Amyloid related imaging abnormalities (ARIA)

- Variety of imaging features identified in patients with Alzheimer disease being treated with novel amyloid lowering therapies
- such as the Monoclonal antibodies
  - Bapineuzumab (nicknamed "bapi")
  - Solanezumab
  - Aduhelm - Aducanumab
  - LEQEMBI® (lecanemab-irmb)

ARIA-E

- E for edema characterized by the presence of 1:
  - Parenchymal edema (ARIA-E edema)
    - high T2/FLAIR signal involving subcortical white matter and/or cortex
    - no abnormal diffusion restriction
    - no parenchymal enhancement, but subtle overlying leptomeningeal/cortical enhancement may be seen
  - Sulcal effusions (ARIA-E effusions)
    - high FLAIR signal (non-attenuating) in sulci often overlying an area of parenchymal edema
- Although ARIA-E can occur bilaterally, it is most frequently (~2/3) unilateral [1]

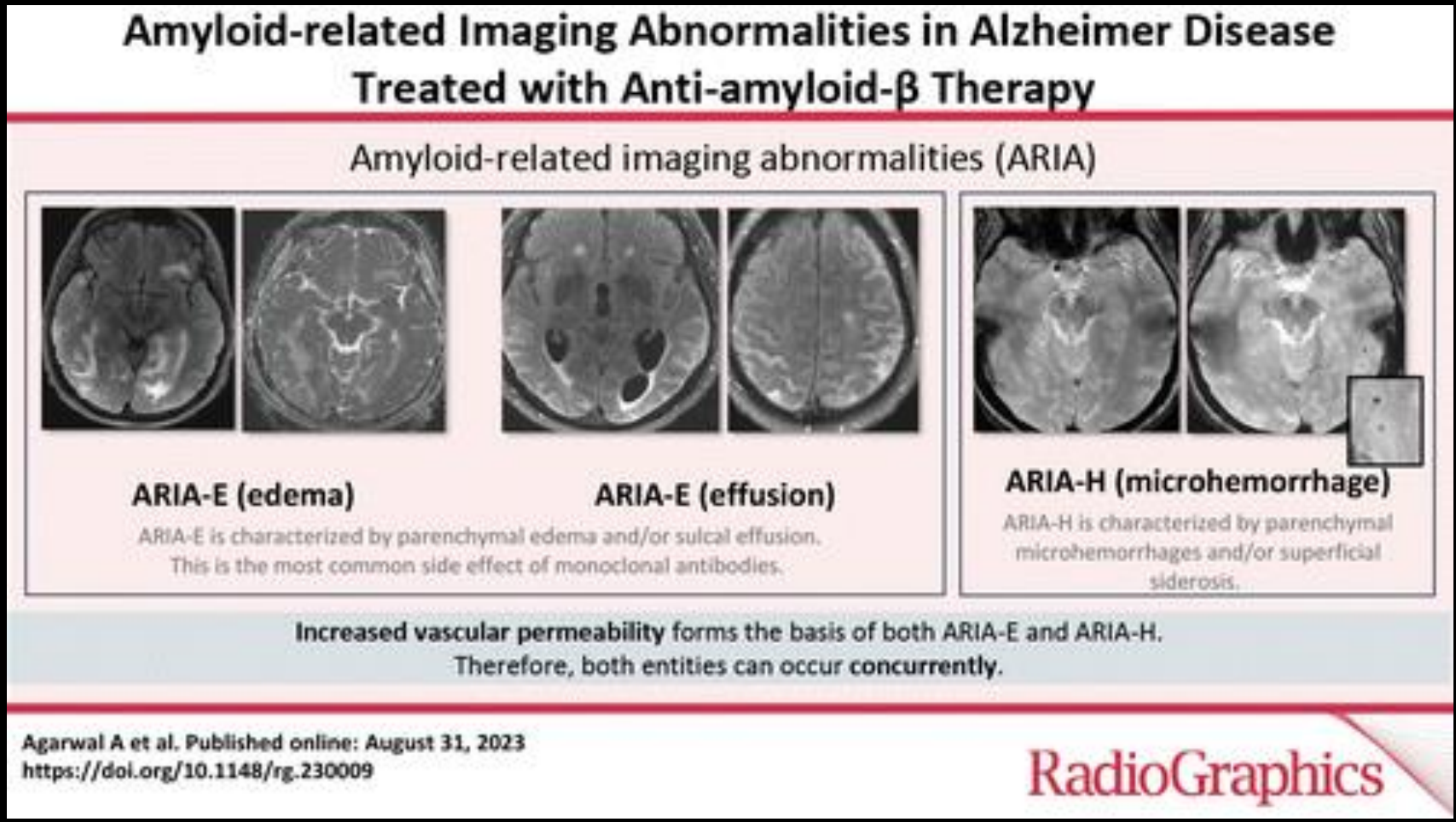
ARIA-H

- H for hemorrhage) is usually seen in combination with ARIA-E and is characterized by the presence of 1:
  - parenchymal microhemorrhages (most common)
  - sulcal/leptomeningeal hemosiderin deposits

Treatment and prognosis

- No treatment is usually required, other than withholding further treatment with the amyloid-lowering agent.
- In occasional cases, steroids have been given to reduce cerebral edema.
- Both parenchymal edema and sulcal effusions forms of ARIA-E are usually transient resolving over a number of months
- Blood products, in contrast, usually do not.

