2023 and 2024 respectively. Subsequently, Lecanemab was approved for marketing in China in January 2024. Aducanumab was first used at Hainan Hospital of Ruijin Hospital Affiliated to Shanghai Jiao Tong University School of Medicine (Hainan Boao Research Hospital) in December 2022. Since then, aducanumab has been used in 15 patients with mild cognitive impairment due to AD and mild AD dementia in our team. Lecanemab became widely available in China since June 2024. In addition, other anti-Aβ monoclonal antibodies represented by SHR-1707 are in the clinical trial stage. These anti-Aβ monoclonal antibodies share some common features targeting

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Aβ aggregates which aims to lower Aβ burden in brain and obtain potential clinical benefit in patients with mild cognitive impairment (MCI) due to AD and mild AD dementia. The advent of anti-Aβ monoclonal antibodies signifies a new era of disease-modifying therapy (DMT) for AD[7]. This recommendation is based on the phase III clinical trials of anti-Aβ monoclonal antibodies (Aducanumab: EMERGE and ENGAGE trials[8], Lecanemab: CLARITY trial[9], Donanemab: TRAILBLAZER-ALZ2 trial[10]), the drug instructions of Aducanumab (https://www.accessdata.fda.gov/drugsatfda_docs/label/2023/761178s0111bl.pdfpage=26) and Lencanerumab (https://www.accessdata.fda.gov/drugsatfda_docs/label/2023/7612690rig-1s001lbl.pdf#page=21), and the clinical practice of aducanumab in Hainan Boao Research Hospital. It aims to systematically guide the clinical application of anti-Aβ monoclonal antibodies in China including clinical indications, pre-medication assessment and preparation, medication instructions and precautions, as well as post-medication clinical monitoring of adverse reactions, which uses aducanumab and lecanemab as examples.

1.CLINICAL INDICATIONS

1.1 Disease Types

Anti-Aβ monoclonal antibodies are recommended for patients with MCI or mild dementia due to AD. They are also indicated for patients with early-onset familial Alzheimer's disease as a specific population. However, it is not advised for other forms of degenerative dementia, and there is currently no evidence supporting its clinical use in these cases.

1.2 Patients Suitable for Medication

The "Aducanumab: appropriate use recommendation" published by Cummings et al. highlighted that patients receiving aducanumab should meet the inclusion criteria of the two pivotal Phase III clinical trials EMERGE and ENGAGE [11]. These criteria include: (1) Patients with early Alzheimer's disease aged 50 to 85 years (including mild cognitive impairment and mild dementia); (2) Mini-Mental State Examination (MMSE) score of 24 to 30 points; (3) Clinical Dementia Rating Scale-Global Score (CDR-GS) of 0.5 points; (4) Repeated Battery for the Assessment of Neuropsychological Status (RBANS) delayed memory index ≤ 85 points; (5) Aβ deposition in brain tissue [12–13]. In our clinical practice, we have administered medication to patients ranging from 31 to 78 years old. As the RBANS test is not widely used in China and there is no Chinese version available, we currently use the MMSE scale to assess overall cognitive function before and during medication. Aβ positron emission tomography (PET) imaging is employed to detect pathological changes associated with AD. The medication process for 15 patients has been successful, with no amyloid-related imaging abnormalities (ARIA) detected thus far. Based on our clinical experience, we recommend that clinicians adjust their medication criteria as follows: (1) The age range should be expanded, with no lower age limit set. Young patients who meet other indications for AD treatment can be considered for aducanumab treatment, providing early medication opportunities for those with early-onset AD and familial AD. (2) Patients must meet the clinical diagnostic criteria for mild cognitive impairment or mild AD dementia, with an MMSE score between 21 and 30 points or global CDR score of 0.5, considering patients with low educational levels in practical use. Patients with the same cognitive level can also be selected based on the application experience of cognitive assessment scales in different regions, such as the Montreal Cognitive Assessment (MoCA) score of 17 to 30 points. (3) Aβ-PET/CT or Aβ-PET/MR should show positive results (visual read), with PET/MR preferred for qualitative and quantitative (standardized uptake value ratio - SUVR) judgment of Aβ deposition. Medication can also be considered if the cerebrospinal fluid examination meets the diagnostic criteria for Alzheimer's disease and has been verified by Aβ-PET/CT or Aβ-PET/MR. The criteria for the clinical trial population of anti-Aβ monoclonal antibodies and the applicable standards for clinical practice are outlined in **Table 1**.

