

Acute Influenza Encephalitis/Encephalopathy Associated With Influenza A In An Incompetent Adult

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Psalm 32:8



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On Presentation

- 32 year old male with PMH DM II, Developmental Delay presents to the Emergency Department (ED) with symptoms of chills, coughing, nausea/vomiting for a period of four to five days
- Confusion was also noted by family and friends for approximately 2 to 3 days prior to presentation at the ED

Review of Systems

- Generalized Weakness
- Chills
- Nausea/Vomiting
- Productive Cough x4-5 days
- Confusion x2-3 days

Physical Examination

- Fast Heart Rate

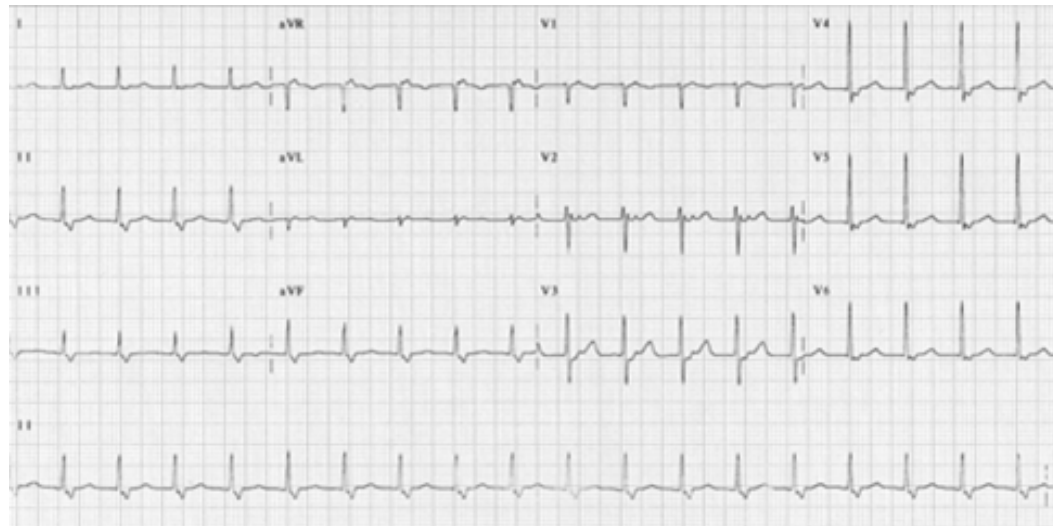
Workup

- WBC 17.3 CBC
- RBC 4.15
- Hb 11.9
- HCT 36.2
- ABS Neut 14.1
- Lactic acid 3.1

- Na 129
- Anion Gap 19
- Glucose 111
- BUN 63
- Cr 4.30
- eGFR 16
- AST 65
- HbA1C 13.9