ARIA


Amyloid-related Imaging Abnormalities in Alzheimer Disease Treated with Anti-amyloid-β Therapy
Amyloid-related imaging abnormalities (ARIA)
ARIA-E (edema)
ARIA-E (effusion)
ARIA-E is characterized by parenchymal edema and/or sulcal effusion. This is the most common side effect of monoclonal antibodies.
ARIA-H (microhemorrhage)
ARIA-H is characterized by parenchymal microhemorrhages and/or superficial siderosis.
Increased vascular permeability forms the basis of both ARIA-E and ARIA-H. Therefore, both entities can occur concurrently.
Agarwal A et al. Published online: August 31, 2023
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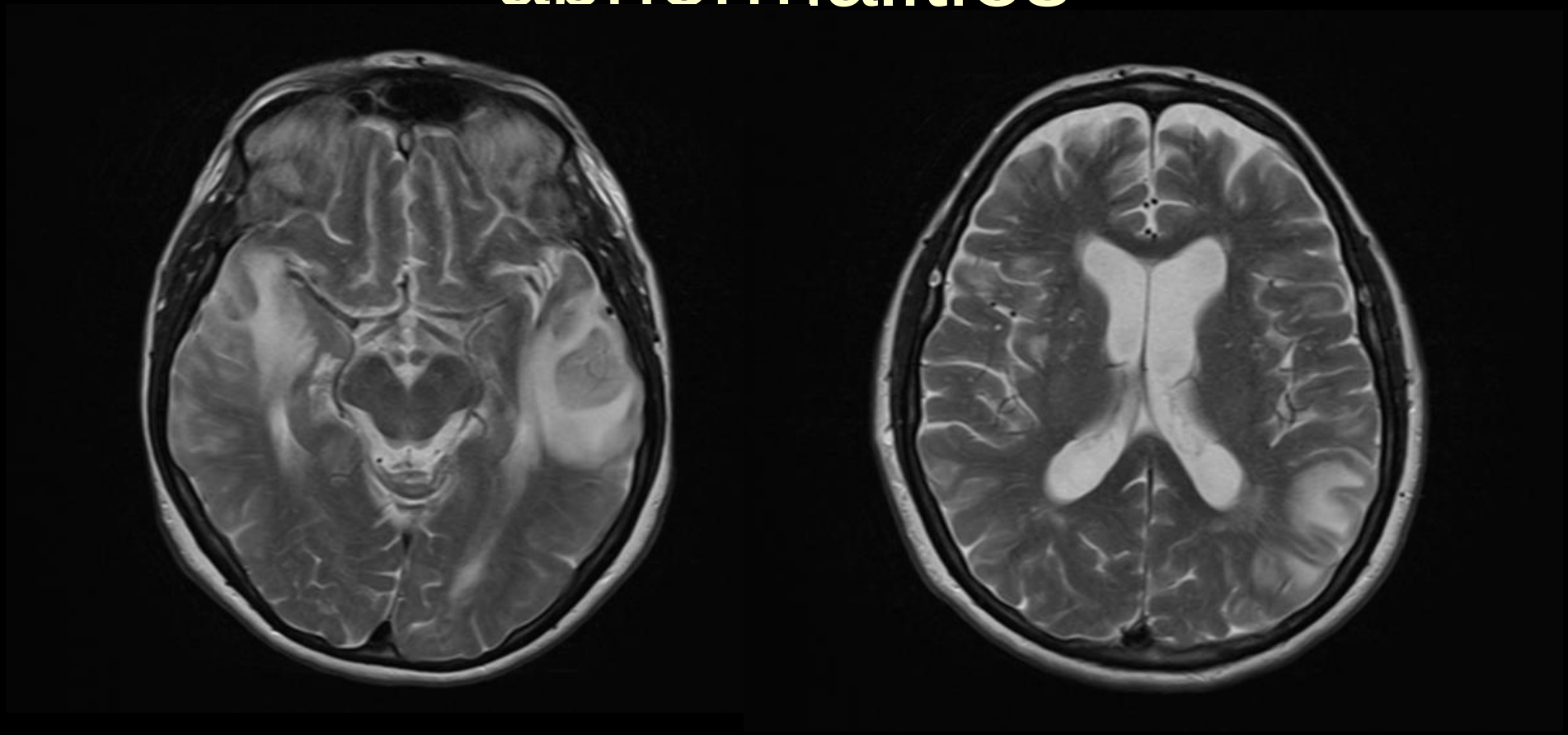
RadioGraphics

Amyloid related imaging abnormalities



ARIA