



Diabetic children undergoing surgery

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INTRODUCTION

- Preparation is important ...
 - ✓ Which?
 - ✓ What ?
 - ✓ Why?

Important considerations

- Target BGL during surgery 5-10mmol/l
- Type of surgery
 - (elective or ER)
 - fasting (food, fluid...6,4hrs)
- Type of procedure
 - minor or major
 - fasting (food, fluid...6,4hrs)
- Usual insulin regimen of child.

Minor surgery

BD INSULIN REGIMEN

. Pre op
7:00am $\frac{1}{2}$ morning dose + IVF
5-10% **or**
omit morning dose & start IV
fluid & insulin

. Post op
oral or IVF acc. To condition
Short or rapid acting insulin
pre lunch
Evening dose as usual

BASAL BOULS REGIMEN

. Pre op
Evening dose .. As usual (70-80%)
Morning dose .. 75-100%
Omit breakfast rapid acting insulin
(unless hypergly.) **or**
Omit basal & bouls insulin and start
IVF & insulin

. Post op
Mid morning sh /rapid
acting insulin if
required when pt.
tolerating orally (dec.
dose)

Major surgery

- **Important consideration**

- ❖ Admission
- ❖ Even if fasting ... insulin mandatory
- ❖ If fasting >2hrs before anesthesia... glucose infusion
- ❖ During surgery .. RBS frequently
- ❖ Hypotension(anesthesia) ... N/S or RL.

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1) I.V.F

- ✓ usual maintenance
- ✓ Glucose .. 5% (10% if hypoglycemia considered)
- ✓ if BGL high ($>14\text{mmol/l}$) ..1/2 N/S or N/S & increase insulin dose
- ✓ When BGL falls $< 14\text{mmol/l}$ add 5% dextrose
- ✓ Use 0.45% saline with 5%glucose .. When [Na] falling use 0.9% saline
- ✓ After surgery add KCL... 20 mmol for 1 lit. IVF.

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2) Insulin infusion (50 u in 50 ml 0.9% saline ..
1 u/ml .. Syringe pump)

BGL Mmol/l	Insulin infusion U or ml / kg /hr
6-7>	0.025
8-12	0.05
12-15	0.075
15<	0.1

Table 583.9 -- GUIDELINES FOR INTRAVENOUS INSULIN COVERAGE DURING SURGERY

BLOOD GLUCOSE LEVEL (mg/dL)	INSULIN INFUSION (U/kg/hr)	BLOOD GLUCOSE MONITORING
<120	0.00	1 hr
121-200	0.03	2 hr
200-300	0.06	2 hr
300-400	0.08	1 hr ^(†)
400	0.10	1 hr ^(†)

An infusion of 5% glucose and 0.45% saline solution with 20 mEq/L of potassium acetate is given at 1.5 times maintenance rate.

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- Aim of BGL 5-10 mmol/l
- IV insulin ... BGL hourly (at least)
- If BGL < 5-6mmol/l ..reduce rate of insulin
- If BGL < 4 mmol/l .. Stop insulin 10-15 min.

..Finally

- Key performance indicator
 - ❖ child's insulin regimen
 - ❖ Children first
 - ❖ BGL remain stable
 - ❖ Normal procedures..



Thank