THEATRE GLYCAEMIC CONTROL and Use of the Glucose Potassium Insulin (GKI) Infusion

FOR USE BY AN ANAESTHETIST IN THEATRE ONLY

PREOPERATIVE HYPERGLYCAEMIA

A patient with hyperglycaemia on the ward preoperatively should be managed by using the perioperative diabetes protocols.
If there is insufficient time to stabilise the blood glucose to 12 or under, it may be reasonable to proceed with surgery in the following circumstances:

Blood glucose 12-20 despite s/c actrapid bolus	+	URGENT surgery (e.g. cancer)	+ NO KETONES in urine	= May proceed with surgery but requires ACTIVE intraoperative blood glucose management (as per protocol overleaf)

This is entirely at the discretion of the *responsible consultant anaesthetist*.

INTRAOPERATIVE CARE

Check blood glucose in anaesthetic room if it has not been done within 1 hour, and at least hourly throughout surgery.

Insulin dependent diabetics **MUST have a GKI or other insulin regime during surgery** if they are missing more than 1 meal in total, even with a normal blood glucose. Without insulin, these patients will become highly catabolic and will have worse outcomes.

Continuous s/c insulin pumps should be discontinued in patients who have reduced peripheral circulation/hypotension and GKI used instead.

If the GKI needs to be disconnected for transfer, this should be reconnected immediately as Actrapid is only active for 3 minutes when given IV. Consider adding an extension to the GKI infusion set.

Use a GKI for tablet-controlled diabetes with blood glucose outside **4-12mmol range,** or if they are likely to be fasted postoperatively.

Avoid actrapid infusions unless blood glucose >15 in order to facilitate good control on transfer to recovery and prevent using patient substrate for energy rather than glucose infusion.

POSTOPERATIVE CARE

Any actrapid infusion must be changed to a GKI on admission to recovery.
Blood glucose must be checked on admission to recovery and immediately prior to discharge to the ward.
A written plan must be provided on the postoperative diabetic handover form.

Always continue GKI until one hour after subcutaneous insulin or tablets are restarted, which should be once the patient is eating and drinking
Use the patient's VERIFIED original subcutaneous insulin regime or oral diabetes medications. Dose adjustment may be required as per handover sheet.

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GKI: 80 ml/hr 500ml 10% glucose + 10mmol Potassium (KCl) + Actrapid 16 units

Omit potassium in renal failure

Use 12 units if patient received long acting insulin
Use 10 units if renal failure or known insulin sensitivity

NOTE: IF TAKING LONG-ACTING S/C INSULIN, CONTINUE AT 80% OF USUAL DOSE (Insulatard, Humulin I, Glargine, Determir) whilst on GKI

Check blood glucose (BG) hourly

Blood glucose below 4.0
STOP GKI & give 200ml 10% Glucose
Recheck BG every 15min
When BG above 4 restart GKI with 4 units less Actrapid (change bag)

Blood glucose 4.1 – 6
Reduce Actrapid by 4 units after 1 BG reading in this range (change bag)

Target blood glucose 6.1 – 10
Continue current GKI dosing

Blood glucose 10.1 – 15
Increase Actrapid by 4 units after 2 consecutive readings in this range (change bag)

Blood glucose above 15
Discontinue GKI and use IV Actrapid infusion 50 units in 50ml saline 0.9% at 6ml/hr
Once BG below 15 restart GKI with 4 more units Actrapid

ONLY for use by anaesthetists in theatre and must change to a GKI at least 1 hour before ward care