

Guidelines for the Paediatric Registrar regarding the management of diabetic children on insulin pens at home (out of hours)

(NB For patients on the pump please refer to separate pump guidelines)

Parents will be asked to ring the on-call paediatric registrar, if they require advice out of office hours (ie between 5pm and 9am weekdays and during the weekend). The following is a guide to the advice that should be given to the parent and child.

For all such contacts, please leave the patient's details on Paediatric Diabetes Nurse Specialist's (Jocelyn Hall/ Cathy Bryant/ Debra Lake) answer phone, ext 3314/ 3633 or by e mail. They will follow up on the next working day.

Hyperglycaemia without illness

High blood sugars (e.g. over 10 mmol/l) can occur for a number of reasons and do not always indicate a need to increase the insulin, unless they occur on several measurements. Routine adjustments are then made by 1 - 2 units only.

If a parent rings for advice about hyperglycaemia and the child is well, then advise plenty of sugar-free drinks and monitoring of pre-meal blood sugars.

Possible reasons for hyperglycaemia

Actions

Erroneous testing e.g. hands not washed, meter not calibrated	Re-test after hand washing, calibrating meter etc.
The child has been very excited e.g. at a party, on an outing or any change in routine	Give extra fluids and the blood sugars should gradually settle
The child has eaten or drunk sugary foods/drinks	Give extra fluids and the blood sugars should gradually settle
Stressful events e.g. exams	Blood sugars will settle gradually
Insulin dose not given or too small a dose given	Give extra fluids and monitor regularly until the blood sugars return to their usual range. Review the possible reasons as to why the incident occurred
The child had a hypoglycaemic episode in the last few hours and the blood sugars have been caused by 'rebound'	Do not give extra insulin. Give extra fluids and monitor

Hyperglycaemia with illness

If the child is unwell ensure parents take the following actions

	Rationale
Do not omit insulin, even if the child is not eating	Insulin requirements are usually increased during illness, but some children (usually the very young) may become hypoglycaemic if they are unwell and not eating
Monitor blood sugars 4 hourly	It is essential to ensure that the hyperglycaemia is not worsening
Test urine for ketones	The presence of ketones indicates a need for more insulin
If not eating, replace food with small, frequent sugary drinks, e.g. fruit juice, non-diet lemonade or coke, Lucozade, ice lollies	Drinks are often acceptable forms of carbohydrates when the child's appetite is poor
Snacks can be encouraged e.g..biscuits, yoghurts	Small, frequent snacks will help to boost the child's carbohydrate input if meals are being refused
Encourage extra sugar free fluids especially water	Fluid requirements are increased during illness

Mild illness

Provided that there are no ketones, insulin may be increased by 1 or 2 units at each dose. However, there is often no need to make this increase.

Diarrhoea and Vomiting

Decreased absorption during episodes of vomiting and diarrhoea may lead to a fall in the blood sugars and there may be difficulties in maintaining adequate carbohydrate intake. These problems may require a reduction in the insulin dosage. The reduction will depend on the degree of hypoglycaemia.

Advice to parents:

- Frequent blood testing is essential.
- Encourage fluids in the form of small chips of flavoured ice, flat non diet coke or lemonade.
- Advise parents to watch for signs of dehydration.
- Review at hospital if fluids are not tolerated, or symptoms do not improve within 4 hours.

Hyperglycaemia with ketones

This is an indication of the need for extra insulin. The dose is worked out depending on the patient's insulin sensitivity especially if they are carbohydrate counting. If not, they usually have a sliding scale for blood sugars above 10 mmol/l. The extra insulin is given mainly with meals but not more frequently than two hours apart, until the blood ketone level is ≤ 0.6 mmol/l and blood sugars are returning to normal.

The insulin sensitivity is usually programmed in the dose advisor glucometers which patients who are carbohydrate counting tend to use.

For patients on the pump refer to pump guidelines.

Other points to remember:

- Assess parents' ability to cope.
- **If symptoms do not improve within 4 - 6 hours or the child complains of abdominal pain, nausea and vomiting and blood ketone level $\geq 1.5\text{mmol/l}$ hospital review is necessary.**
- Four hourly blood sugar monitoring and blood ketone testing is essential. This is especially so if extra insulin has been given.
- Encourage sugar free fluids.
- If not eating, encourage sugary foods and drinks e.g. Lucozade, non diet coke or lemonade.

If Registrar is unable to answer query or unable to give appropriate advice from the Guidelines they are to discuss the problem with the General Paediatric Consultant on call.

If the query remains unresolved, under the instruction of the General Paediatric Consultant, the query should be escalated to the on call Paediatric Diabetes Consultant via switchboard.

Dr Gillian Baksh	Pager 8418
Dr Sonali D'Cruz	Pager 8954
Dr Shailini Bahl	Pager 8137