CMP

Influenza A, PCR Positive
Influenza B, PCR Negative

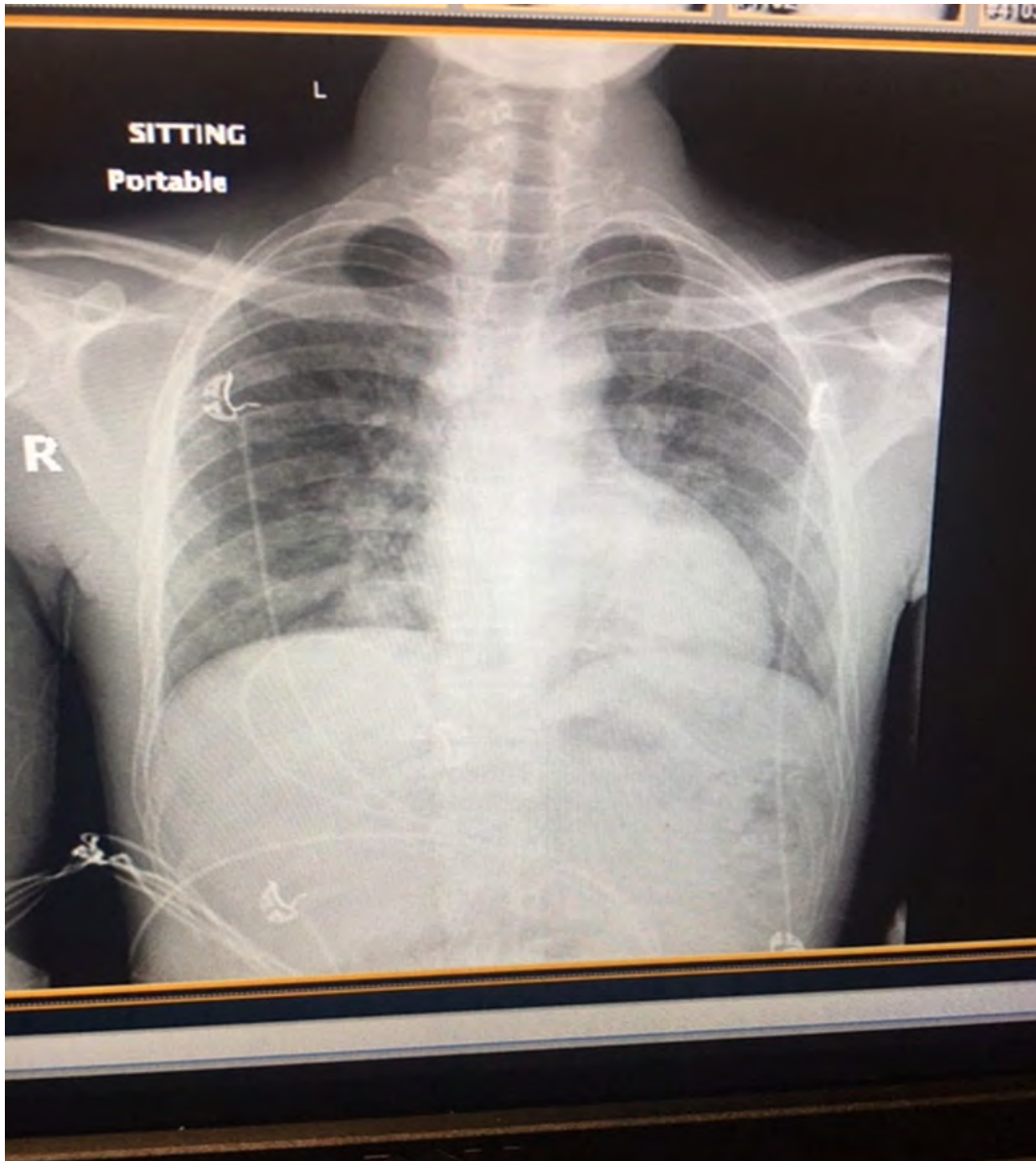


EKG sinus tachycardia,
rate of 126, normal axis,
normal intervals

Initial Treatment

- Bolus of Normal Saline 0.9% 2L
- Ceftriaxone 1000 mg IV x1
- Azithromycin 500 mg IV x1
- Oseltamivir 75 mg PO once
- Ketorolac 15 mg IV x1
- Acetaminophen (10 mg/ml IV solution) 1000 mg

DAY 1



CXR

CXR

CXR showed no pleural effusions or pneumothorax
Diffuse interstitial markings may resemble pneumonia

DAY 2

C
X
R



Dense R lower lobe pneumonia

LP

Opening Pressure 13

CSF Glucose 52

CSF Protein 44

CSF Volume 5.0

CSF Color Colorless

CSF Clarity Clear

CSF RBC 16

CSF WBC 9 (Normal High <5)

CSF Segs 29

CSF Lymph 68

CSF IgG 3.7 (Normal High <3.4)

Mild Lymphocytic Pleocytosis

CSF

CSF

- Gram Stain
- Cryptococcus Antigen
- Fungal Culture
- Acid Fast Bacillus (AFB) Culture
- West Nile (IgM, IgG)

