

INSULIN/ GLUCOSE for HYPERKALAEMIA only

Presentation

Soluble insulin (Actrapid®) 100 units in 1 ml
 Glucose 10%, glucose 20% or glucose 50% 500 ml bag

Prescribing

First administer of 0.5 ml/kg of calcium gluconate 10% (to max 20 ml).
 Under 14 years old: dose of insulin is 0.1unit/kg with 1 g/kg of glucose simultaneously over 10 minutes.
 14 years and over: dose of insulin is 10 units insulin in 50ml glucose 50%.
 Prescribe on the once only section of the drug chart.

Storage

Insulin stored in fridge
 Glucose infusion bags stored at room temperature

Preparation/ Dilution

Draw 1ml of 100 units in 1 ml insulin into an insulin syringe and make up to 10 ml using sodium chloride 0.9%. This gives a 10 unit in 1 ml solution. Then dilute this insulin (10 units in 1ml) with **one** of the glucose strength options below. Select next step based on the volume to give patient and type of IV access available. (see Route of Administration below)

Using 50% glucose 500 ml
 1.) Add 25 units of insulin to 500 ml. Label and shake well.
 2.) Run 2 ml/kg of this solution over 10 minutes via central line if available.

Using 20% glucose 500 ml
 1.) Add 10 units of insulin to 500 ml. Label and shake well.
 2.) Run 5 ml/kg of this solution over 10 minutes via central line if available.

Using 10% glucose 500 ml
 1.) Add 5 units of insulin to 500 ml. Label and shake well.
 2.) Run 10 ml/kg of this solution over 10 minutes

If volume to be given is less than 50 ml, transfer the insulin/glucose solution to a syringe and give via syringe pump.

Route of Administration

Central Administration Required	Central Administration Preferred <small>(only give peripherally if central access not available)</small>	Central or Peripheral Administration Acceptable
Insulin in Glucose 50%	Insulin in Glucose 20%*	Insulin in Glucose 10%

*If there is only peripheral access, insulin/glucose 20% may be given peripherally due to the urgency of treatment.

Rate of Administration
 Over 10 minutes

Stability
 Use immediately.

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Flushes

Sodium chloride 0.9%

Common compatibilities at terminal Y-site

IV maintenance solution containing glucose/sodium chloride.

Monitoring/ Other comments

Blood sugars must be monitored before, during and after infusion. Check the blood sugar level 5 minutes after completing the infusion, then every 15 mins for the first hour, then hourly for a further 3 hours if stable. Watch for late hypoglycaemia.

ECG monitoring will be set up in advance, continue this monitoring during and for 4 hours after infusion.

Potassium levels should be re-checked immediately post infusion and at regular intervals for four to six hours.

Ensure all potassium containing products are withheld, until full medical review.

Extravasation risk

Glucose	Hyperosmolar	Extreme of pH	Vasoactive	Vesicant
10%	No	pH 3-5	No	No
20%	Yes			
50%	Yes			

Calculation example

6 kg infant with potassium of 6.7 mmol/L with ECG changes.

0.5 ml/kg of calcium gluconate 10% stat given, needs insulin 0.6 units with 6 g glucose over 10 minutes. Infant only has peripheral access and is not fluid restricted

Prescribe as follows on the once only part of the drug chart.

PRESCRIPTION FC

Date and Time to be given	Medicine (Approved Name)	Dose	Route	S
1/5 09:00	INSULIN with	0.6 units	IV	
1/5 09:00	GLUCOSE 10%	6 grams	IV	
Follow insulin for hyperkalamaemia monograph for preparation. Give over 10 minutes				

Administer as follows:

Transfer 100 units in 1ml insulin from insulin syringe into 10 ml syringe and make up to 10 ml using sodium chloride 0.9%.

Add 0.5 ml of the diluted insulin solution to a 500 ml bag of glucose 10%.

Label as per Trust policy. Set pump to run at 360 ml/ hour for 10 minutes only. Ensure blood sugar and potassium level is re-checked within 5 minutes of completing infusion.