

Glucose insulin infusions– Adjustable dosage

Blood Glucose mmol/L	Insulin Rates (mL/hr) Start on standard rate unless otherwise indicated				
	Reduced Rate <small>(insulin sensitive e.g ≤24units/day)</small>	Standard Rate <small>(1st choice in most patients)</small>	Increased rate <small>(For insulin resistant patients e.g. ≥100units/day)</small>	Customised Scale	Customised Scale
<4.0	0*	0*	0*		
4.1-8.0	0.5	1	2		
8.1-12.0	1	2	4		
12.1-16.0	2	4	6		
16.1-20.0	3	5	7		
20.1-24.0	4	6	8		
>24.1	6	8	10		
Prescriber signature					
Date					

Note: If a patient is on basal subcutaneous insulin-continue this alongside the VRIII

* Treat hypoglycaemia and once CBG>4.0mmol/L, restart VRIII within 20 minutes

Insulin preparation: 50units of soluble insulin (Actrapid) is diluted with 49.5mL 0.9% saline in a 50mL syringe to give 1unit/mL. Use an insulin syringe and mix thoroughly.
To be prescribed on the infusion section of main drug chart.

Indications for use of VRIII

- Vomiting (excluding diabetic ketoacidosis and HHS)
- Nil by mouth and will miss more than one meal
- Severe illness with need to achieve good glycaemic control e.g. sepsis

Intravenous fluid recommendations. Review fluid status daily

- When blood glucose <15mmol/L, infuse 1L of 5% glucose with 20mmol potassium chloride at 1ml/kg/hr (maximum 100ml/hour)
- When blood glucose ≥15mmol/L, infuse 1L of 0.9% sodium chloride with 20mmol potassium chloride at 1ml/kg/hr (maximum 100ml/hr)

Blood Glucose Testing:

Hourly

Date	Blood Glucose (mmol/L)	Insulin unit/hr	Blood ketones	Name and signature
08.00				
09.00				
10.00				
11.00				
12.00				
13.00				
14.00				
15.00				
16.00				
17.00				
18.00				
19.00				
20.00				
21.00				
22.00				
23.00				
24.00				
01.00				
02.00				
03.00				
04.00				
05.00				
06.00				
07.00				

Essential Monitoring during the use of VRIII

- Target range for capillary blood glucose is 6-10mmol/L
- Hourly monitoring of capillary blood glucose
- Hourly review of insulin infusion rate to achieve target range of glucose
- At least daily review of the need for VRIII
- At least daily review of the patient including fluid status
- Daily urea and electrolytes
- For CBGs persistently above 12.0mmol/L and NOT falling, check ketones 4 hourly if have Type 1 diabetes, at least once if Type 2
- Review the patient within 6 hours of starting VRIII to make sure the CBGs are in target

Potassium supplementation:

- Aim to keep K⁺ 4.0-5.0mmol/L
- If serum K⁺ >5.5 no additional K⁺ but reassess serum k⁺ regularly
- If serum K⁺ is 3.5-5.5mmol/L, use 5% glucose with 40mmol/L KCL at 125ml/hr
- If serum K⁺ <3.5 senior review as extra potassium needs to be given
- Caution in those with eGFR <20ml/min– may need less K⁺

Converting back to subcutaneous (SC) insulin

- Patients should be able to tolerate a light meal before discontinuing VRIII
- It is not recommended that VRIII is stopped overnight. Seek advice from the medical team on-call
- Give first dose of quick or intermediate acting SC insulin with a meal 30minutes before stopping VRIII

Continuous subcutaneous insulin infusion (CSII)

- Contact Diabetes team immediately for all insulin pump patients
- Please refer to Joint British diabetes society-IP guidelines October 2015^{*}

Fix Addressograph here or Enter Patient Details

NHS No: _____

Hosp. No: _____

Surname: _____

First Names: _____

Date of Birth: _____

Consultant

Ward

Diabetes History (Circle as appropriate)

Diabetes Diagnosis Date

Diabetes Type

Type 1

Type 2

Other

DIABETIC MEDICATION ALLERGY: Yes/No. If Yes, list the diabetic medication(s) and reactions

☐ Self administration trust policy complete: Patient is self administering insulin ☐ Patient is self dosing insulin ☐

USUAL DIABETES MEDICATIONS ON ADMISSION (Please complete on admission)

Date Completed		Name of insulin/drug (including device)	Dose (units)			
			Breakfast	Lunch	Dinner	Bedtime
INSULIN	Short-acting					
	Mixed preparations					
	Long-acting					
OTHER DIABETIC MEDICATIONS <small>(These MUST be prescribed on the In Patient prescription chart)</small>						

Contact Diabetes Team for patients admitted on a subcutaneous insulin pump (CSII) Tick if applicable:

☐ Patient on a personal subcutaneous insulin infusion pump– Type of insulin in pump :
Patients with insulin pumps will adjust the basal rate, if necessary with the help of the Diabetes Team.

EMERGENCY TREATMENT OF HYPOGLYCAEMIA (Capillary Blood Glucose <4mmol/L) IF USING PLEASE INFORM DOCTOR (Refer to Trust protocol for management of Hypoglycaemia guidelines)							
Oral Glucose Tablets/Glucose Juice- if able to swallow	Give 4-5 tablets or one bottle of juice orally	Start Date		Date Time			
		Bleep		Given by sig.			
ORAL Glucose Gel- if able to swallow	Give 1.5-2 tubes orally	Start Date		Date Time			
		Bleep		Given by sig.			
IM Glucagon- if unable to swallow (stored in fridge)	1mg IM	Start Date		Date Time			
		Bleep		Given by sig.			
Prescribers sig.							

IV Glucose 20% or Glucose 10%	Contact Doctor before administering	Date Time		Date Time		Date Time	
		Prescribers sig.		Prescribers sig.		Prescribers sig.	
		Given by sig.		Given by sig.		Given by sig.	
Note: If NBM give glucose 10% infusion at 100mL/hr until no longer NBM or reviewed by a doctor. Prescribe on infusion chart							

Once Only Drugs

Date	Time	Insulin Name	Dose (units)	Route	Prescribers sig. & Reg no.	Time given	Given by sig.	Pharm

* Reference: JBDS-IP guidelines. The use of variable rate intravenous insulin infusion (VRIII) in medical inpatients October 2015

MR6328A

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Name:_____ **Hospital Number:**_____ **DOB:**_____ **Month:**_____.

OMISSION CODE	DRUGS NOT ADMINISTERED ENTER THE APPROPRIATE CODE IN THE ADMINISTRATION BOX		
	1. NIL BY MOUTH	5. PATIENT'S CONDITION TOO POOR	9. ON INSULIN SLIDING SCALE
	2. REFUSED	6. DRUG INCORRECTLY PRESCRIBED	10. OTHER
	3. DRUG NOT AVAILABLE	7. SELF ADMINISTRATION	
	4. PATIENT UNAVAILABLE	8. OMITTED ON DR'S INSTRUCTION	

Target CBG (mmol/L)		Pre-meal blood glucose target for this patient is.....mmol/L												Year:	
Frequency of blood glucose monitoring		Pre-breakfast				Pre-lunch				Pre-dinner				Bedtime	
Date															
Time															
Nurse's initials															
Blood glucose value (mmol/L)															
		<div> <div>→ 25</div> <div>20</div> <div>15</div> <div>10</div> <div>5</div> <div>4</div> <div>3</div> <div>← 2</div> </div>													
		Capillary blood glucose (CBG) mmol/L													

Ketones			
Date			
Time			
Urinary ketones ++			
Blood ketones mmol/L			
Initials			