

## NEONATAL MEDICATION PROTOCOLS

**INSULIN SHORT-ACTING**  
Created by: NCCU  
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NCCU Clinical Guidelines  
KEMH/PMH  
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|--------------------------------|--|
| <b>DRUG:</b>                   | <b>INSULIN SHORT-ACTING (ACTRAPID®/HUMULIN R®)</b>   |
| <b>PRESENTATION:</b>           | Vial: 100units/mL 10mL vial  |
| <b>ACTION &amp; INDICATION</b> | A pancreatic hormone. It promotes cellular uptake of glucose, fatty acids and amino acids, and their conversion to storage forms in most tissues.<br>Used for:<br>Hyperglycaemia due to diabetes or other causes<br>Hyperkalaemia: to reduce blood potassium levels  |
| <b>DOSE:</b>                   | <b>Intermittent dose:</b><br>SC: 0.05-0.2 units/kg/dose 6 to 12 hourly<br><b>Infusion:</b><br>0.01-0.1units/kg/hour<br><b>Prescription for infusion:</b><br>3 units/kg to be added to 0.9% Normal Saline to make the final volume to 30 ml.<br>Infusion rate: 0.1-1 ml/hour (0.01-0.1 units/kg/hour)   |
| <b>PREPARATION:</b>            | Use solution prepared by Pharmacy (CIVAS) .<br>If unavailable prepare solution as follows.<br><b>Step1:</b> Draw up 50units (0.5mL) from vial and dilute to 50mL with Water for Injections or 0.9% Sodium Chloride. The resulting solution contains 50 units in 50mL (1 unit in 1mL)<br><br><b>Step 2 :</b> Draw up 3 units/kg (3mL/kg) from the solution prepared in Step 1 and dilute it to 30mL using 0.9% Sodium Chloride . The resulting solution will contain 0.1unit/kg/mL.<br><br><b>Step 3:</b> Commence infusion. Usual rate at commencement is 0.01 units/kg/hour (0.1 mL/hour).<br><br><b>Titrate the infusion based on blood glucose levels.</b><br><br><b>If a more concentrated solution is required (eg for subcutaneous injection):</b><br>Draw up 50 units of 100 units/mL strength (0.5mL) and dilute to 10mL with Water for Injections. <b>0.5units in 0.1mL</b> |
| <b>ADMINISTRATION:</b>         | Intravenous infusion via syringe pump.<br>To prime the line for IV infusion, make up twice the volume of the fluid required. Prime the line, wait 20 minutes, then discard contents in line. Re-prime the line and infusion is then ready to commence.<br>Subcutaneous: As per NCCU policy   |
| <b>ADVERSE EFFECTS:</b>        | Hypoglycaemia.<br>Close monitoring of plasma glucose levels is mandatory   |
| <b>COMMENTS:</b>               | Albumin 0.3g/100mL may be added to infusion solutions containing insulin to reduce absorption to plastic<br>Due to the risk of precipitation in pump catheters, Actrapid should not be used in insulin pumps for continuous subcutaneous infusion<br>Discard excess solution immediately   |
| <b>REFERENCES:</b>             | Australian Injectable drugs handbook 5 <sup>th</sup> edition<br>Neofax 2013  |
| <b>DATE:</b>                   | September 2013   |