What is ADEM?

2020 Virtual RNDS
29-August-2020

ADEM: definition

- A
- D
- E
- M

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- Acute
  - worsening over hours to days
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  - involves the brain
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ADEM: definition

- Acute
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- Disseminated
  - many part of the central nervous system
- Encephalo-
  - involves the brain
- Myelitis
  - involves the spinal cord

ADEM: epidemiology

- Rare
  - 0.2 to 0.4 per 100,000 children each year
  - average age 3 to 7 years old
  - very rare in adults
- Postinfectious
  - most often preceded by febrile or viral illness
    - ~75% of children with ADEM
    - 50-75% of adults with ADEM

ADEM: symptoms

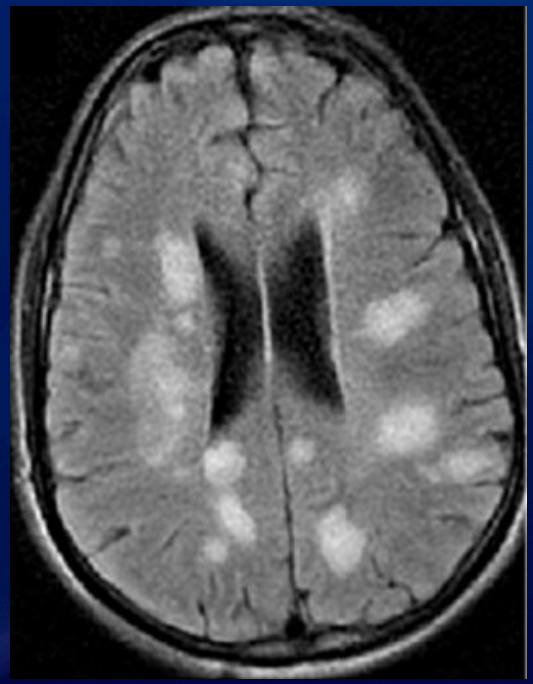
- Encephalopathy
  - required for diagnosis (not explained by fever)
- Multifocal
  - many symptoms referable to CNS

ADEM: clinical course

- Monophasic
  - maximum deficits usually occur over 4 to 7 days
  - severe phase typically lasts from 2 to 4 weeks
  - patients usually recover completely (some do not)
- Multiphasic
  - few may have second attack
  - at least 3 months after first attack
  - in children, usually within the first 2 to 8 years
- More than 2 attacks = not ADEM
  - could be MS, NMO, MOGAD, etc.

ADEM: diagnosis

- MRI
  - multiple brain lesions
    - white matter = diffuse, large, poorly demarcated
    - can also involve deep gray matter
  - optic neuritis
  - transverse myelitis



ADEM: diagnosis

- MRI
  - multiple brain lesions
    - white matter = diffuse, large, poorly demarcated
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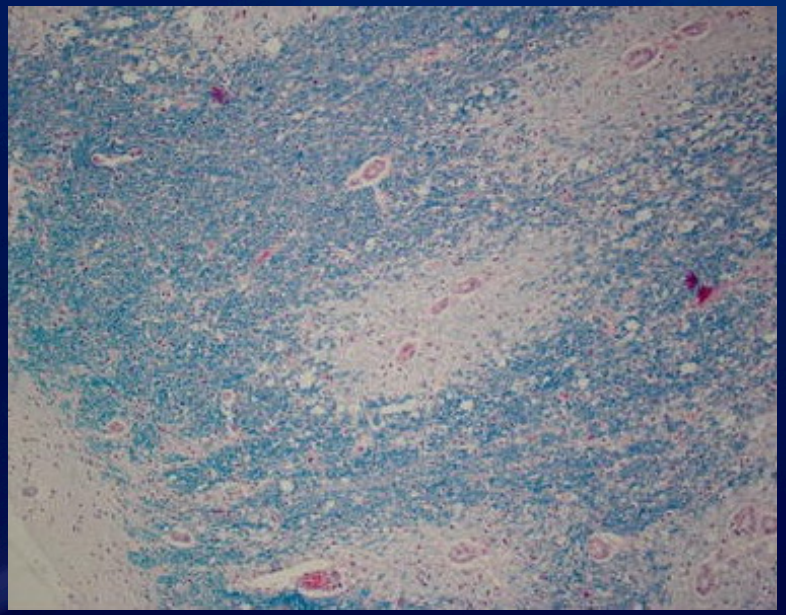
  - optic neuritis
  - transverse myelitis
- CSF
  - primarily important to rule out infection
  - can be normal, evidence of inflammation common
- Serum
  - neurologic antibodies (e.g. MOG, aquaporin-4)

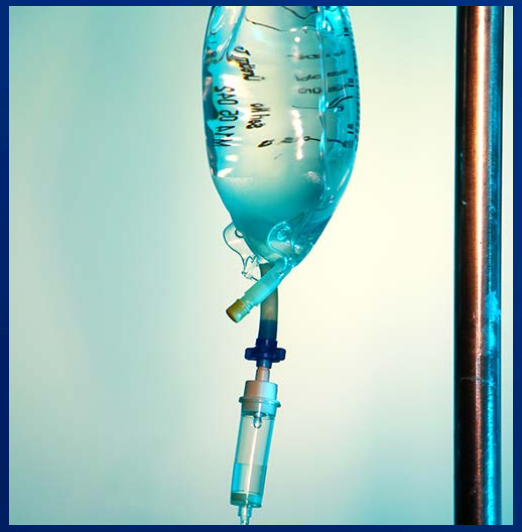
ADEM: pathology

- Edema
  - often swelling in brain lesions
- Immune infiltration
  - several types of white blood cells
  - perivenous
- Demyelination
  - patchy in perivenous pattern
  - can become more confluent



ADEM: treatment

- Steroids
  - IV methylpednisolone
    - usually 5 days
    - if not improving, then second therapy
  - usually oral steroid taper after (4 to 6 weeks)
- IVIg
  - pooled immunoglobulins from donors
    - if not improving, use third therapy
- Plasma Exchange
  - replace with artificial plasma
    - if not improving, use third therapy



2020 RNDS

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What is Transverse Myelitis (TM)?

SRNA
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