

UKINETS Bitesize Guidance for the Nutritional Management of Insulinomas

Patients should be screened for malnutrition using a validated nutrition risk screening tool. Patients at risk should be referred to a dietitian. Specialist dietitian or clinical nurse specialist input is recommended alongside this guidance.

The dietetic goal is to stabilise blood glucose levels and prevent the tumour's insulin secretion from causing hypoglycaemia. Recommend referral to a dietitian and collaborate effectively with the multidisciplinary team and endocrinologist.

Hypoglycaemia Management

- Agree on a threshold for hypoglycaemia, <3.5mmol/l - 4.0mmol/L based on the individual level of risk/hypoglycaemia awareness.
- Confirm sensor hypoglycaemia with CBG.
- If confirmed hypoglycaemia treat with 15-20g rapid acting carbohydrate (e.g 4-5x Jelly Babies, 4-5x glucose tablets, 150-200ml orange juice).
- Check CBG after 10-15minutes. If still hypoglycaemic take a further 15-20g rapid carbohydrate.
- Repeat until normoglycaemic. Seek medical help if hypoglycaemia persists after 3 treatments.
- Once normoglycaemic, either follow with the next meal (if due) or 15-30g of slower acting carbohydrates (e.g 1-2x slices of granary toast, 1-2x piece(s) of fruit, cornstarch mixture).

Hypoglycaemia unawareness can occur if glucose levels are persistently low, increasing risk of severe hypoglycaemia. Glucose sensors with alerts can be useful to manage this.

Glucose Monitoring

There are no agreed guidelines on recommended frequency or method of glucose monitoring and should be guided by the MDT.

Capillary Blood Glucose (CBG)	Continuous Glucose Monitoring (CGM)
• More accurate • More painful • Less practical	• Less accurate than CBG, especially at lower levels • Results often have a slight delay • More practical • Can provide 24hr sensor glucose readings • Can have predictive low glucose alerts • Access can be challenging – liaise with diabetes teams regarding funding requests

First Line Advice – Dietary Management

- Low glycaemic index (GI) diet.
- Educate on carbohydrate awareness early in diagnosis.
- Regular carbohydrate rich meals and snacks (aiming for 1g carbohydrate/kg ideal body weight every 4-6 hours)
- Pair with fat, fibre and protein to slow down the absorption of the carbohydrate.
- Adjust amount, type and timing of carbohydrate if hypoglycaemia persists.

Second Line Advice – Uncooked Corn Starch/Cornflour

- If the initial advice does not adequately prevent hypoglycaemia, you may want to include uncooked corn starch or cornflour in your approach.
- Mix with water, milk, yoghurt or other cold fluids/desserts to the desired consistency.
- Start with 1g/kg body weight (or ideal body weight for those with obesity) every 4 to 6 hours.
- Titrate dependent on frequency and severity of hypoglycaemia e.g. increasing by 10-30% at a time or reducing the gap between carbohydrate intake.
- Take in addition to or instead of meals/snacks.
- An overnight/~3am dose of corn starch may be needed
- Monitor GI symptoms (e.g. bloating, wind, altered bowel habits).

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Third Line Advice – Modified Corn Starch Products e.g. Glycosade

- If first- and second-line advice is insufficient to prevent hypoglycaemia, consider adding modified corn starch products like Glycosade.
- Use Glycosade if a patient cannot tolerate uncooked cornstarch or has gastrointestinal symptoms such as bloating or diarrhoea.
- Mix with water, milk, yoghurt or other cold fluids/desserts as per instructions on the packet.
- Match or exceed the current tolerated corn starch dose.
- Titrate dependent on frequency and severity of hypoglycaemia (e.g. increasing by 10-30% at a time or reducing gap between carbohydrate intake).
- Take in addition to or instead of meals/snacks dependent on the timing and severity of hypoglycaemia.
- Glycosade is a prescription only product.

Fourth Line Advice – Artificial Nutritional Support

- Consider enteral feeding if unable to prevent hypoglycaemia orally.
- Ensure there is a contingency plan in the event of loss of access.
- Consider gastrostomy or jejunostomy feeding instead of nasogastric/jejunal feeding tubes to reduce displacement risk if longer term feeding may be necessary.
- If enteral routes are contraindicated or enteral feeding is ineffective in mitigating hypoglycaemia, consider parenteral nutrition.

Additional Considerations

- Weight gain is likely due to the nutritional support provided
- Some treatments are weight positive e.g. diazoxide and corticosteroids
- Minimising weight gain may be possible by replacing higher fat foods with lower fat options while adhering to other dietary principles

References

Managing Hypoglycaemia in Patients With Insulinoma—A Tertiary Centre Experience and Review of the Literature; Sophie Howarth, Tak-Wai Ho, James Wimbury, Ruth Casey

<https://onlinelibrary.wiley.com/doi/full/10.1111/cen.15188>