Amyloid-Related Imaging Abnormalities (ARIA) with Emerging Alzheimer's Disease Therapeutics: Detection and Reporting Recommendations for Clinical Practice

Recommended Reporting Templates

TEMPLATE 1: MRI BRAIN DEMENTIA
Description: Baseline imaging for cognitive impairment or screening prior to initiating anti amyloid therapy

EXAMINATION: Magnetic resonance imaging (MRI) of the brain without contrast

HISTORY: [<Memory loss>][<Describe duration, main symptoms, and biomarkers.>]

TECHNIQUE: Multiplanar multi-weighted MRI of the brain and brainstem was performed without intravenous contrast using a protocol specific to assess patients with memory complaints or for baseline assessment prior to initiating anti amyloid therapy. The protocol specifically includes high resolution T1-weighted images to assess brain structures, T2-FLAIR to assess for potential infarcts and white matter lesions associated with vascular cognitive impairment, and susceptibility sensitive sequences for detection of microhemorrhages and siderosis.

Blood sensitive sequence: [<SWI>][<GRE/T2*>]
Field strength: [<3 T>][<1.5 T>]

COMPARISON: [<None available.>]

FINDINGS:

Total microhemorrhages: [<number >] [<describe locations in general, deep vs lobar>]

Superficial siderosis: [< none>][< 1 focal area of superficial siderosis>][< 2 focal areas of superficial siderosis >][>2 focal areas of superficial siderosis>]<describe locations>]

[<general description of other acute or chronic findings>]

IMPRESSION: [ ].

1. Total microhemorrhages [[<0-4>, <5-9>,< ≥10 >]].
2. Superficial siderosis is [<not detected>][<present>].
3. [Other impression points]

TEMPLATE 2: MRI BRAIN ARIA
Description: Follow up imaging for patients undergoing treatment with an amyloid-lowering antibody therapy

EXAMINATION: Magnetic resonance imaging (MRI) of the brain without contrast

HISTORY: [<If information is available, include agent, doses received, date of last dose, and symptoms if present>].

TECHNIQUE: Multiplanar multi-weighted MRI of the brain and brainstem was performed without intravenous contrast using a protocol specific to assess patients with memory complaints undergoing disease modifying therapies. The protocol specifically includes T2-FLAIR to assess for potential amyloid related imaging abnormalities with edema (ARIA-E), and susceptibility sensitive sequences for detection of microhemorrhages and superficial siderosis (ARIA-H).

Blood sensitive sequence: [<SWI>][<GRE/T2*>]
Field strength: [<3 T>][<1.5 T>]

COMPARISON: [<None available.>]

FINDINGS:

ASSESSMENT FOR ARIA:
Scan quality is: [<adequate>][<inadequate and patient should return for repeat imaging>][<if inadequate, reason>]

ARIA-E
Prior FLAIR hyperintensities concerning for ARIA-E: [<no prior exam available for adequate comparison>][<yes>][<describe location(s) and extent (cm)>][<describe change>]

New/incident FLAIR hyperintensities concerning for ARIA-E: [<yes>][< specify as definite or possible][<describe location(s) and extent (cm)>]

Total current regions of FLAIR hyperintensities concerning for ARIA-E: [<none>, <1>, < >1 >]

ARIA-H
Microhemorrhages at pre-treatment baseline: [<0-4>, <5-9>,< ≥10>] [<describe locations in general, deep vs lobar >]

Prior treatment emergent microhemorrhages (ARIA-H): [<no prior treatment monitoring exam available for adequate comparison>][<number of definite microhemorrhages present on prior monitoring exam>] [<describe locations>]

New microhemorrhages (ARIA-H): [<number of definite new microhemorrhages since prior exam>] [<describe locations>]

Total treatment emergent microhemorrhages (ARIA-H) = prior treatment emergent + new microhemorrhages: [<0-4>, <5-9>,< ≥ 10>]

Prior treatment emergent siderosis (ARIA-H): [<no prior exam available for adequate comparison>][<number of prior focal areas of superficial siderosis>]

New siderosis (ARIA-H): [<number of new focal area of superficial siderosis>]

Total treatment emergent focal areas of superficial siderosis: [<1 focal area of superficial siderosis>] [<2 focal areas of superficial siderosis>] [< >2 focal areas of superficial siderosis>]

OTHER
[<general description of other acute or chronic findings>]

IMPRESSION: [ ].

1. Since [Date of Prior] [unchanged/increased/decreased] findings of ARIA-[E/H microhemorrhages/H superficial siderosis] most notable in [area or areas of the brain with the greatest change]

Findings concerning for [< no>][<mild>][<moderate>][<severe>] ARIA-E
Findings concerning for [< no>][<mild>][<moderate>][<severe>] ARIA-H related microhemorrhages.
Findings concerning for [< no>][<mild>][<moderate>][<severe>] ARIA-H related siderosis.

2. [Other findings]

ARIA severity grading (Table 2 manuscript)

Radiographic Severity

	Mild	Moderate	Severe
ARIA-E (sulcal and/or cortical/subcortical FLAIR hyperintensity)	One location < 5cm	One location 5-10 cm OR More than one location each < 10 cm	One more location > 10 cm
ARIA-H (cumulative treatment emergent microhemorrhages)	0-4	5-9	≥ 10
ARIA-H (superficial siderosis)	1 focal area	2 focal areas	> 2 focal areas