Management of Hypoglycaemia / Hyperglycaemia - dose adjustment

To adjust insulin doses for a twice daily fixed insulin mixture (e.g. Novomix 30 / Humulin M3 / Humalog Mix 25)

- If glucose high / low before breakfast, increase / decrease EVENING insulin dose
- If glucose high / low before evening meal, increase / decrease MORNING insulin dose

For dosage adjustment with a basal-bolus regimen (e.g. Novorapid / Humalog and Insulatard / Levemir / Lantus)

- If glucose high / low before breakfast, increase / decrease EVENING long-acting insulin
- If glucose high / low before lunch, increase / decrease MORNING short-acting insulin
- If glucose high / low before evening meal, increase / decrease LUNCHTIME short-acting insulin
- If glucose high / low before bed, increase / decrease EVENING short-acting insulin

Other adjustments may necessitate a change of the mixture. For further advice please contact the Diabetes Team (Diabetes SPR or Diabetes Specialist Nurse) via switchboard.

Management of Acute Hypoglycaemia

Note: You will find - 1) Glucojuice, Glucotabs and GlucoGel in the ward Hypo box. 2) Glucagon IM in the ward fridge. 3) IV fluids in the ward treatment room 4) Biscuits, Bread and Fortijuice in the ward kitchen.

Algorithm for the Treatment and Management of Hypoglycaemia in Adults with Diabetes Mellitus 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: NHS Lothian Intranet > Healthcare > Diabetes > Metabolic Unit Handbook.

Mild

Patient conscious, orientated and able to swallow

Moderate

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

Severe

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





Give 15-20 g of guick acting carbohydrate, such as Glucose drink = Glucojuice 90-120mls or 150-200mls pure fruit juice** or 4-5 Glucotabs®. If not capable and cooperative but can swallow give 1.5-2 tubes of GlucoGel® (squeezed into mouth between teeth and gums). If ineffective, use 1mg Glucagon IM*.



Check ABC, stop IV insulin, contact doctor immediately

Give IV glucose over 10 - 15 minutes as 75 ml glucose 20% or 150ml glucose 10% or 1mg Glucagon IM * (see below)

Re-check blood glucose after 10 -15 minutes and if still less than 4mmol/L, repeat treatment.



Test blood glucose level after 10 - 15 minutes and if still less than 4 mmol /L repeat up to 3 times. If still hypoglycaemic, call doctor and consider IV glucose 10% at 100 ml/hr* or 1mg Glucagon IM*.





Blood glucose level should now be above 4mmol/L. Give 20g of long acting carbohydrate - e.g. 2 biscuits / slice of bread / 200-300ml milk / next meal containing carbohydrate (give 40g if IM Glucagon has been used e.g. 4 biscuits / 2 slices of bread / 400-600ml milk / next meal).

For patients with enteral feeding tube (give 50-70ml Glucojuice or Fortijuice®).

Once glucose greater than 4.0mmol/L restart feed / give bolus feed or start IV glucose 10% at 100ml/hr**.

If NBM, once glucose greater than 4.0mmol/L (give glucose 10% infusion at 100ml/hr** until no longer NBM or reviewed by doctor).

Do not repeat glucagon if it is effective

Do not omit subsequent doses of insulin. Continue regular capilliary blood glucose monitoring for 24 to 48 hours. 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 oral hypoglycaemic agent induced hypoglycaemia.

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

If hypoglycaemia occurs, DO NOT omit insulin injection if due, treat hypoglycaemia and review the insulin dose and reduce if necessary

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Verified / Approved by D&T and CDG subgroup