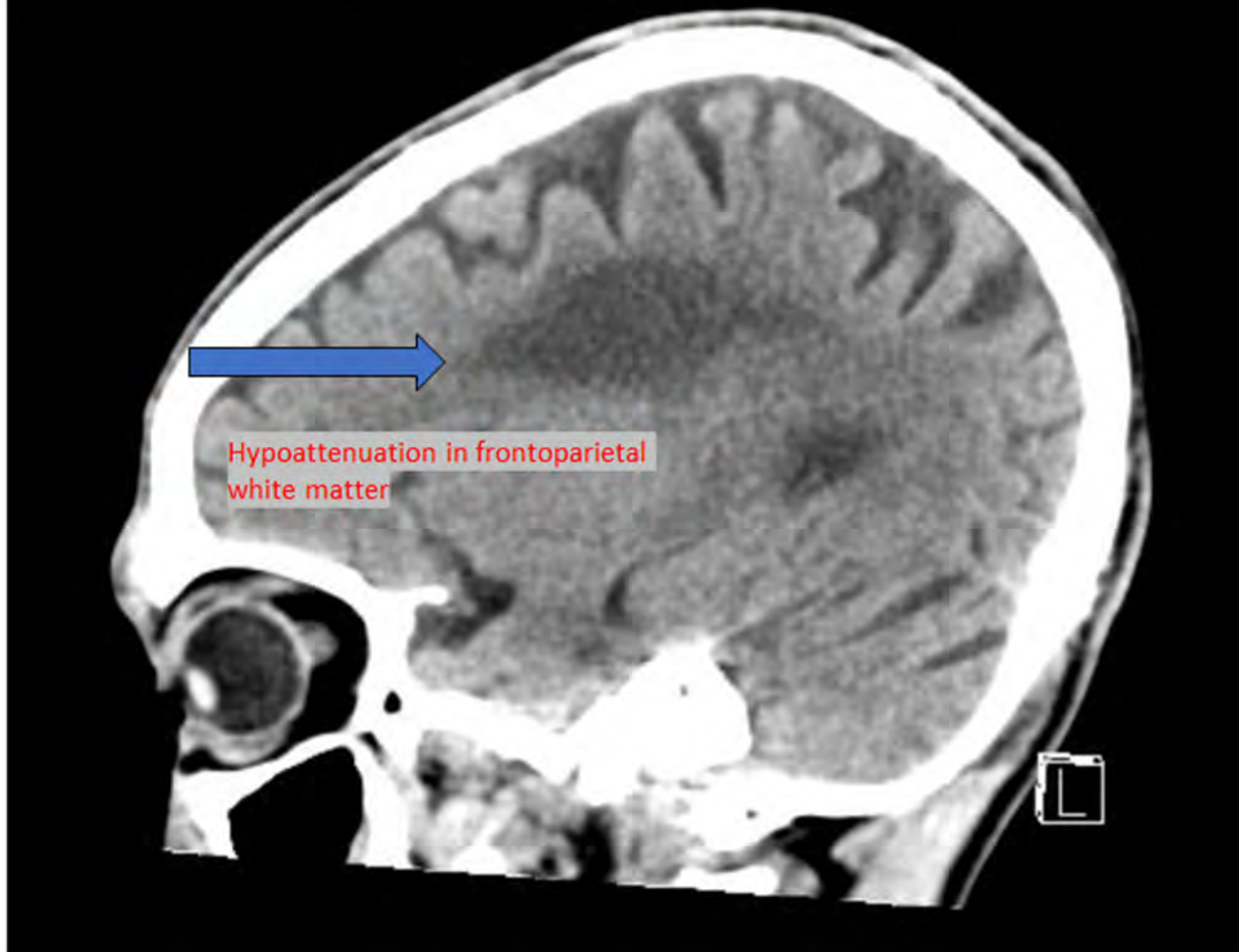
Serology

- HSV I, DNA
- HSV II, DNA
- Coccidioides Ab to TP ag (IgM)
- Coccidioides Ab to F ag (IgG)