Table 1. Inclusion criteria in clinical trials and applicable criteria in clinical practice of anti-Aβ monoclonal antibody.

Items	Inclusion Criteria in Clinical Trial	Applicable Criteria in Clinical Practice
Age	50–85	≤85
Diagnosis	Clinical criteria for MCI due to AD or mild AD dementia	Clinical criteria for MCI due to AD or mild AD dementia
Scale scores at baseline	MMSE 24–30; Global CDR Score 0.5; RBANS Delayed Memory Score of ≤ 85	MMSE 21–30 or equivalent; Global CDR Score 0.5
Amyloid status	Amyloid positive PET	Amyloid positive PET or CSF findings consistent with AD and verified by Aβ-PET/CT or Aβ-PET/MR
Genetic testing	Consent for APOE genotyping	The willingness and need for genetic testing should be discussed with patients/caregivers
Neurological examination	Non-AD neurological disorders, stroke, and TIA excluded	Non-AD neurological disorders excluded
Cardiovascular history	Angina; myocardial infarction; congestive heart failure excluded	Stable cardiovascular conditions required (no symptoms for the past 3 months or stable condition as assessed by the cardiologist); clinical decision can be exercised on the ability of the patient to participate safely with the therapeutic regimen
Medical history	Excluded: clinically significant systemic illness; uncontrolled diabetes; uncontrolled hypertension; history of cancer unless in remission for 5 years; impaired liver function; hepatitis; HIV infection	Stable medical conditions required (no significant fluctuations in main indicators such as blood pressure and blood glucose with the treatment ≥3 months, or stable condition as assessed by the specialist); clinical decision can be exercised on the ability of the patient to participate safely with the therapeutic regimen
Psychiatric history	Unstable psychiatric illness in the past 6 months; alcohol or substance abuse	Psychiatric illness must be stable (assessed by the specialist); clinical decision can be exercised on the ability of the patient to participate safely with the therapeutic regimen
Reproductive status	Female subjects who are pregnant or breast feeding excluded; female subjects who are of childbearing age must be practicing contraception	Same as the Clinical Trial Enrollment Criteria [11]
Clotting status	Bleeding disorders, anticoagulants excluded	Same as the Clinical Trial Enrollment Criteria [11]
Concomitant Medication	Cholinesterase inhibitors and memantine allowed	Same as the Clinical Trial Enrollment Criteria[11]
Baseline MRI	Baseline MRI finding that excluded participation: acute or subacute hemorrhage, macrohemorrhage, greater than 4 microhemorrhages, cortical infarction (>1.5 cm), 1 lacunar infarction (>1.5 cm), superficial siderosis, or widespread white matter disease	Same as the Clinical Trial Enrollment Criteria[11]
Care support	Reliable informant or care partner	May be living independently or with a care partner
Inform consent	Must be signed by participant and care partner Patient and care partner	Patient and care partner must understand the process, requirements and the expected outcome of therapy

MMSE, Mini-Mental StateExamination; CDR-CS, Clinical Dementia Rating-Global Scale; RBANS, Repeatable Battery for the Assessment of Neuropsychological Status; Aβ, amyloid β-protein; APOE, apolipoprotein E; TIA, transient ischemic attack; HIV, human immunodeficiency virus.

1.3 Patients Unsuitable for Medication

(1) Patients with concurrent neurological diseases that may induce other clinical syndromes should not receive aducanumab treatment, such as Parkinson's syndrome, stroke, rapidly progressive dementia (RPD), or widespread white matter ischemic changes. Anti-Aβ monoclonal antibodies are not recommended for patients with Fazekas grade 3, and patients with Fazekas grade 1 or 2 need to be evaluated according to their general condition. Patients with recent severe behavioral and psychiatric symptoms of dementia (BPSD) which may affect treatment compliance should postpone aducanumab treatment until condition stabilizes. (2) Patients with poorly controlled systemic diseases or serious underlying diseases such as malignant tumors or heart failure should have their systemic diseases treated first, and the medication should be used only after the condition stabilizes. (3) Patients with magnetic resonance imaging (MRI) showing cerebral microhemorrhages, abnormal coagulation function, or currently taking anticoagulants are at risk of developing severe amyloid-related imaging abnormalities and should not receive aducanumab treatment [11].

