Question sheet:

A 12 year old girtl presents with 1 week of lethargy and urinary frequency and a day of severe vomiting.

She is drowsy and breathless. Mucosal mebranes are very dry

HR 140 BP 90/40, RR 30, SpO2 100%, Afebrile

VBG shows:

pH 7.05

PCO2 28

PO2 40

HCO3 6

BE -18

K 4.5

Na 120

Cl 90

Gluc 4.5

Lac 2.3

1. Describe the gas result
2. What is the diagnosis
3. List 5 treatment priorities
4. List 3 possible complications
5. The mother decides she is taking the daughter home without treatment. Identify 3 strategies to deal with this.

Answer sheet

1. Describe the gas result
   1. Metabolic acidosis with inadequate respiratory compensation and high anion gap. Potassium and corrected sodium are normal. Glucose is markedly elevated
2. What is the most likely diagnosis
   1. DKA
3. List 5 treatment priorities
   1. Replacement of fluid deficit (initial bolus and then rest of deficit over 24 hours)
   2. Termination of ketone production with insulin infusion (0.5-1 unit/kg/hr)
   3. Replacement of potassium at approximately 10mmol/hr while on insulin
   4. Prevention of hypoglycaemia with dextrose infusion once Gluc around 15
   5. Supportive care: monitor respiratory performance and airway maintenance, antiemetics
4. List 3 possible complications
   1. Cerebral oedema
   2. Hypokalaemia
   3. hypoglycaemia
5. The mother decides she is taking the daughter home without treatment. Identify 3 strategies to deal with this.
   1. Engage mother and reason with her
   2. Draw in another staff member or a family member to help
   3. Involve child protective services