Hypoglycaemia - Full Clinical Guideline

Reference No: CG-T/2023/168

Hypoglycaemia = blood glucose (BG) < 4 mmol/l

- Hypoglycaemic attacks ('hypos') require prompt action
- Patients should be encouraged to keep oral items for self treatment
- All patient areas should stock 'Hypo Boxes' and Glucagon
- Treat hypoglycaemia according to flow chart overleaf

Refer recurrent or severe hypoglycaemia (<2.5 mmol/l and/or 3rd party help needed to resolve) to Diabetes Team (Diabetes Specialist Nurse Referral via Extra Med (DERBY SITE) OR V6 (BURTON SITE)

Sulphonylurea (e.g. gliclazide) induced hypoglycaemia

- May be prolonged over 24 - 48 hours
- If initial hypoglycaemic coma continue 10% Glucose infusion after flow chart treatment completed
- If lowest BG < 3 mmol/l omit further dose until review by diabetes team If
- lowest BG between 3.0 and 3.9mmol/L reduce dose by 50% and consider Diabetes Team review (unless explained by missed meal)

Insulin induced hypoglycaemia

- **DO NOT** omit next dose of insulin if Type 1 diabetes (likely if on insulin since, or within 2 years of diagnosis)
- Next dose of insulin may be omitted if Type 2 diabetes and severe hypo (BG < 3mmol/L) pending advice from Diabetes Team
- It is vital that the underlying cause is considered in order to avoid further episodes (see below)

Prevention of recurrent hypoglycaemia

Consider cause;

- Inadequate food intake (fasting, missed meal/ bedtime snack)
- Too much or poorly timed insulin or oral agent
- Worsening renal or hepatic function or adrenal insufficiency
- Increased activity (unlikely cause in inpatients)

Action;

- Ensure appropriate access to food and insulin v meal timing
- Review recent pattern of BG results
- If recurrent hypos **refer to DSN via Extra Med (Derby) or V6 (Burton)**
    - The **causative** insulin dose should be decreased (this is usually the dose **preceding** the hypoglycaemic episode)
    - Magnitude of reduction depends on severity of hypoglycaemia

Technique for Glucose Gel administration- apply small squirts to left and right side of mouth between teeth and gums. Rub cheeks to aide absorption. Repeat until 2 tubes used.

Note- glucagon is not indicated in patients with liver failure or following prolonged starvation or recurrent hypoglycaemia. These patients are likely to have poor glycogen stores and will not respond to glucagon.

Note- glucagon dose should not be repeated- failure to respond implies inadequate glycogen stores.

Documentation Controls

Development of Guidelines:	Dr Suma Sugunendran
Consultation with:	
Approved By:	Diabetes Safety Group – June 2020 Medical Division – 14/08/2020 Reviewed no change - Diabetes Safety Group - Dec 2023 Medicine Division -
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Management of Hypoglycaemia in Adults with Diabetes Mellitus

HYPOGLYCAEMIA < 4MMOLS

Initially assess consciousness to define severity

MILD	MODERATE	SEVERE
Conscious, orientated and able to swallow	Conscious and can swallow but confused or aggressive	Unconscious, fitting or unable to take orally
Give fast acting oral carbohydrate (15-20g) ONE of the following: 4-5 Glucose tablets Fruit juice 200ml (orange or apple)	If capable and cooperative give 15-20g carbohydrate (**see left**) If NOT capable or cooperative but able to swallow give 2 tubes of glucose gel If unable to give either of the above gives 1mg IM glucagon	Check ABC. Stop IV insulin, bleep doctor Give 100ml 20% dextrose IV Quickly If NO immediate IV access gives 1mg glucagon

Check bedside blood glucose after 10-15 minutes-if still less than 4mmol/l repeat oral carbohydrate, Glucose Gel, or IV dextrose according to consciousness as above. Check again after 10-15minutes and repeat up to three times.

- When blood glucose 4mmol/L or above: Give 20g of long acting carbohydrate eg : two biscuits/slice of bread/200-300ml milk/next meal containing carbohydrate.
- For patients on enteral feeding tube: Give 20g quick acting carbohydrate via enteral feeding tube eg. 50-70ml Ensure Plus juice or fortijuce. Check glucose after 10-15mins.
- For patients NBM: Give 10% glucose infusion at 100ml/hr until no longer NBM or reviewed by doctor.

- DO NOT omit subsequent doses of insulin. Continue regular capillary blood glucose monitoring for 24-48 hours.
- Review insulin/oral hypoglycaemic medication doses.
- Refer to Diabetes team.

- Glucagon is NOT indicated in patients with liver failure or following prolonged starvation or recurrent hypoglycaemia. These patients are likely to have poor glycogen stores and will not respond to glucagon.

- **IN PATIENTS WITH RENAL/CARDIAC DISEASE, USE INTRAVENOUS FLUIDS WITH CAUTION. AVOID FRUIT JUICE IN RENAL FAILURE