2. Pre-medication Assessment and Preparation: The pre-medication assessment mainly includes the determination of Aβ deposition in brain tissue, MRI examination, genetic testing for the apolipoprotein E (APOE) genotype, risk notification and informed consent. See **Table 2** for the pre-medication assessment process.

Table 2. Pre-medication assessment of Anti-Aβ Monoclonal Antibody.

Medical History	Examinations and Tests	AD Biomarkers
• Present illness of cognition • Overall neuropsychological assessment • Past medical history and medication use	• Blood tests, including routine blood test, liver and kidney function, coagulation function test • APOE Genotyping • MRI, including T1WI, T2WI, FLAIR, DWI, SWI	• Detection for pathological Aβ deposition in the brain through Aβ-PET or CSF examination

MRI, magnetic resonance imaging; APOE, apolipoprotein E; T1WI, T1 weighted imaging; T2WI, T2 weighted imaging; FLAIR, fluid attenuated inversion recovery; DWI, diffusion-weighted imaging; SWI, susceptibility-weighted imaging; Aβ, β-amyloid; PET, positron emission tomography; CSF, cerebrospinal fluid.

2.1 Aß Deposition in Brain

Both aducanumab and lecanemab require the determination of pathological Aβ deposition before medication. Detection methods include Aβ-PET or cerebrospinal fluid (CSF) examination. For asymptomatic patients with abnormal CSF examination but normal Aβ-PET imaging, aducanumab treatment is not recommended. Additionally, for patients who lack the therapeutic target of pathological Aβ deposition, aducanumab treatment should not be given[11].

2.2 Brain MRI

Both instructions for aducanumab and lecanemab recommend performing a recent brain MRI examination (within 1 year prior to medication) to monitor the risk of amyloid-related imaging abnormalities. The same MRI equipment and imaging protocol should be used whenever possible to make image comparison easier. Patients who are unable to undergo MRI examination (such as those with claustrophobia, implanted cardiac pacemakers, aneurysm metal clips, or foreign bodies like metal fragments in the eye) should not be treated with aducanumab [11].

2.3 Genetic Testing

It is not necessary to test for the APOE genotype before taking anti-Aβ monoclonal antibodies because the treatment and clinical monitoring are the same for patients with or without APOEε4 allele. However, the presence of the APOEε4 allele is important for predicting the occurrence of amyloid-related imaging abnormalities. Therefore, it is recommended that patients and their caregivers participate in discussions about the risk of amyloid-related imaging abnormalities associated with the APOEε4 allele. They should be asked whether they are willing to undergo APOE genotyping and

then determine whether to receive aducanumab treatment. Clinicians should share and discuss relevant information, such as the risk of amyloid-related imaging abnormalities associated with the APOEε4 allele, as well as the clinical outcomes, monitoring, and treatment for amyloid-related imaging abnormalities.

2.4 Risk Notification and Informed Consent

Patients and their caregivers should be fully informed of precautions and their informed consent should be obtained before medication. Moreover, patients considering aducanumab treatment should understand that the expected benefit is to delay cognitive decline rather than improve current clinical symptoms. It is crucial for patients to comprehend the course of Alzheimer's disease and receive basic education on topics such as drugs that enhance cognitive function, which can help improve mood, reduce anxiety, and lighten the burden on caregivers. Before using the medication, patients should also be informed about potential risks and adverse reactions, such as amyloid-related imaging abnormalities and hypersensitivity reactions. If symptoms of amyloid-related imaging abnormalities occur, MRI examinations should be performed promptly. Overall, it is recommended that patients and their caregivers be thoroughly informed about medication-related matters, including treatment requirements (dosage, frequency), anticipated outcomes, potential risks and adverse reactions, as well as the economic burden associated with drug treatment and monitoring[11]. Besides, signed informed consent from patients and their caregivers should be obtained.

3. MEDICATION INSTRUCTIONS AND PRECAUTIONS

3.1 Dosage

Aducanumab is administered via intravenous drip over 1 hour, once every 4 weeks, with a minimum interval of 21 days between doses. The dosage of the drug must follow the principle of gradual titration from low to high, as outlined in **Table 3**.

Table 3. Dose and timing of Aducanumab administration.

