

# ALTERED MENTAL STATUS

FLAME LECTURE: 2

COLLINS 12/28/20

# LEARNING OBJECTIVES

By the end of this talk learners will be able to:

- ▶ Understand differential diagnosis for altered mental status
- ▶ List stabilizing actions for patients with altered mental status
- ▶ Describe the workup for altered mental status
- ▶ See also – for closely related topics
  - ▶ Agitation

# AEIOU TIPS

**A**lcohol

**E**pilepsy/**E**ndocrine/**E**lectrolytes

**I**nsulin (hypoglycemia)

**O**xygen/**O**piates

**U**remia

**T**rauma/**T**emperature

**I**nfection

**P**oisoning/**P**sychosis

**S**hock/**S**troke/**S**ubarachnoid  
Hemorrhage

# THE "CAN'T MISS" DIAGNOSES

## ▶ Hypoglycemia

- ▶ Consider point of care glucose as another vital sign in altered patients
- ▶ Immediate actions:
  - ▶ POC Glucose check
  - ▶ 1 amp D50 IV
  - ▶ If no IV access 1 mg Glucagon IM/SC



# THE "CAN'T MISS" DIAGNOSES

## ▶ Hypoxia

- ▶ Assess airway
  - ▶ Open? Protected?
- ▶ Immediate actions:
  - ▶ Check pulse-ox
  - ▶ Prepare airway equipment
    - ▶ Suction
    - ▶ Supplemental oxygen
    - ▶ Intubation supplies

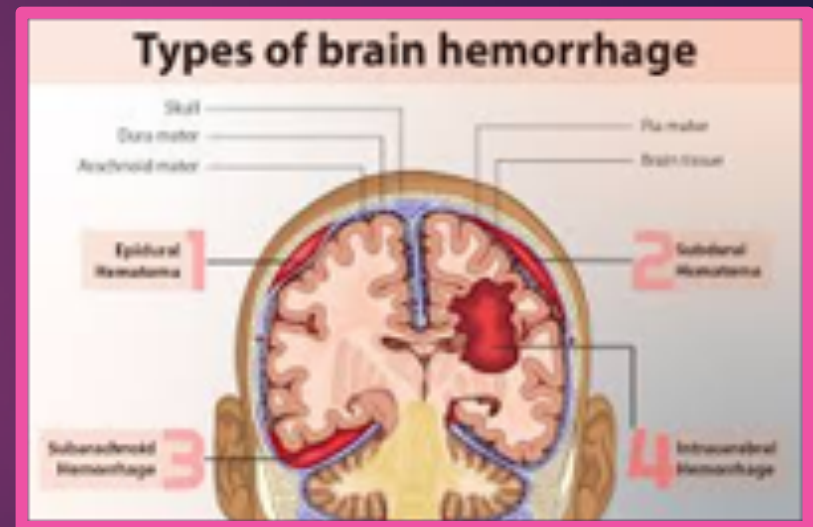


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1. Rosen's 2014  
2. Adams 2013

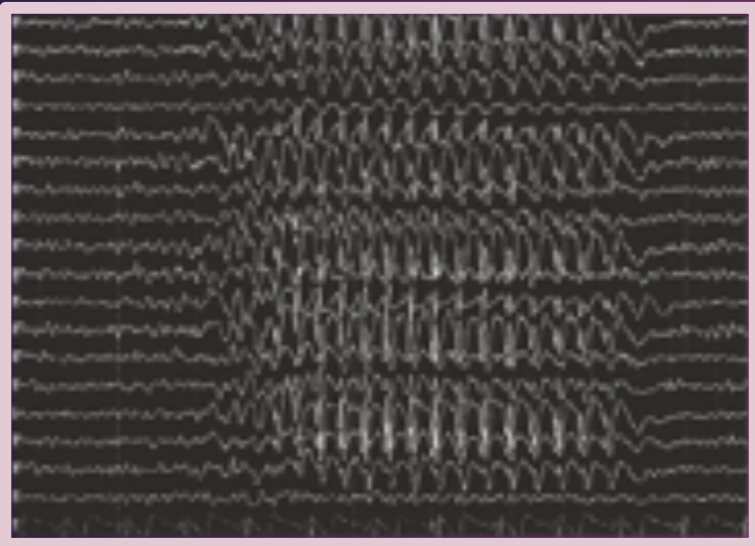
# THE "CAN'T MISS" DIAGNOSES

- ▶ **Intracranial Processes**  
(Stroke, Subarachnoid Hemorrhage, Brain Mass)
  - ▶ Suspect with any focal neurologic deficits
  - ▶ Immediate actions:
    - ▶ Assess need for airway protection
    - ▶ Full neuro exam
    - ▶ Consider CT Head



<https://www.myupchar.com/en/disease/brain-hemorrhage>

# THE MOST COMMON CAUSES



<https://www.ncbi.nlm.nih.gov/books/NBK2511/figure/A157/?report=objectonly> An Introduction to Epilepsy [Internet]. American Epilepsy Society; 2006.

