Appendix 10: Management of Hypoglycaemia

It is important to monitor glycaemic control for patients on enteral feeding as the enteral feed may not mirror the patients' usual oral intake. As a result, the patients' usual diabetes medications and doses may not effectively manage their blood sugars. The link below can provide further information and guidance on monitoring blood sugars as well as advice on management of hypoglycaemia.

Appendix 10 adapted from:
'The NEWT Guidelines': For administration of medication to patients with enteral feeding tubes or swallowing difficulties. Wrexham Maelor hospital pharmacy department NEWT Guidelines
Handbook of Drug Administration via Enteral Feeding Tubes Third Edition.
01_1603PP_FM.qxd (rlandrews.org)
Lothian Enteral Tube Feeding: Best Practice Statement for Adults and Children. Jan 2007
Section 2 Medicines Administration - Final (scot.nhs.uk)
BAPEN patient and carer guide 'Tube feeding and your medicines' Medications | BAPEN

Other background reading/ useful websites:
www.bapen.org.uk
www.bpng.co.uk

This is an assessment tool for selected patients with Diabetes. Medication and enteral feeding regimens must be prescribed as per NHS Borders policy.
See guidance overleaf

Assessment Tool for Glycaemic Control During Enteral Feeding

- Tick (v) each hour that feed is in progress
- Enter blood glucose (BG) result and insulin administration code
- Review blood glucose results
- Facilitate adjustment of medication to optimise glucose control
- **NB** if feeding regimen is changed or stopped: review medication requirements

Name

DOB/CHI

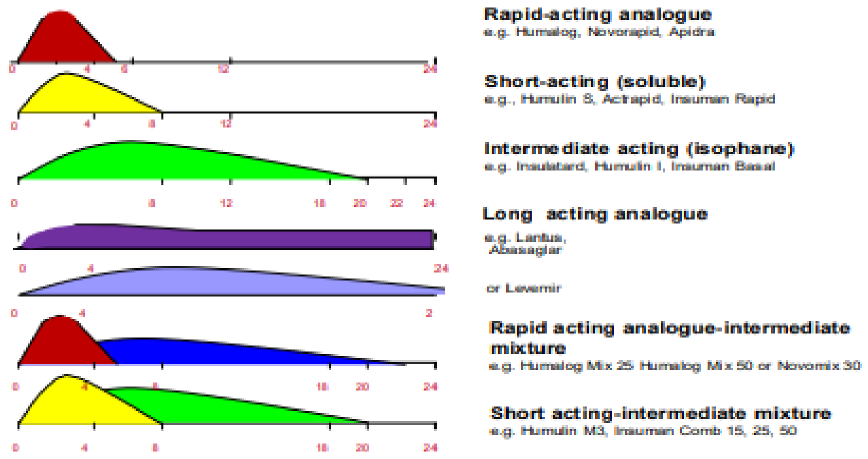
Ward

Time in hours DATE:	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00
Feed in progress ../ **BG mmol/L** **Insulin** Admin (insert code)																								
DATE	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00
Feed in progress ../ **BG mmol/L** **Insulin** Admin (insert code)																								
DATE	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00
Feed in progress ../ **BG mmol/L** **Insulin** Admin (insert code)																								
DATE	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00
Feed in progress ../ **BG mmol/L** **Insulin** Admin (insert code)																								

Type of Diabetes	**Date**	**Name of feed:**	**Volume**	**Feed duration (hours)**	**Rest Period (hours)**	**Oral intake Yes / No**
'Usual' Treatment						
Insulin O Tablets O						
GLP-1 O None O						
HbA1c mmol/mol						

Code	**Insulin preparation**	**Recommended time of administration: prescribe insulin on TPAR**
1		
2		
3		
4		
5		

Onset and Duration of Insulin[1]



1 Krentz AJ and Bailey CJ. Type 2 Diabetes in Practice. The Royal Society of Medicine Press. London 2001. p12
These diagrams are schematic only and represent insulin time action profiles.

Guideline for People with Diabetes on Enteral Feeding

SITUATION
Diabetes treatment during enteral nutrition must be effectively managed to reduce risk of hyperglycaemia and hypoglycaemia, optimise blood glucose control and weight management.

BACKGROUND
Experience shows that routine treatment for diabetes requires adjustment during enteral feeding regimens to maintain an appropriate level of glycaemic control.

