Assessing and managing diabetic ketoacidosis (DKA) in children

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Child with any of:
- Nausea/vomiting
- Abdominal pain
- Hyperventilation
- Dehydration
- Reduced level of consciousness

No known history of diabetes

Known to have diabetes

Those taking insulin may develop DKA with normal glucose levels

Measure capillary blood glucose

Blood ketones test unavailable

Measure blood ketones

Below 0.5 mmol/L

0.5–3.0 mmol/L

Above 3.0 mmol/L

Below 11.0 mmol/L

Above 11.0 mmol/L

No DKA

Manage according to presenting symptoms

Sick day rules

Use the sick day rules of the local diabetes service

Suspect DKA

Send immediately to hospital with acute paediatric facilities

No DKA

Manage according to presenting symptoms

Fluid therapy

Fluid deficit

Blood pH

7.1 or above

Below 7.1

> 5%

> 10%

Fluid maintenance volume

Child’s weight

Under 10 kg

10–40 kg

Over 40 kg

> 2 mL/kg/h

> 1 mL/kg/h

> 40 mL/h

Fluids needed over 48 hours

50 mL/kg

100 mL/kg

96 mL/kg

48 mL/kg

1920 mL

Total fluids

Maint- enance volume

Insulin therapy

Soluble insulin

0.05–0.10 units/kg/h

Do not give bolus doses of intravenous insulin

* Rehydration should be attempted over 48 hours, as large fluid volumes carry an increased risk of cerebral oedema

Other symptoms that may suggest DKA:
- Increased thirst
- Recent weight loss
- Unexplained
- Excessive tiredness
- Polyuria

Other symptoms that may suggest DKA:
- Nausea/vomiting
- Abdominal pain
- Hyperventilation
- Dehydration
- Reduced level of consciousness

Rehydration should be attempted only by experienced paediatric teams

Read the NICE guidance summary online http://bmj.co/diach

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