

Glycaemic Emergencies (Children)

Table 3.85 – SIGN AND SYMPTOMS OF DKA

Symptoms

- Polyuria.
- Polydipsia.
- Abdominal pain.
- Vomiting.

Signs

- Weight loss.
- Lethargy, drowsiness confusion and ultimately coma and death.
- Dehydration, and occasionally circulatory failure due to hypovolaemia.
- Hyperventilation (Kussmaul breathing).
- Presence of ketones (measured) in the urine and/or blood.

- Children with DKA may present with significant dehydration – however, if IV fluid is given too fast this can lead to cerebral oedema and death. **Refer to intravascular fluid therapy guideline.** Do not give children with DKA IV fluids unless they have good evidence of hypovolaemic shock.

- True shock (circulatory failure), as opposed to dehydration, is relatively uncommon in children with DKA, but does not require IV fluid resuscitation. Volumes must not exceed 10 ml/kg.
- Do not try to give oral fluids to children with DKA – they have a very high risk of aspiration.
- Ketone measurement (blood or urine) is useful in the diagnosis of DKA.

3. Assessment and Management

If a known diabetic child is well, not vomiting, fully conscious, has a blood glucose level >16 mmol/l but a blood ketone level <3 mmol/l, the family should contact their diabetes team or GP. Do not attempt to manage the patient yourself.

Once a blood ketone level is above 3 mmol/l (or urine ketones are high) and the child is unwell with vomiting then they should be managed as having DKA.

For the assessment and management of diabetic ketoacidosis refer to Table 3.86.

Methodology

For details of the methodology used in the development of this guideline refer to the guideline webpage.

Table 3.86 – ASSESSMENT and MANAGEMENT of:

Diabetic Ketoacidosis in Children

ASSESSMENT	MANAGEMENT
<ul style="list-style-type: none"> ● Undertake ABCD assessment 	<ul style="list-style-type: none"> ● Start correcting ABC problems (refer to medical emergencies in children). ● Do not give IV fluids unless there is clear evidence of circulatory failure and no more than 10 ml/kg sodium chloride (refer to intravascular fluids/0.9% saline guideline).
<ul style="list-style-type: none"> ● If the child is TIME CRITICAL 	<ul style="list-style-type: none"> ● Correct life-threatening conditions (airway and breathing on scene). ● Then commence transfer to nearest suitable receiving hospital. <p>NB DKA is a life-threatening condition requiring urgent hospital treatment.</p>
<ul style="list-style-type: none"> ● Measure blood glucose level 	<ul style="list-style-type: none"> ● Measure and record blood glucose level.
<ul style="list-style-type: none"> ● Assess for signs of dehydration 	<ul style="list-style-type: none"> ● Do not give IV fluids to treat dehydration unless shocked (see above).
<ul style="list-style-type: none"> ● Measure oxygen saturation (SpO₂) 	<ul style="list-style-type: none"> ● Administer high-flow oxygen as part of shock management. ● Provide an alert/information call if necessary. ● If the child has records of their blood or urine glucose levels, bring them with the patient.

KEY POINTS

Glycaemic Emergencies in Children

- Hypoglycaemia is a medical emergency.
- Treat hypoglycaemia with a suitable form of glucose (this will depend on the patient's condition).
- Glucagon may be used intramuscularly to treat hypoglycaemia if treatment with glucose is not possible.
- Children, whose hypoglycaemia is not due to diabetes, may not respond well to glucagon.
- DKA usually requires no emergency prehospital treatment except rapid transport to hospital.
- IV fluids can cause cerebral oedema in children with DKA.
- Do not give IV fluids to children with DKA unless significant shock is present and then only limited amounts.