Frequency (Every 4 weeks)	Dosage (Administration completed within 1 hour)
1st and 2nd	1 mg/kg
3rd and 4th	3 mg/kg
5th and 6th	6 mg/kg
7th to 12th	10 mg/kg

3.2 Single Medication Instructions

In single medication, short-acting corticosteroids such as prednisone 40 mg can be used prophylactically to reduce the risk of excessive systemic immune response, with proton pump inhibitors like omeprazole or pantoprazole to preventively protect the gastric mucosa. It is recommended to monitor the electrocardiogram during medication, as well as complete blood count, liver and renal function, coagulation function, and brain MRI [including T1 weighted imaging(T1WI), T2 weighted imaging(T2WI), Fluid-Attenuated Inversion Recovery (FLAIR), diffusion-weighted imaging (DWI), and susceptibility-weighted imaging (SWI)] before and during medication.

3.3 Precautions

When it comes to missed doses, here are the recommendations: if only one dose is missed, the next dose should be taken as soon as possible; if ≥3 doses have been missed and treatment is still needed, the dose should be restarted at a lower level than the previous dose (for example, if the previous dose was 6 mg/kg, restart from 3 mg/kg) and then increase the dose every month [11]. As for combined medication, the instructions for using aducanumab do not specify adverse drug-drug interactions, and its Phase III clinical trial allows subjects to routinely use other anti-Alzheimer's disease drugs and psychotropic drugs, including cholinesterase inhibitors (such as donepezil, rivastigmine, galantamine), memantine, antidepressants, antipsychotics, sedatives, and hypnotics.

Additionally, lecanemab is also given by intravenous drip at a recommended dose of 10 mg/kg, completed within about 1 hour after dilution, once every 2 weeks. If a dose is missed, the next one should

be given as soon as possible. For more medication instructions and precautions, please refer to the aducanumab and lecanemab guidelines.

4. CLINICAL MONITORING AND MANAGEMENT OF ADVERSE REACTIONS

4.1 Clinical Monitoring (MRI to detect amyloid-related imaging abnormalities)

Any recent symptoms related to amyloid-related imaging abnormalities should be inquired before every medication administration. The instructions for aducanumab and our team recommend MRI examinations before the 5th, 7th, 9th, and 12th doses, apart from the baseline MRI examinations, to better detect amyloid-related imaging abnormalities [11,14] (**Fig. 1**). In addition to the scheduled MRI examinations, if a patient experiences symptoms suggesting amyloid-related imaging abnormalities, such as headache, vomiting, nausea, confusion, dizziness, visual impairment, gait disorder, balance disorder, tremor, transient ischemic attack (TIA), new seizure, or significant and unexpected acute cognitive decline, an MRI examination should be promptly conducted [11]. If a patient develops symptoms of amyloid-related imaging abnormalities, medication administration should be paused until symptoms improve and MRI confirms improvement. Then, medication can be resumed based on the patient's clinical status. For patients with severe symptoms, the drug should be discontinued and monitoring should continue until MRI confirms stable imaging. If a patient is asymptomatic and imaging shows mild amyloid-related imaging abnormalities-edema (ARIA-E) or amyloid-related imaging abnormalities-hemorrhage (ARIA-H), the medication can be cautiously continued. However, if imaging shows moderate or severe ARIA-A or ARIA-H, medication should be discontinued (**Table 4, 5**). The instructions for lecanemab recommend MRI examinations before the 5th, 7th, and 14th doses, with strengthened clinical vigilance for amyloid-related imaging abnormalities within 14 weeks of starting treatment (**Fig. 1**). Prompt clinical evaluation, including MRI examination, should be performed if a patient develops symptoms suggesting amyloid-related imaging abnormalities. Subsequent treatment options should be determined based on the type, severity, and symptoms of the detected imaging abnormalities. Recommendations for managing ARIA-E and ARIA-H with lecanemab are consistent with those for aducanumab. The severity grading of amyloid-related imaging abnormalities is shown in **Table 6** [15].