- Blood Cultures

The Negatives

CT Head wo Contrast

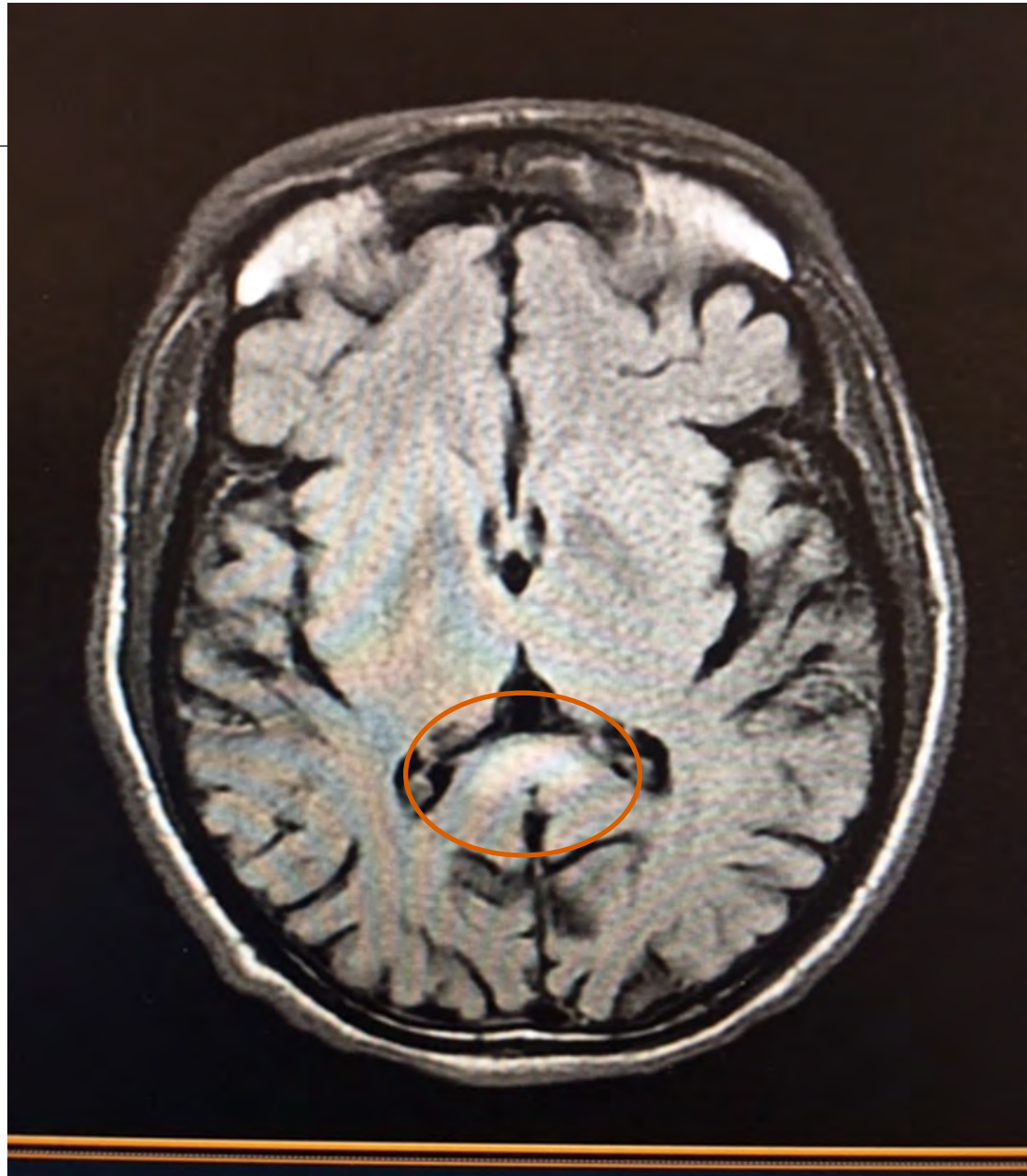


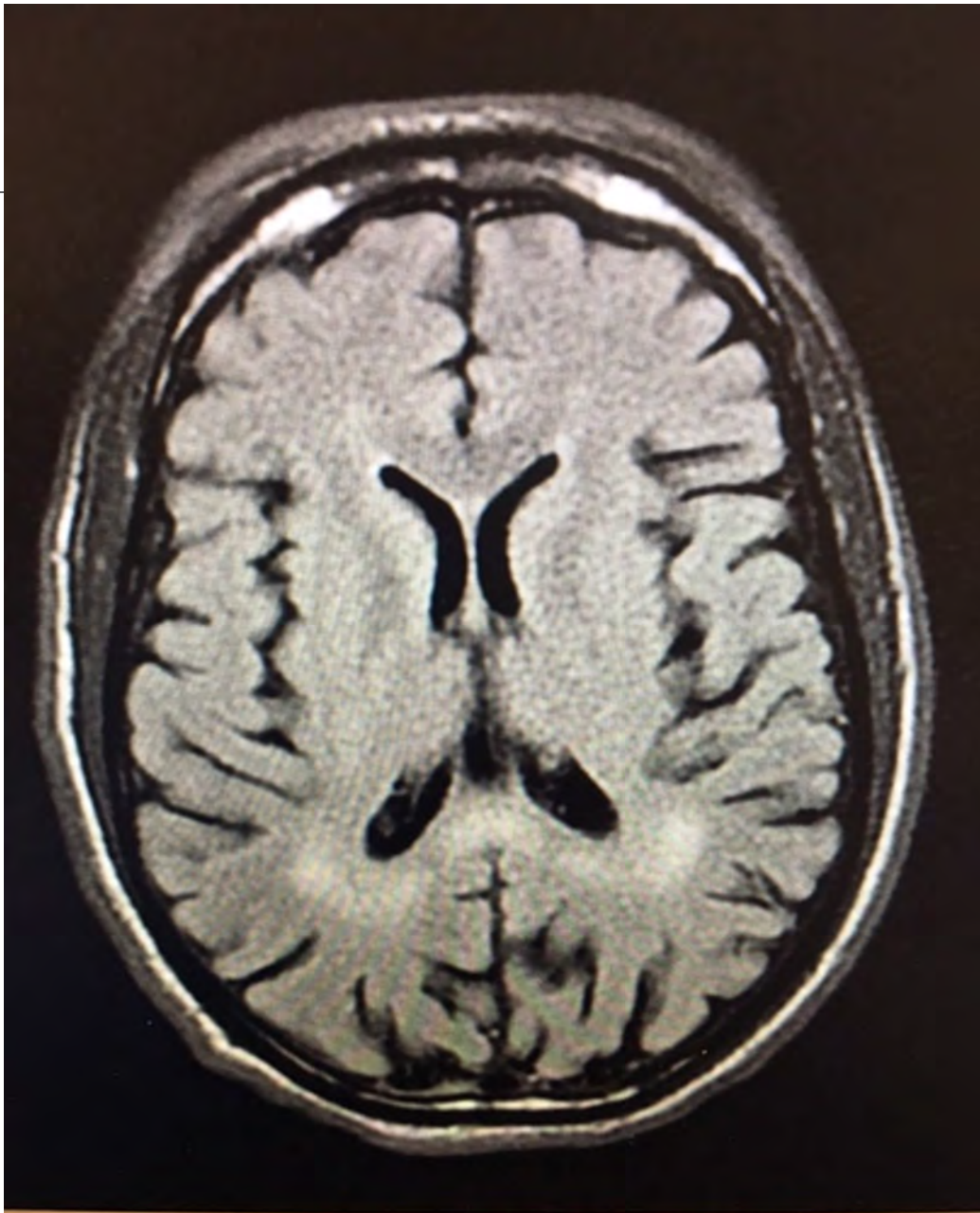
MRI brain without contrast

Day 5

MR Brain wo Con









Moderately abnormal and demonstrates a diffuse pattern

E

E

Rhythmicity of the delta activity may suggest disturbance of deep midline structures

