Diabetic Emergencies/AMS

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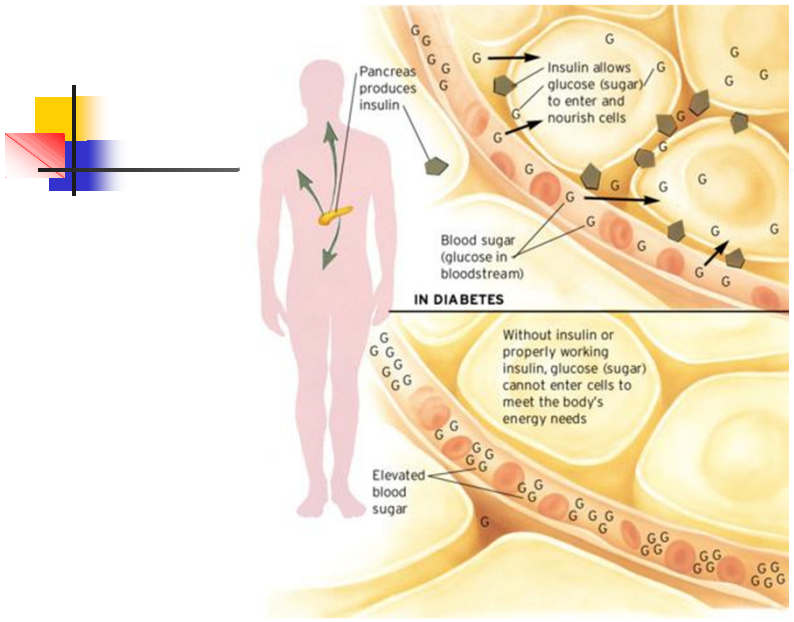
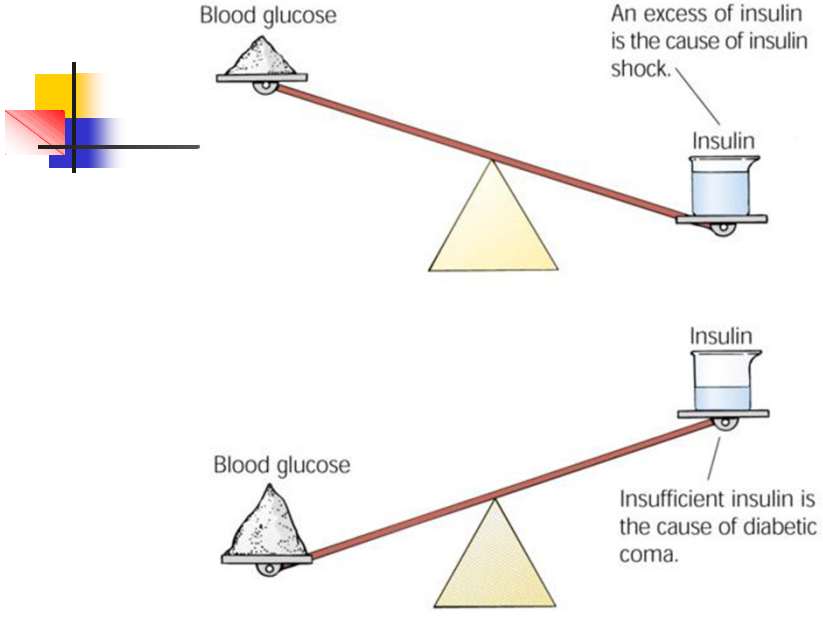
Diabetes -- basics

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


Pancreas produces insulin
Insulin allows glucose (sugar) to enter and nourish cells
Blood sugar (glucose in bloodstream)
IN DIABETES
Without insulin or properly working insulin, glucose (sugar) cannot enter cells to meet the body's energy needs
Elevated blood sugar


Blood glucose
An excess of insulin is the cause of insulin shock.
Insulin
Insulin
Blood glucose
Insufficient insulin is the cause of diabetic coma.

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
  - The 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

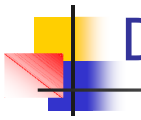
- Not enough insulin for glucose ingested
- Forgets to take insulin
- Overeats
- **Has infection – upsetting insulin glucose balance**

Hypoglycemia vs. hyperglycemia

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

Distinguishing factors?

	Hyperglycemia	**hypoglycemia**
Onset	Slow	Rapid
Skin	Warm, dry, red	Cool, pale, moist
Respirations	"Kussmaul's"	Rapid, shallow



Diabetes

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