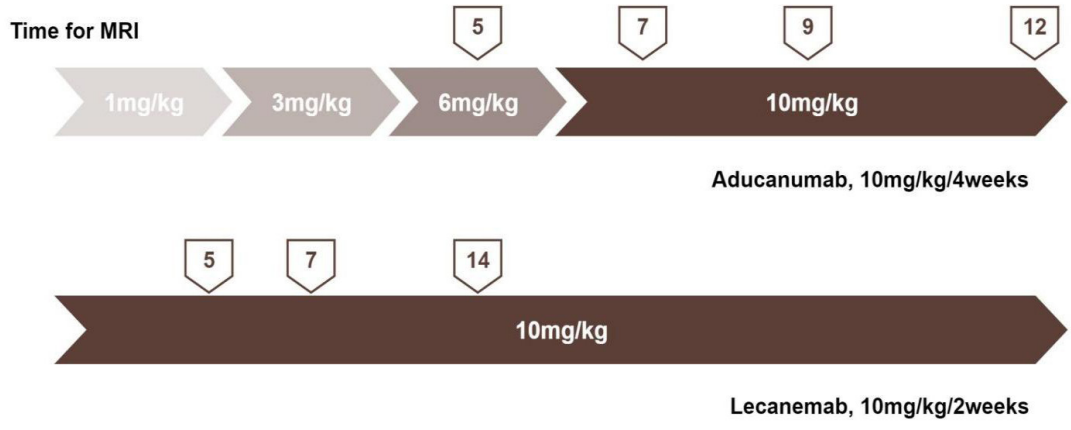

Figure 1. Drug dose and MRI monitoring

 https://doi.org/10.37819/hb.1.2077

Table 4. Recommendations for discontinuing anti-Aβ monoclonal antibody dosing in patients with ARIA-E.

	MRI Severity Levels of ARIA-E		
Clinical Severity	**Mild**	**Moderate**	**Severe**
No symptoms	Continue at the current dose and schedule	Pause medication	Pause medication
Mild	Whether to continue medication can be determined based on clinical status	Pause medication	Pause medication
Moderate or severe	Pause medication	Pause medication	Pause medication

ARIA-E, amyloid-related imaging abnormalities with edema.

Table 5. Recommendations for discontinuing anti-Aβ monoclonal antibody dosing in patients with ARIA-H.

	MRI Severity Levels of ARIA-H		
Clinical Severity	**Mild**	**Moderate**	**Severe**
No symptoms	Continue at the current dose and schedule	Pause medication	Pause medication
Symptoms	Pause medication	Pause medication	Pause medication

ARIA-H, amyloid-related imaging abnormalities with hemorrhage.

Table 6. Severity of ARIA.

Classification	**Severity**		
MRI			
ARIA-E	Mild: One site involvement with diameter < 5 cm	Moderate: One site involvement with diameter 5–10 cm, or more than 1 site with each measuring <10 cm	Severe: ≥1 site with diameter >10 cm
ARIA-H microhemorrhages	Mild: ≤4 new microhemorrhages	Moderate: 5–9 new microhemorrhages	Severe: ≥10 new microhemorrhages
ARIA-H superficial siderosis	Mild:1 focal area	Moderate: 2 focal areas	Severe: >2 focal areas
Clinical symptoms	No symptoms	Mid: Mild neurologic deficits resolving within a few days	Moderate to severe: Persistent neurologic deficits, altered consciousness, or seizures

ARIA-E, amyloid-related imaging abnormalities with edema; ARIA-H, amyloid-related imaging abnormalities with hemorrhage.

4.2 Management of Amyloid-Related Imaging Abnormalities

Patients with amyloid-related imaging abnormalities (ARIA-E or ARIA-H) who develop symptoms should discontinue medication, undergo clinical assessment and neurological examination, and recheck MRI within 1 month. If ARIA-E resolves or ARIA-H stabilizes, medication should be resumed. If ARIA-E does not resolve or ARIA-H worsens, medication should be discontinued, and MRI ex-

aminations should be performed monthly thereafter until treatment can be restarted or a decision is made to terminate treatment. If ≥3 doses of aducanumab have been missed before restarting treatment, the drug dose should be re-titrated as described above. Patients with amyloid-related imaging abnormalities who develop severe symptoms (such as seizures, stroke-like syndrome) should not resume medication. Since there is no more clinical treatment data on severe symptoms of amyloid-related imaging abnormalities, it is recommended to refer to traditional ways for symptomatic treatment, including treating seizures, dehydration to reduce intracranial pressure. Asymptomatic patients with moderate to severe ARIA-E or ARIA-H should suspend medication and follow procedures for symptomatic patients. If imaging suggests mild ARIA-E or ARIA-H, treatment can be continued, but MRI examinations should be performed every month until ARIA-E resolves or ARIA-H stabilizes [14] (**Fig. 2**).

