SECTION 11: CARE OF THE CHILD WITH DIABETES

11.7 Hypoglycaemia in Children

11.7.1 Treatment of Mild to Moderate Hypoglycaemia in Children with Type One Diabetes

Aim

To raise the Blood Glucose Level (BGL) in a timely manner following the onset of hypoglycaemia.

Key Points

- If hypoglycaemia is not recognised and treated immediately the child may become unconscious.
- Order 100mL of glucose solution (5 treatments) from the Formula Room on admission of infants/children under two years diagnosed with Type One diabetes.
- If the 'hypo' occurs at a mealtime additional carbohydrate is not required as long as all the carbohydrate from the meal is eaten.
- For treatment of mild to moderate hypoglycaemia in inpatients with Type One diabetes on continuous subcutaneous insulin infusions (insulin pumpers) refer to PNPM 11.7.3.

Clinical Indications of Hypoglycaemia [1]

Clinical features may vary within or between individuals.[1]

Mild Hypoglycaemia	Moderate Hypoglycaemia
Autonomic Features:	
• Hunger • Sweatiness • Tremor • Palpitations, Tachycardia • Shakiness, Dizziness	• Abdominal pain • Sweatiness • Pallor • Tachycardia
Neuroglycopenic features:	
• Decreased attention/cognitive performance • Irritability, nervousness, anxiety • Other personality changes: • Appears intoxicated • Reports of 'low' mood	• Confusion • Behaviour changes, aggressiveness • Headache • Drowsiness • Weakness, difficulty walking • Impaired or double vision, dilated pupils

Procedure	Additional Information
Rest the child. Determine contributing factors.	Usual causes of hypoglycaemia: • Too much insulin • Not enough carbohydrate • More exercise than usual [1]
Check the child's blood glucose level (BGL)	Although it is useful to have the hypoglycaemia confirmed by a blood glucose measurement, treatment is urgent and should not be withheld if undue delay is likely.[1]
If BGL less than 4.0mmol/L: **Children > 2 years** 1. Give 4 glucodin glucose tablets immediately Or 100mL lemonade Or Two teaspoons of honey or pure sugar (dissolve in a little water if required)	Consumption of 10-20gms of an easily absorbed form of carbohydrate, followed by a snack of carbohydrate foods will assist child to regain normoglycaemia until the next meal or snack.[2] Lemonade and chewable glucose tablets are examples of appropriate foods for the treatment of mild to moderate hypoglycaemia.[2] Carbohydrate given in liquid form may be taken more easily.[1] Do not give honey to children under 12 months.[3,4] It may be appropriate to give small amounts of rapidly absorbed simple carbohydrate frequently.
2. If more than 30 minutes until next meal or snack, follow with a complex long-acting carbohydrate snack: • Piece of bread or toast • Muesli bar • 3 to 4 crackers • Fruit finger • Piece of fruit	

Procedure	Additional Information
Infants/children < 2 years 1. Give one of the following fast acting carbohydrates immediately: 20mL glucose solution Or 1 teaspoon sugar dissolved in a little water Or 1 teaspoon (mL) of glucose syrup Or 50mL flat lemonade 2. Follow with a complex carbohydrate: • 100 – 150mL of formula or cow's milk. • 50 – 100mL yoghurt • ½ piece of bread/toast • ½ piece of fruit (eg. banana)	Each of these will provide approximately 5 grams of sugar. Carbohydrate given in liquid form may be taken more easily.[4] **Do not give honey to infants**: *infantile botulism* has been associated with ingestion of honey and should not be given to children < 12 months.[3,4]
If no improvement after 15-20 minutes repeat whole procedure.	
Test BGL again after 15 minutes.[1]	Simple carbohydrates should raise blood glucose levels within 5–15 minutes.
Document in the notes and inform the diabetes medical team.	Medical staff require knowledge of patient's hypoglycaemic episodes in order to adjust insulin accurately.

Related Documents
ANTT® Clinical Practice Framework
Wound Cleansing Solutions

References:

1. Australasian Paediatric Endocrine Group. National Evidence-Based Clinical Care Guidelines for Type 1 Diabetes in Children, Adolescents and Adults. Canberra:

Government Printer; 2011. Available from: http://www.apeg.org.au/portals/0/guidelines1.pdf Accessed November 2013

2. National Institute for Clinical Excellence. Type 1 diabetes in children, young people and adults. [Clinical Guideline 54] 2004. Available from: http://www.nice.org.uk/CG015NICEguideline. Accessed: November 2013
3. Tanzi MG & Gabay MP. Association between honey consumption and infant botulism. [Literature Review]. Pharmacotherapy.22(11):1479-1483; 2002.
4. World Health Organisation. WHO Media Centre. Botulism. Fact Sheet No.270 [Expert Opinion] 2013. Available from: http://www.who.int/mediacentre/factsheets/fs270/en/ Accessed November 2013

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