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Health Professional Education

Highs and Lows of Diabetes and The Case of the Dodgy Chicken


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The Dodgy Chicken


- Sunday morning at triage
- 6 yr old boy presents with Mum
- Up all night vomiting
- Dad also unwell this morning with vomiting
- Both Dad and Son had 'dodgy takeaway chicken' yesterday for lunch
- Mum did not eat the chicken



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The Dodgy Chicken

- Good story, doesn't look too unwell
- Mild dehydration
- Rehydrate with oral fluids
- Sit in WR until review
- Finally gets picked up
- Someone does a BSL
- It reads HI HI HI



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Another case

- 13 year old boy
- Presents with Mum from GP
- Has AXR shows constipation
- Poor diet, little fruit, eats lots of bread
- Given Movicol with effect
- Observed for 6 hours in department
- D/c Home
- Represents 12 hours later shocked flat and in extremis
- BSL and ABG show DKA



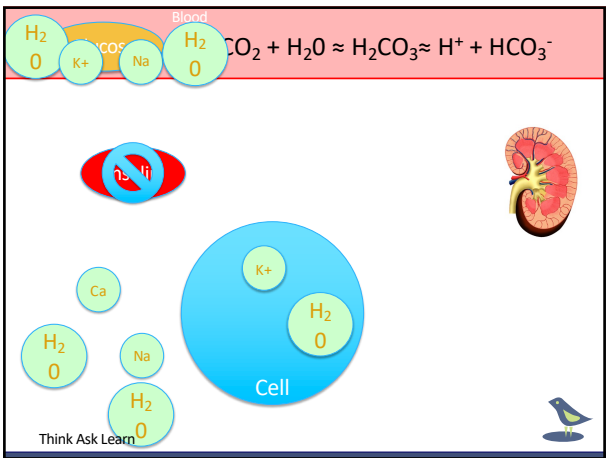
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Diabetic KetoAcidosis DKA

- Insulin deficiency
- Glucose rises
- Renal System attempts to compensate
- Fails
- Acidosis ensues
 - Oxygen transport and capacity – Hypoxia



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Signs and Symptoms

- Patient is unwell
- BSL >15mmol, often 20+mmol or HiHiHi
- Polyuria
 - Large amount of urine production
- Polydipsia
 - Increased Thirst
- Kussmaul Breathing
 - Deep laboured breathing – Blowing off CO₂



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Diagnosis

- No definitive criteria for the diagnosis of DKA
- DKA is defined by the triad of:
- Hyperglycaemia (glucose > 14 mmol/L)
- Ketosis (usually determined on urinalysis)
- Acidosis (pH < 7.35; low HCO₃: high anion gap)
- (Hence the name, diabetic-keto-acidosis!)



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At Risk

- Precipitants of DKA are:
 - Infection (35%)
 - New onset DM (25%)
 - Non-compliance with therapy (20%)
 - AMI
 - CVA
 - Pregnancy
 - GI Bleed
 - Pancreatitis
 - Unknown (10%)



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Immediate Management

- Call for help – ambulance
- ABCD approach
- Undertake BSL
- Collect vital signs
- Oxygen is good for you?



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In Hospital Treatment

- Undertake Blood Gas!
- Find source
 - Infection, Non compliance, other
- Fluid replacement
- Give insulin
- Replace electrolytes
- Admit to hospital - usually ICU
- Follow Protocol ?which one



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The Opposite Way

- Hypoglycaemia
- Usually too much insulin or lack of food or misadventure with insulin!!
- Hard to die from Hypoglycaemia – Sort of....
- Common yearly in diabetics (27%)
- Defined as BSL <4mmol/l but S+S common under 2.6mmol/l



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Signs and Symptoms

- Maybe minimal to extreme
- Paleness
- Shakiness
- Headache
- Sweating
- Feeling hungry
- Dizziness
- heart pounding
- Irritability, change in mood
- Lack of concentration
- Confusion
- Vagueness
- Crying
- Weakness



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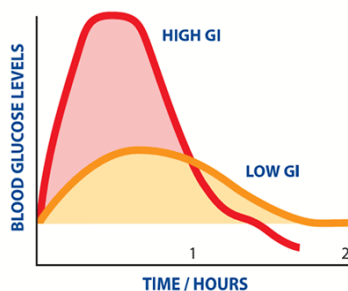
Treatment options

- ABCD approach
- Treat if BSL is less than 4mmol/l
- Give some high GI carbohydrate (sugar) to raise the blood glucose quickly
 - Jelly babies
 - Simple sugars
 - Lemonade
- Overtreatment is a problem



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What sugar to give



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Treatment options

- After allowing for sugars to be absorbed, provide further glucose
 - Banana/Apple
 - Sandwich
 - Biscuits/Crackers
 - Milk



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Unconscious Hypoglycaemia

- ABCD approach
- Call for help – trip to ED
- Airway supportive manoeuvres
- Oxygen
- Check BSL (look for other causes)
- Provide IV glucose (2ml/kg of 10%D) or IM glucagon (prehospital)



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Caution with Discharge

- Observe for 2-4 hours
- Find the cause
- Admit to hospital all unknown causes of hypoglycaemia



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Conclusion

- BSL is a simple test that should be done often
- DKA is life threatening
 - Replace Fluids
 - Give some insulin later
 - Replace potassium losses
 - Refer to ICU early
- HHNS is rare but life threatening
- Hypoglycaemia is more common than you think



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Insulin Pumps and more...



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