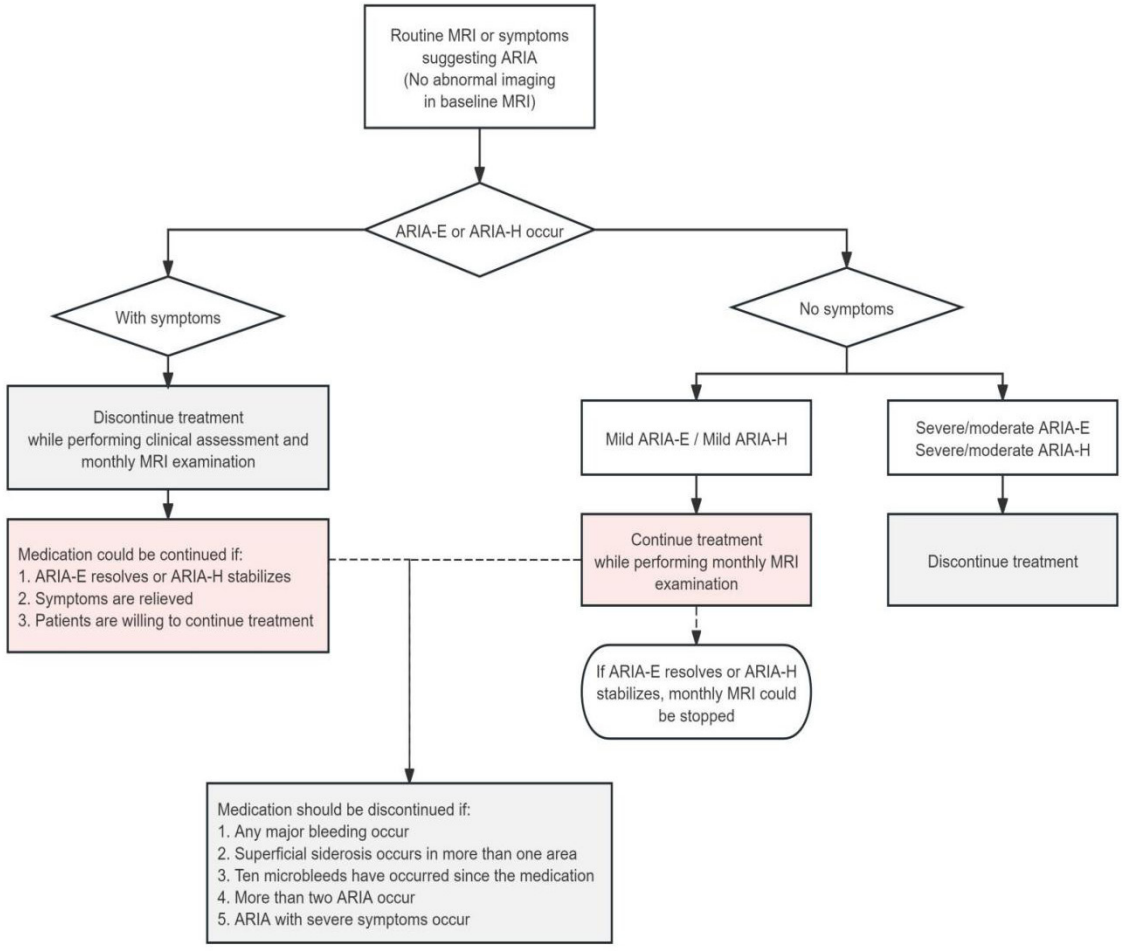

Figure 2. Treatment strategies for amyloid-related imaging abnormalities.

4.3 Prevention and Management of Hypersensitivity

Apart from amyloid-related imaging abnormalities, hypersensitivity reactions should also be monitored after administering aducanumab. If symptoms or signs consistent with hypersensitivity reactions are observed, the infusion should be stopped immediately, and anti-hypersensitivity treatment should be started. It is recommended to remain vigilant for potential adverse events of aducanumab, such as headaches, falls, and diarrhea[11]. Similarly, apart from hypersensitivity reactions, lecanemab should be monitored for infusion reactions, which may include

fever, flu-like symptoms (chills, body aches, tremors, and arthralgia), nausea, vomiting, hypotension, hypertension, and decreased pulse oximetry. If these reactions occur, the infusion rate should be reduced or stopped, and symptomatic treatment should be given based on clinical symptoms and signs. In the case of clinically observed hypersensitivity reactions, consider using antihistamines, acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs), or corticosteroids preventatively before starting subsequent treatment courses.

