WOMEN'S HEALTH AND PAEDIATRICS
PAEDIATRIC DEPT

GUIDELINES FOR MANAGEMENT OF HYPOGLYCAEMIA IN PAEDIATRIC DIABETIC PATIENTS

Amendments			
Date	Page(s)	Comments	Approved by
Sep 2013	New Guideline		
March 2018		Whole document review	Paediatric Guideline Group

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In Consultation with:

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Target Audience: Doctors, nurses and support staff working in Paediatrics

Impact Assessment Carried Out By:

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- **Definition: Hypoglycaemia in children with diabetes is a blood glucose < 4.0 mmol/L**.
  "**4 is the floor**" in diabetic patients provides a vital safety margin. Do not confuse with the lower level of 2.6 mmol/L used for patients without diabetes.

- **Signs and Symptoms of Hypoglycaemia:**

  A child/adolescent may exhibit some of the symptoms below, while others may have no symptoms. *(The list is not exhaustive and if you suspect a child/adolescent is experiencing a hypo their capillary blood glucose **MUST** still be checked).* ***"If in doubt, check it out"***

Autonomic	Neuroglycopaenic	Behavioural
• Pale • Sweating/clammy • Hungry • Tremor • Restlessness	• Headache • Confusion • Weakness • Glazed expression • Lethargy • Visual/speech disturbances • Seizures • Unconsciousness	• Irritability • Mood change • Erratic behaviour • Nausea • Combative behaviour

- **Treatment of Hypoglycaemia:**

  If Child is able to tolerate oral fluids / Glucogel. See Page 2
  If Unconscious or fitting child requires parenteral therapy See Page 3

Also remember:

- Do not leave a child/adolescent with hypoglycaemia alone.
- Please inform Paediatric Diabetes Specialist Nurses *on extension 3314* of any patients with diabetes presenting with hypoglycaemia to A&E, even if not admitted (please note - the PDSNs are not always in the office, so please leave a message if you do not directly speak to one)
- Out of hours please record in Diabetes Communication Folder and leave a message on the PDSN phone to inform them

Treatment of Hypoglycaemic Conscious Child

1. If child is co-operative and able to tolerate oral fluids:

Injections = 10grams of fast acting glucose

- 100mls full sugared fruit juice/3-4 dextrose or gluco tablets/3-4 jelly babies or fruit pastels

Pump = 15grams of fast acting glucose

- 150mls full sugared fruit juice/4-5 dextrose or gluco tablets/4-5 jelly babies or fruit pastels

2. If child refuses to drink, is uncooperative, but is conscious:

Give Glucogel® or Dextrogel® (formerly known as Hypostop®). **Each tube contains 10g glucose.**

Injections = 1 Tube

Pump = 1 & a half tubes

Squirt tube contents in the side of each cheek (buccal) - massage gently from outside enabling glucose to be swallowed and absorbed quickly.

DO NOT use in an unconscious or fitting child.

After 15 minutes recheck blood glucose:

1. If still low (<4 mmol/l) and able to take oral fluids repeat Box 1 above (once)*
2. If still low (<4 mmol/l), refuses to take oral but is conscious, follow Box 2 above (once)
3. If still low (<4 mmol/l) after 3rd attempt of treatment & child still conscious – bleep Reg
4. If child becomes unconscious or has a seizure then proceed to Box 4 (See Page 3)
5. If better and blood glucose > 4.0 mmol/L follow Box 3 (see below)

***Pump =** *if after 1st attempt - still low (<4 mmol/l) then disconnect pump for 30-60mins*

3. If feeling better and blood glucose level >4.0mmol/L:

Injections = Give slow acting carbohydrate snack (if pre-meal see below*):

- One slice of toast
- Small Banana
- A cereal bar (max 15g)
- One **plain** digestive or hobnob biscuit

Insulin Pump = No follow up snack required

***Hypo pre-meal** = Treat Hypo First! Once the blood glucose is >4.0 mmol/L - normal insulin dose should be given as usual. DO NOT OMIT INSULIN

Consider cause of hypoglycaemic episode?

Treatment of Hypoglycaemic Unconscious child

Follow this page if child unconscious or fitting (or if not responded from page 2)

- **Bleep Paediatric Registrar**
- **Place in the recovery position if possible and assess ABC**
- **DO NOT attempt to give any oral fluid or Glucogel®**
- **If IV access is present go straight to box 5 instead of box 4**

4. Give Glucagon (Glucagen) by intramuscular injection

- Check if IM glucagon has been given at home or in ambulance.
- Check expiry date.
- Administer intramuscularly in the thigh.

Dose: Age < 8 yrs or body weight <25 kg: 0.5 ml (half syringe)
Age > 8 yrs or body weight >25 kg: 1.0 ml (whole syringe)

Glucagon is a fast acting drug and the child/adolescent should respond after 5 minutes. After the child has regained consciousness leave him/her on one side as one of the common side effects of glucagon is vomiting/nausea.

5. IV 10% Glucose

If recovery is inadequate after a dose of glucagon or IV access is available**: Give 2 mls/kg 10% Dextrose** as slow IV bolus.

Note: If alcohol is involved, glucagon may be ineffective (as hepatic stores of glycogen depleted) and intravenous glucose will be required.

Further Monitoring after a severe hypo:

- Check blood glucose after 5 minutes, 15 minutes and then half hourly until BG stable above 5 mmol/l
- Continue to monitor baseline observations: oxygen saturations, pulse, blood pressure, temperature
- Record presence or absence of ketones.
- Notify Diabetes Team during working hours & liaise with on call team as needed
- **Do not omit normal insulin**.

If blood glucose >4.0mmol/L and child able to tolerate oral fluids:

- Offer clear fluids, and once tolerating clear fluids offer simple carbohydrates, such as toast, crackers (see box 3, page 2)
- Try to identify the cause of hypoglycaemia and discuss this with the patient/family
- Refer to diabetes team for review of treatment, advice or education

If child not improving:

- Admit for iv fluids (5-10% dextrose saline)
- If a child/adolescent remains unconscious on correction of blood glucose consider cerebral oedema, head injury, adrenal insufficiency or drug overdose.

Reference: BSPED guidelines for Hypoglycaemia in Diabetes:
May 2012 Authors: F Ackland, C Burren, J Edge, E Hind, A McAulay