Diabetic Emergencies/AMS

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Diabetes -- basics

- **Glucose** – “simple” form of sugar
- **Glucose** – the body’s basic energy source
- Glucose must be absorbed into body cells to produce energy
- Glucose cannot be absorbed into body cells without **insulin**
- Insulin – hormone produced and secreted by the pancreas
- **Glucose/insulin**
  - Lock & key analogy
  - Balance scale
Hyperglycemia

- Insufficient insulin?
- A dangerous chain reaction:
  - Decreased absorption of glucose
  - Excess sugar in bloodstream
  - Spills over into the urine
  - Patient urinates excessively ("polyuria")
  - Patient becomes excessively thirsty ("polydypsia")
  - Patient becomes dehydrated
- → BUT THE BODY REQUIRES ENERGY, so...

Hyperglycemia – cont’d

- Body converts fat to energy
- Inefficient creation of energy
  - Less energy produced per gram
- Produces dangerous wastes
  - Ketones
  - Diabetic Ketoacidosis ("DKA")
- Very often, pt is found in DKA is not aware that they are diabetic
Diabetes

- Diabetes Mellitus ("DM")
- Sweet Urine

Diabetes -- causes

- Minimal/No insulin production
  - IDDM
  - Insulin dependent
  - Juvenile onset
  - Requires insulin

- Decreased insulin production or inability of body cells to use insulin properly
  - NIDDM
  - Adult onset
  - Often associated with obesity
  - Controlled by some combination of diet and/or oral hyperglycemic medications
**Hypoglycemia**

- Most common and dangerous diabetic emergency
- Causes include:
  - Too much insulin/oral medications
  - Reduced food/sugar intake
  - Excessive exercise
  - Vomits a meal
    - Takes insulin anyway

**Effects of hypoglycemia**

- Altered mental status!
- Unconsciousness
- Seizures
- Brain damage
- Death
  - Remember: 20-25 minutes of no glucose in the brain is the equivalent of 4-6 minutes with no oxygen!
Patient assessment

- Perform initial assessment
  - Identify AMS, diabetes history
- Get SAMPLE history
- Determine LOC
  - Can the patient maintain their airway?
  - Can the patient swallow a source of glucose?
  - Monitor vital signs

Get SAMPLE history

- History of present episode
- Does patient have diabetes?
- Gather evidence
  - Medical bracelet
  - Medications such as diabinase, glucophage
  - Insulin in the fridge?
  - Speak with family, bystanders
Hypoglycemia – S/S

- AMS
  - Intoxicated appearance, staggering, slurred speech, unconsciousness
- Tachycardia
- Cool diaphoretic skin
- Extreme hunger ("polyphagia")
- Seizures
- Strange behavior
- Anxiety
- Combativeness

Diabetic/AMS -- Treatment

- Request ALS
- ABCs
  - O$_2$
- If patient sustained head trauma – transport immediately!
- Determine V/S & LOC
Diabetic/AMS – Treatment (cont’d)

- If patient is conscious; has a known history of diabetes and is able to drink without assistance
  - Provide an oral glucose solution
- Transport immediately
- Ongoing assessment
  - Be alert for changes in LOC

Oral glucose forms

- **Sugared** drink
- Concentrated glucose
  - Tablets
  - Gel
    - Insta-glucose
    - Glutose
Children – add’l issues

- More at risk for hypoglycemia
- Exercise more aggressively
- Use up glucose quickly
- Less disciplined about eating correctly
- **Need to be diligent about modifying insulin doses with changing weight**

Hyperglycemic emergencies

- Not enough insulin for glucose ingested
- Forgets to take insulin
- Overeats
- **Has infection – upsetting insulin glucose balance**
Hypoglycemia vs. hyperglycemia

- **Very similar** signs and symptoms
- **NOT IMPORTANT TO DISTINGUISH**
- **Rule of thumb: “Sugar for all”**

Distinguishing factors?

<table>
<thead>
<tr>
<th></th>
<th>Hyperglycemia</th>
<th>Hypoglycemia</th>
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<tbody>
<tr>
<td><strong>Onset</strong></td>
<td>Slow</td>
<td>Rapid</td>
</tr>
<tr>
<td><strong>Skin</strong></td>
<td>Warm, dry, red</td>
<td>Cool, pale, moist</td>
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<tr>
<td><strong>Respirations</strong></td>
<td>“Kussmaul’s”</td>
<td>Rapid, shallow</td>
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Diabetes

- A tragic disease
- Often the root cause of many other serious illnesses