## ▶ Seizure

- ▶ Postictal states can last over an hour
- ▶ Get history and consider the potential causes of seizure if no personal history of epilepsy

# THE MOST COMMON CAUSES



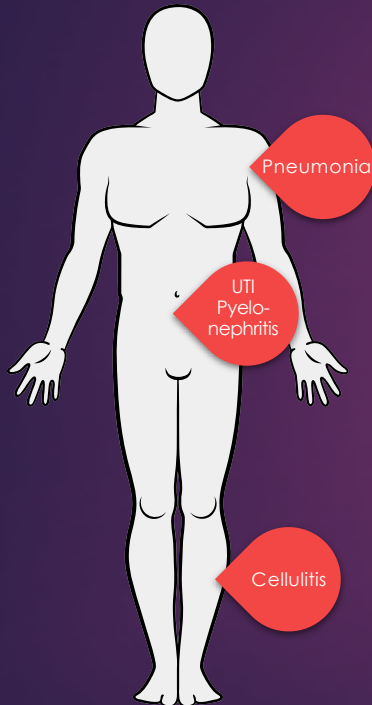
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## ▶ Intoxication

- ▶ Opiates
  - ▶ Consider Naloxone
  - ▶ Look for bradypnea and hypoxia
- ▶ Alcohol
- ▶ Benzodiazepines
- ▶ Amphetamines



# THE MOST COMMON CAUSES



## ▶ Infection

- ▶ Delirium in the elderly
- ▶ Septic Shock
- ▶ Encephalitis
- ▶ Treat with antibiotics once source is found/suspected

# OTHER POSSIBLE CAUSES



MI  
Arrhythmias  
CHF  
Hypertensive Encephalopathy



Hypoxia



Toxic Ingestion  
Overdose



Electrolyte Disturbance  
Uremia



Brain Mass  
Increased ICP  
Encephalopathy  
Psychosis



Acidosis/Alkalosis  
Hypovolemic Shock



Eclampsia



NMDA Encephalitis



Sepsis  
Viral Encephalitis



Myxedema coma  
Thyrotoxicosis  
Hyperglycemia  
Hyperthermia



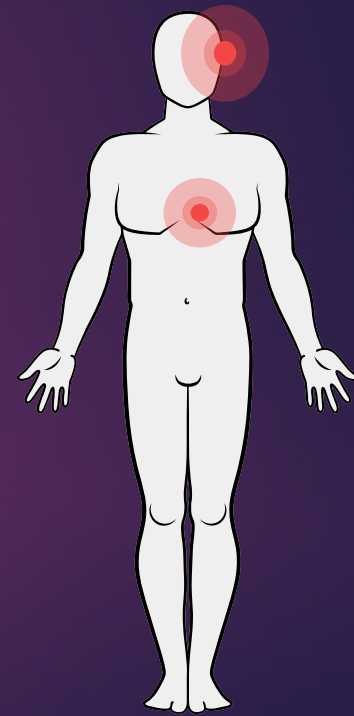
Subarachnoid Hemorrhage  
Epidural Hemorrhage  
Diffuse Axonal Injury

# RELEVANT HISTORY

- ▶ PMH - DM, Thyroid problems/medications, epilepsy, CHF, COPD
- ▶ Recent illnesses
- ▶ Recent trauma/falls
- ▶ Substance Use
- ▶ Psych history - ask about suicidal ideation, past attempts

# RELEVANT PHYSICAL EXAM

- ▶ Airway Assessment (ABCs!)
- ▶ Glucose finger stick
- ▶ Neuro Exam including orientation
- ▶ Full body check for signs of trauma or infection source
- ▶ Cardiac and Pulmonary exams



# INITIAL WORK UP



- ▶ POC Glucose
- ▶ CMP
- ▶ Urinalysis/Urine Tox
- ▶ CBC
- ▶ Consider lumbar puncture



- ▶ CT Head w/o contrast
- ▶ Consider MRI
- ▶ ECG
- ▶ CXR

# SUMMARY

CHIEF COMPLAINT	CAN'T MISS	MOST COMMON	OTHER DX	WORK UP
<b>Altered Mental Status</b>	<ul style="list-style-type: none"><li>-Hypoglycemia</li><li>-Intracranial bleed</li><li>-Hyperthermia</li><li>-Hypoxia</li><li>-Myxedema Coma</li></ul>	<ul style="list-style-type: none"><li>-Seizure</li><li>-Opiate Use</li><li>-Alcohol Use</li><li>-Infection</li></ul>	<ul style="list-style-type: none"><li>-Acidosis/Alkalosis</li><li>-Hyperglycemia</li><li>-Electrolyte Disturbance</li><li>-ICP increase</li><li>-Overdose</li><li>-Uremia</li></ul>	<ul style="list-style-type: none"><li>-ABC</li><li>-POC Glucose</li><li>-Full Vitals including temp</li><li>-CBC, CMP</li><li>-UA, UTox</li><li>-ECG</li><li>-CT Head</li></ul>

# IMPORTANT LINKS / REFERENCES

1. Adams JG. Emergency Medicine: Clinical Essentials 2013
2. Cetin, M., Oktem, B., & Emin Canakci, M. (2018, June 28). Altered Mental Status. Retrieved December 07, 2020, from <https://iem-student.org/altered-mental-status/>
3. Welsh L. EMRA EM Fundamentals 2016
4. Marx, JA. Rosen's Emergency Medicine: Concepts and Clinical Practice 8th Edition 2014
5. Sanello A, Gausche-Hill M, Mulkerin W, et al. Altered Mental Status: Current Evidence-based Recommendations for Prehospital Care. West J Emerg Med. 2018;19(3):527-541. doi:10.5811/westjem.2018.1.36559
6. Schofer JM. Emergency Medicine: A Focused Review of the Core Curriculum
7. Icons provided by SlidesCarnival.com