Altered Mentation

“The lights are on, but nobody’s home…”

Your Patient

- 56 y/o female, called in by her cleaning lady
- Arrived home to find her lying on the floor in the kitchen
- Patient presents semi-prone on floor

Initial Assessment

- Unresponsive to Pain
- Airway clear, vomit on floor
- Breathing rapid, non-laborated (adequate)
- Radial and Carotid pulses match, slow, strong, irregular
- Skin cool, dry, pale mucosa
- No obvious trauma

Your Patient

- Initial treatments?
- Category?
- Transport Decision?
- Possible causes?
- Next assessment step?

Causes

- Structural
  - Trauma
  - Closed Head Injuries
- Medical
  - Cerebral Vascular Accident
  - Tumor
- Metabolic
  - Poisonings
  - OverDose
  - Environment
  - Infections
  - Hypoxia
    - oxygenation/circulation
  - Liver/Kidney failure
  - Diabetes

Altered Mentation

Condition in which the patient displays a change in “normal” mental state ranging from disorientation to complete unresponsiveness
Altered Mentation S/S:
- Abnormal respiratory pattern
- Dry or moist skin
- Cool or hot skin
- Pinpoint, mid-size, dilated or unequal pupils
- Hypotension or Hypertension
- Loss of bowel or bladder control
- Polyuria, Polyphagia
- Unilateral or bilateral weakness

What assessments do we do?
- Initial
  - Maintain patent airway (adjunctions, suctioning)
  - Maintain Oxygen therapy (NRB vs. assisted ventilations)
  - Circulation – (is it adequate)
  - Disabilities/Deformities – what could we see?
  
****Medical Alert Tag?????****

Assessment cont.
- Focused: rapid or complaint specific exam?
- Complete SAMPLE
- Vital Sign
- Assess Blood Glucose Level
- Complete Neurologic Exam

Neurologic Exam
- Bilateral Blood Pressure
- Continual Pupil Assessment and Eye Tracking
- Facial Smile and Tongue extension
- Grips/Push-Pulls
- Pronator Drift

Altered Mental Status Treatments
- Oxygen
- If BGL is low? (glucose, sugar..etc.)
- If you find a neurologic deficit?
  - consider rapid transport
- Positioning
- Blanket

Diabetes Mellitus
- Insufficient level or absence of insulin
  - Insulin - produced in the pancreas (by beta cells)
  - production/release increases immediately in response to increase in blood sugar levels
- Type I – Insulin-dependent
- Type II – Non-insulin dependent
Types of Diabetes
- Insulin-dependant
- No significant insulin production
- Require doses of insulin to keep levels balanced
- Varying doses / strengths
- Non-Insulin-Dependent
- Inadequate insulin production
- May be controlled with regulated diet and/or pill supplements

Fire of Life
- Processes of Life require
  - Oxygen
  - Heat
  - Fuel (carbohydrate)
- Insulin - facilitates the transport of glucose (sugar) across the cell wall
  - sugar is the most efficient carbohydrate

Diabetes
- Without insulin, the cells can’t get the glucose (sugar) from the blood fast enough
- They resort to burning other things for food (fats, proteins) - inefficient and causes some serious chemical problems
- The brain can ONLY use glucose for food

Insulin / Blood Sugar Balance
- If insulin drops too low
  - Sugar level in the blood (Blood Sugar Level) rises
- If insulin rises too high
  - Sugar in the blood is used up quickly and Blood Sugar Level drops

Normal BSL (BGL)
- Blood Sugar Level / Blood Glucose Level
  - Norm is about 80 mg/dl to 120 mg/dl
  - (don’t disregard 100-150 range options)
- Most people are unconscious below about 40 mg/dl
- Most people are dangerously high by 250 mg/dl
- "Your mileage may vary..." J. Nile Barnes

Hyperglycemia
- Hyperglycemia = high blood sugar. Also Known As Diabetic Coma
- Can lead to a problem known as Diabetic KetoAcidosis
- without sufficient insulin, glucose builds up in the blood because it can’t enter the cells fast enough
- BGL rises to levels from 200 to above 500 mg/dl
Hyperglycemia / DKA

- The brain doesn't need insulin to get at the sugar building up in the blood, so mentation isn't effected until other chemicals build up.
- The cells need sugar faster than they can get it, so they switch to burning fats and proteins.
- This releases Ketones, which effect the blood chemistry.

