

Glycaemic Emergencies (Children)

Table 3.84 – ASSESSMENT and MANAGEMENT

Hypoglycaemia in Children

ASSESSMENT	MANAGEMENT
ASSESSMENT <ul style="list-style-type: none"> Undertake ABCD assessment. Measure blood glucose level.^b 	MANAGEMENT <ul style="list-style-type: none"> Start correcting ABC problems (refer to medical emergencies in children). Measure and record blood glucose level (pre-treatment).
SEVERE: patient unconscious (GCS ≤8), convulsing, very aggressive	<ul style="list-style-type: none"> Keep nil by mouth, increased risk of choking/aspiration. Administer IV glucose 10% by slow IV infusion (refer to glucose 10% guideline). Titrate to effect – an improvement in clinical state and glucose level should be observed rapidly. Do not exceed 2 ml/kg. If IV route not possible administer IM glucagon^a (onset of action 5–10 minutes) (refer to glucagon guideline). Re-assess blood glucose level after 10 minutes. If <5.0 mmol/l administer a further dose of IV glucose. Re-assess blood glucose level after a further 10 minutes. Transfer immediately to the nearest suitable receiving hospital. Monitor vital signs and conscious level en-route. Check glucose if deteriorates, or half hourly. Provide an alert/information call if necessary. <p>NB DO NOT administer glucose 50% as there is a risk of brain damage.</p>
MODERATE: Patient with impaired consciousness, uncooperative	<ul style="list-style-type: none"> If capable and cooperative, administer quick acting carbohydrate (sugary drink, glucose tablets (2–3), or glucose gel). Do not give chocolate as it is slower acting. If NOT capable and cooperative, but able to swallow, administer 1–2 tubes of dextrose gel 40% to the buccal mucosa, or give intra-muscular glucagon^a (refer to glucagon guideline). Re-assess blood glucose level after a further 10 minutes. Ensure blood glucose level has improved to at least 5.0 mmol/l in addition to an improvement in level of consciousness. If blood glucose not improved to 5 mmol/l, repeat treatment up to three times. If no improvement after three treatments, consider intravenous glucose 10%. Transfer to the nearest suitable receiving hospital if requiring further treatment, otherwise can usually be safely left at home if with a responsible adult. Notify GP or out-of-hours provider if left at home. <p>NB DO NOT administer glucose 50% as there is a risk of brain damage.</p>
MILD: Patient conscious, orientated, able to swallow	<ul style="list-style-type: none"> Administer quick acting carbohydrate (sugary drink, glucose tablets or glucose gel). Do not use chocolate (see above). Re-assess blood glucose level after a further 10 minutes. Ensure blood glucose level has improved to at least 5.0 mmol/l. If no improvement, repeat treatment up to three times. If no improvement after three treatments consider intravenous glucose 10% (refer to glucose 10% guideline). Transfer to the nearest suitable receiving hospital only if not responding to treatment. Notify GP or out-of-hours if left at home.

^aGlucagon may take 5–10 minutes to take effect and requires the child to have adequate glycogen stores – thus, it may be ineffective if glycogen stores have been exhausted. This is likely in any children who have any NON diabetic causes of hypoglycaemia, although it is worth trying.

^bClean fingers prior to testing blood glucose levels as the child may have been in contact with sugary substances e.g. sweets.

DIABETES MELLITUS

- Diabetes mellitus can even occur in infants. These children may have blood glucose levels that are particularly difficult to control and may be very difficult to manage.
- Known diabetic children will have protocols to follow if they become unwell – if available and appropriate, always follow them.
- Type 1 (insulin dependent) DM is nearly universal in children though occasionally Type 2 (non-insulin dependent) DM is now seen, usually in association with severe obesity.

Diabetic ketoacidosis (DKA)

For the pathophysiology of this illness refer to glycaemic emergencies in adults.

- Patients may present with one or more signs as in Table 3.85.

Diabetic ketoacidosis (DKA) may occur relatively rapidly in children, sometimes without a long history of the classical symptoms. The absolute blood glucose level is not a good indicator of the presence of DKA – some children with blood glucose levels in the >20 range may appear quite well and not have DKA.