4.4 Medication Recommendations for Special Populations

(1) Reproductive or Teratogenic Effects: There are no studies on the reproductive or teratogenic effects of aducanumab. As a precautionary measure, women of childbearing age with AD should use contraception while taking aducanumab. (2) Combined Use of Anticoagulants or Antiplatelet Drugs: Clinical trials of aducanumab have excluded patients at risk of severe amyloid-related imaging abnormalities, including those with cerebral microhemorrhage, abnormal coagulation function, or those using anticoagulants. It is unclear whether these characteristics affect the use of aducanumab. As a precautionary measure, patients receiving anticoagulant therapy or with coagulation disorders are not recommended to use anti-Aβ monoclonal antibodies. However, patients taking antiplatelet drugs prophylactically are allowed. (3) Thrombolytic Therapy During the Use of Anti-Aβ Monoclonal Antibodies: There are no clinical studies on the regimens, effectiveness, and safety of treatment on ischemic stroke during the use of monoclonal antibodies. There is a case report of an ischemic stroke during the use of lecanemab, with the patient developing multiple intracerebral hemorrhages and eventually dying after receiving intravenous thrombolysis[16]. Although systematic clinical research data is lacking, this case report suggests that intravenous thrombolysis during the use of anti-Aβ monoclonal antibodies may increase the risk of cerebral hemorrhage. Therefore, patients currently receiving anti-Aβ monoclonal antibody treatment are not recommended to receive intravenous thrombolysis.

Conclusion

Since 2021, aducanumab and lecanemab have been approved for marketing in many countries. While there are still controversies, it is undeniable that they have boosted confidence in the research and development of anti-Aβ monoclonal antibodies and offered hope to patients with Alzheimer's disease. To ensure the safe and rational use of these antibodies, clinicians should be well-versed in the indications for medication and the monitoring process before and after medication. This will help to avoid secondary damage to patients due to improper indication or treatment of adverse reactions. However, the time of actual application of these antibodies is still short, and more clinical data needs to be accumulated in the future to further guide rational medication. As clinical research results and practice experience are gathered, these recommendations will be continuously updated to become more reasonable. With the continuous approval of anti-Aβ monoclonal antibody drugs, more of these drugs will be used in clinical practice, and physicians will gain more experience in their use, ultimately benefitting Alzheimer's patients.

Acknowledgment

The authors acknowledge the contributions of all clinical physicians involved in the summary of clinical experience.

Conflict of Interest Disclosures

Competing interests: None declared.

Funding

This report was supported by a grant from Brain Science and Brain-Like Intelligence Technology of the Ministry of Science and Technology of China (2021ZD0201804).

List of Abbreviations

AD: Alzheimer's disease
ADRD: Alzheimer's disease and related dementias
DALYs: disability-adjusted life years
Aβ: β-amyloid
FDA: Food and Drug Administration
MCI: mild cognitive impairment
DMT: disease-modifying therapy
MMSE: Mini-Mental State Examination
CDR-GS: Clinical Dementia Rating Scale-Global Score

RBANS: Repeated Battery for the Assessment of Neuropsychological Status
PET: positron emission tomography
CSF: cerebrospinal fluid
ARIA: amyloid-related imaging abnormalities
MoCA: Montreal Cognitive Assessment
SUVR: standardized uptake value ratio
RPD: rapidly progressive dementia
BPSD: behavioral and psychiatric symptoms of dementia
MRI: magnetic resonance imaging
APOE: apolipoprotein E
T1WI: T1 weighted imaging
T2WI: T2 weighted imaging
FLAIR: Fluid-Attenuated Inversion Recovery
DWI: diffusion-weighted imaging
SWI: susceptibility-weighted imaging
TIA: transient ischemic attack
ARIA-E: amyloid-related imaging abnormalities-edema
ARIA-H: amyloid-related imaging abnormalities-hemorrhage
NSAIDs: nonsteroidal anti-inflammatory drugs

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