Hyperglycemia / DKA

- The body tries to get rid of Ketones and extra sugar by breathing them out (Fruity or Ketone breath), and by peeing them out (Ketones in the urine).
- Sugar draws water out of the cells and into the bloodstream, which makes them dehydrate severely.
- The body then removes the excess fluid through the kidneys/bladder.

Hypoglycemia

- Low Blood Glucose Level - Insulin Shock
  - BGL decreases too far (below 50)
    - From not eating enough / after insulin shot
    - Taking too much Insulin
    - Anything that causes you to burn energy (sugar) faster than normal
      - Infection, exercise, cold

Prognosis for Diabetics

- Depends on how well they're condition is controlled.
- Over time nerves and circulation are damaged by high levels of sugar and/or digested fats floating in the bloodstream.
- Distal sores, amputations, blindness, renal failure and cardiac problems.

Special Considerations

- Never give Insulin
- When in doubt... Give sugar
- Was it sudden onset or gradual?

CerebroVascular Accidents

Strokes / Brain Attacks
Brain Attack

- Like in a Heart Attack (AMI), some part of the BRAIN isn’t getting oxygenated
- Causes:
  - Thrombus - clot forms and blocks off circulation
  - Embolism - Something floats into and clogs the cerebral circulation
  - Aneurysm - ruptured blood vessel leads to massive hemorrhage
  - Vasospastic - spasmed or kinked blood vessel
  - Compressive – from expanding tissue/tumor

Contributing Factors

- Often seen with hypertension
- Most common in the above 65 age group
- Atheriosclerosis
- Conditions that may cause blood clots to form in the circulation: ex. Atrial Fibrillation, long-bone fractures

Brain Structure / Dysfunction

- Symmetrical - has a left and right side
- Injury to one side effects functions on the other side of the body

Transient Ischemic Attack

- TIA s often occur days to weeks before an actual CVA or Brain Attack
- Same symptoms as a CVA but Pt has complete recovery within 24 hours
- Blockage doesn’t result in permanent injury so symptoms go away
- Often indicates a CVA is imminent
Most important 2 questions

- If you think it might be a brain attack:
  1) What is missing?
     - What ability is missing? / what is different than normal?
  2) How long has it been gone?
     - When is the last time we know for sure that the patient had this ability?

Seizures

The Flounder-Pounder
Confounders

What causes a Seizure?

- No one knows for sure...
- Characterized by an abnormal electrical firing across the brain
- The effects seen depend on what part of the brain is effected
- hint: convulsions =/= seizure =/= epileptic

Sz Types

- Grand Mal (Not ‘grandma’) - convulsions across the entire body
- Focal - convulsions / spasms in isolated area
- Petite Mal (absence Sz) - loss of awareness / mental function - usually in children - lasts very briefly
- Febrile - due to rapid temp. increase - usually in children

Parts of a Sz

- Aura - unusual sensations often felt prior to a Sz - not everyone has these
- Tonic phase - very short - contraction of muscles
- Clonic phase - alternating contraction and relaxation - Pt may become incontinent
- Postictal phase - long period of confusion and lethargy following a Sz

Status Seizure or “Status Epilepticus”

- Prolonged Seizure lasting > 10 minutes
- 2 or more Seizures in a row without a return of consciousness
- The danger is that when people Sz, they very often aren’t breathing much, so hypoxia becomes a problem the longer they seize.
- Status Seizure is LIFE-THREATENING
- There is no way to know when any Sz will stop
Seizure Clues

- inspect the tongue - cuts on the tongue or oral mucosa are good indicators of a seizure
- If there was no postictal period consider toxic/traumatic causes
- Any change in seizure history needs to be evaluated by a physician.

Overall Assessments for altered patients

- Blood glucose assessment
- Thorough history of this event from witnesses / family
- Thorough neurologic assessment
- Vitals
  - including bilateral BPs
  - Attention to resp. rhythm and odor
  - Body temperature
- Serial Pupil assessment

General Treatments

- Oxygen – right away for altered levels of consciousness
- Protect and monitor airway
  - Treat for shock if signs present
  - Treat for blood sugar accordingly
  - Assess for need for stroke/brain attack protocols

Always Remember Oxygen!

- Many problems that cause altered mentation effect the brain’s oxygenation
- Can’t Hurt, Might Help, Heck of a Crowd Pleaser!