ASSESSMENT
Treatment should be prescribed to take account of the following:

- Type of diabetes, HbA1c and routine treatment for glycaemic control
- Blood glucose (BG) monitoring results
- Type of enteral feeding regimen
- Duration of feed and rest period
- Whether or not oral nutritional intake is allowed

Monitoring

- Monitor BG 4 – 6 times per day to facilitate appropriate assessment of glycaemic control
- Check for ketones if BG levels > 15mmol/L in Type 1 diabetes & during acute illness/infection
- Monitor urea and electrolytes
- Document and report all results appropriately

Troubleshooting assessment when glycaemic control is out with target

- Is the medication/insulin prescribed at an appropriate time in relation to the start and duration of the feed?
- Has the type or volume of feed changed?
- Is there any change to oral intake?
- Has the start time, duration or rate of feeding regimen changed?
- Is there evidence of infection?
- Has steroid treatment been started, stopped or adjusted?
- Diabetes treatment may need to be increased during steroid treatment
- Diabetes treatment may need to be reduced if steroid treatment is reduced or withdrawn

RECOMMENDATION

- Refer to Diabetes Team for advice as necessary
- Agree target blood glucose levels and frequency of testing for each patient (e.g. 5-12 mmol/L, but individual assessment will be required)
- Insulin therapy may be required temporarily during enteral feeding regimens
- In some cases it is advisable to use IV insulin until the feeding regimen is established. IV insulin requirements can then be used to guide subcutaneous insulin requirements
- In patients with Type 1 diabetes and those post pancreatectomy are at risk of Diabetic Ketoacidosis. Consider use of long acting insulin analogues such as Glargine (Lantus) to provide basal insulin 24 hours per day
- Prescribe treatment in association with start time and duration of feed
- Make timely adjustment of treatment to optimise glycaemic control
- Refer to ward pharmacist for specific advice regarding administration of diabetes medicines via enteral tubes
- Review suitability of GLP-1 analogues, if prescribed as their action slows down gastric emptying
- Review diabetes treatment if enteral feeding regime is altered or stopped
- Review diabetes treatment if oral intake is introduced, reduced or withdrawn
- **Think feet**: check feet daily, identify risk and prevent foot problems

Management of Hypoglycaemia

Hypoglycaemia i.e**.** blood glucose (BG) level < 4 mmol/L should be avoided. In the event of hypoglycaemia prompt treatment is required as follows:-

Conventional treatment for hypoglycaemia *

- If patient is able to swallow give hypo treatment as per NHS Borders eg. 60mls Glucojuice
- If patient confused or drowsy but able to swallow safely – administer Glucogel
- If patient unconscious/unable to swallow – administer IV Glucose
- Follow up with complex carbohydrate snack to maintain blood glucose e.g. wholemeal toast

If BG < 4mmol/L and Enteral tube insitu *

- Give 15- 20g of quick acting carbohydrate **via enteral tube** e.g.60mls Glucose Juice "Lift", then flush
- Recheck BG after 15 minutes
- If BG remains < 4mmol/l give further 20g quick acting carbohydrate as above
- Repeat up to three times or use IV glucose if needed
- If feed not due to restart give 45-60mls of nutritional supplement then flush

If BG < 4mmol and IV insulin is infusing *

- Infuse 50 ml of 10% Glucose IV
- Reduce hourly IV insulin rate by 50%
- Recheck BG within 15 minutes
- If BG remains < 4mmol/L, stop IV insulin infusion for 15 minutes and recheck BG
- If BG remains < 4mmol/L, treat with IV Glucose, recheck BG and restart IV insulin infusion
- Check ketones in patients with type 1 diabetes if IV insulin infusion has been disconnected

*** In all patients following hypoglycaemia**

- Recheck blood glucose within 15 minutes to identify recovery or identify if further treatment is required
- Observe and chaperone patient until recovery from hypoglycaemia is complete
- Establish the cause of hypoglycaemia and **take action to prevent recurrence**
- **DO NOT OMIT insulin,** consider reduction of insulin dose given before hypoglycaemic event
- Consider reduction in oral hypoglycaemic medication given, before hypoglycaemic event
- Inform patient if medication dose is changed
- Refer to the Diabetes Team for advice as required

Diabetes team contact details

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