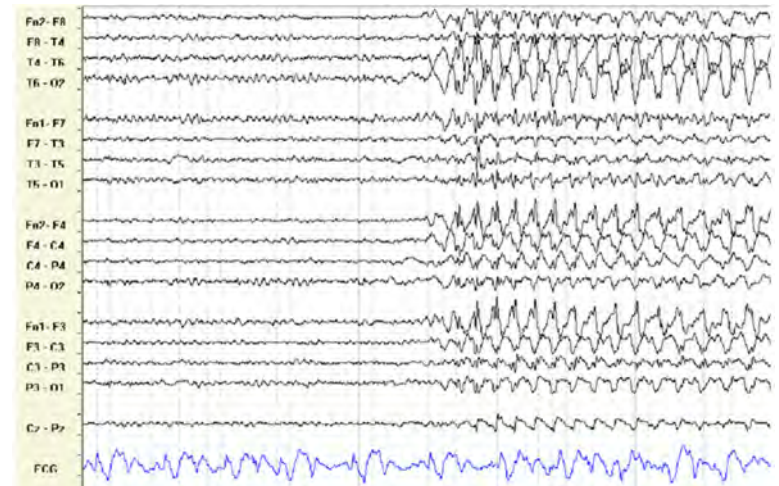
G

+/- irregularity of cerebral function
In the frontotemporal head regions

E

E

E



Influenza-Associated Encephalitis or Encephalopathy (IAE)

- Rapidly progressively encephalopathy primarily characterized by an impaired level of consciousness developing within a few days on influenza infection
- Incidence in adults has been reported up to 4% in the hospitalized

Less Common Symptoms

Urinary Retention

Vision loss

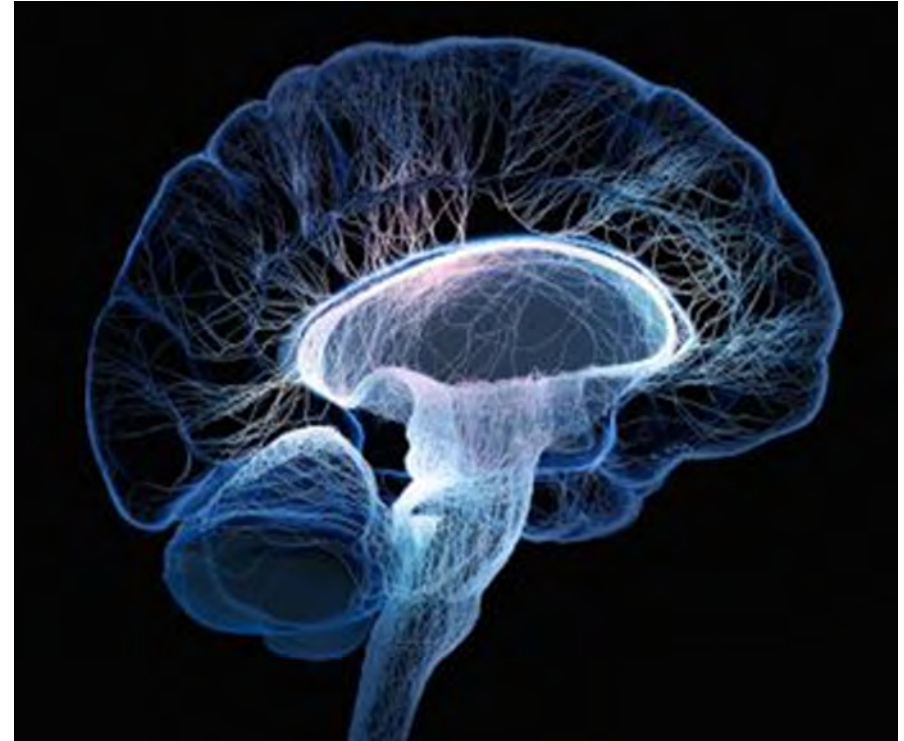
Hemiplegia

Cerebellar Signs

Opisthotonus

IAE

- Pediatrics > Adults
- Influenza-associated neurologic complications in US
 - Asians > Caucasian (Non-Hispanic)
 - Possible underlying genetic predisposition
- Rapidly progressive



IAE Clinical Syndromes

- Acute Necrotizing Encephalopathy (ANE)
- Acute Encephalopathy With Biphasic Seizures and Late Reduced Diffusion (AESD)
- Mild Encephalitis/Encephalopathy With Reversible Splenial Lesion (MERS)



Post-Influenza Encephalopathy

- Separate entity
- Neurological Symptoms occurs **After** the resolution of Respiratory Symptoms but within 3 weeks of the diagnosis of influenza
- Case Report: AMS, seizures, involuntary movements, cortical blindness developed 3 to 4 weeks after severe respiratory disease with influenza A H1N1 viral infection

What Happened...

Thank You For Your Kind Attention

Jeremiah 29:11