

# 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. (1g/kg glucose = 10ml/kg 10%, 5ml/kg 20% or 2ml/kg 50% glucose.  
 14 years and over: dose of insulin is 10 units insulin in 50ml glucose 50% or if no central access add 10 units to 125ml glucose 20%.  
 Prescribe on the once only section of the drug chart.

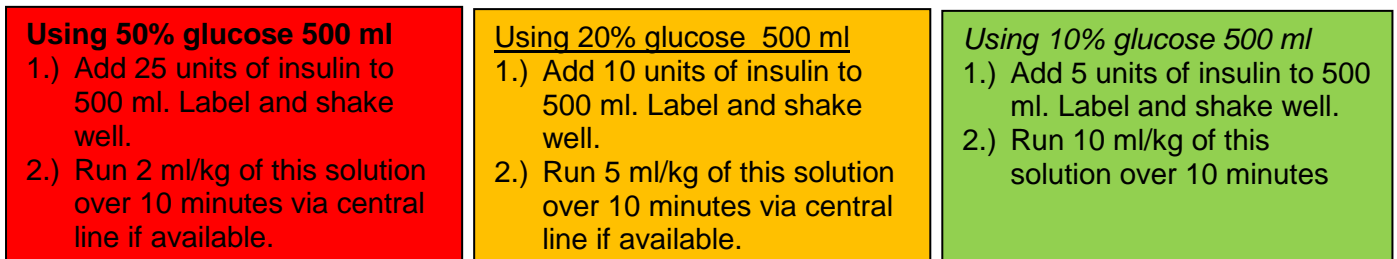
## Storage

Insulin stored in fridge  
 Glucose infusion bags stored at room temperature

## Preparation/ Dilution

**ALWAYS USE AN INSULIN SYRINGE**

Under 14 years old: Using an **insulin syringe**, draw 1ml of 100 units in 1 ml insulin 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)



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

**14 years and over:** Using an **insulin syringe**, add 10 units to either 50ml glucose 50% or 125ml glucose 20%

## Route of Administration

| Central Administration Required | Central Administration Preferred<br>(only give peripherally if central access not available) | 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.

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## Rate of Administration

Over 10 minutes

## Stability

Use immediately.

## 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    |   |
| <b>Follow insulin for hyperkalamaemia monograph for preparation. Give over 10 minutes</b> |                          |           |       |   |

## 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% to give 10 units in 1ml insulin.

Add 0.5 ml of the diluted 10 units in 1ml 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.