Treatment of Hypoglycaemia in Adults with Diabetes in Hospital

Hypoglycaemia is a serious condition and should be treated as an emergency regardless of level of consciousness. Hypoglycaemia is defined as blood glucose of less than 4mmol/L (if not less than 4mmol/L but symptomatic give a small carbohydrate snack for symptom relief). For further information see the NHS GG&C Therapeutics Handbook and "The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus" www.diabetologists-abcd.org.uk/subsite/JBDS_IP_Hypo_Adults_Revised.pdf

MILD

Patient conscious, orientated and able to swallow (not fasting)

- Give 15-20 g of quick acting carbohydrate, such as:
  - 5-7 Dextrosol® tablets or
  - 4-5 Glucotabs® or
  - 60ml Glucojuice® or
  - 90-120ml original Lucozade® or
  - 150-200ml pure fruit juice**
- Test blood glucose after 10-15 minutes; if still less than 4 mmol/L repeat treatment (up to 3 cycles). If still hypoglycaemic after 30-45mins, or deteriorating at any stage, call doctor and consider IV glucose (as for severe) or 1mg Glucagon IM (once only)*.

- Blood glucose should now be above 4mmol/L. Give 20g of long acting carbohydrate e.g. two biscuits / slice of bread / 200-300ml milk/ next meal containing carbohydrate (give 40g if IM Glucagon has been used) . Continue regular glucose monitoring.
- For patients with enteral feeding tube, give 20g quick acting carbohydrate via enteral tube e.g. 50-70ml Ensure Plus® Juce or 100ml original Lucozade®, then flush. Check glucose after 10-15 minutes. Repeat up to three times or use IV glucose if deteriorating or after 30-45 mins. Follow up with feed bolus or by recommencing the feed to prevent further hypoglycaemia. If tube is dislodged or patient is unconscious IV glucose may be needed.
- See full guidelines at www.diabetologists-abcd.org.uk/subsite/JBDS_IP_Hypo_Adults_Revised.pdf

MODERATE

Patient conscious and able to swallow, but confused, disorientated or aggressive

- If capable and cooperative, treat as for mild hypoglycaemia
- If not capable and cooperative but can swallow give 1.5-2 tubes of glucose gel (squeezed into mouth between teeth and gums) or, if ineffective, use 1mg Glucagon IM (once only)*.
- Test blood glucose after 10-15 minutes and if still less than 4 mmol/L repeat above (up to 3 cycles). If still hypoglycaemic after 30-45 minutes, or deteriorating at any stage, call doctor and consider IV glucose (as for severe).

SEVERE (or fasting)

Patient unconscious/fitting, very aggressive or nil by mouth (NBM)

- Check ABC, stop IV insulin, contact doctor urgently
- Give IV glucose over 10-15 minutes as:
  - 100ml 20% glucose or
  - 150-200ml 10% glucose or
  - 30-40ml 50% glucose (*avoid unless 10% or 20% glucose unavailable – venous irritant and extravasation risk*)
- or 1mg Glucagon IM (once only) *
- Recheck glucose after 10 minutes and if still less than 4mmol/L, repeat IV glucose

- Once glucose above 4mmol/L and patient recovered, follow up treatment as on left.
- If NBM, once glucose >4mmol/L give 10% glucose infusion at 100ml/hr** until no longer NBM or reviewed by doctor. If on IV insulin, review infusion rate and consider restarting once glucose >4mmol/L (with concurrent IV glucose)

Do not omit subsequent doses of insulin. Continue regular capillary blood glucose monitoring for 24 to 48 hours. Long acting insulins and oral hypoglycaemic agents may be associated with prolonged and recurrent hypoglycaemia (≥ 36h, especially in renal impairment) needing IV glucose infusion and regular (at least hourly) blood glucose monitoring. Review insulin / oral hypoglycaemic doses. Give hypoglycaemia education and refer to diabetes team

*Glucagon may take up to 15 minutes to work and may be ineffective in undernourished patients, in severe liver disease and in repeated hypoglycaemia. Do not use in hypoglycaemia induced by oral hypoglycaemic agents (e.g. sulfonylureas).

**In patients with renal/cardiac disease, use intravenous fluids with caution. Avoid fruit juice in renal failure