

# Paeds/Neonates: Glucagon

Reference No: MONO-PAEDS/2043/23

Presentation:	1 mg powder and solvent for solution for injection – stored in the fridge
Indication:	Treatment of endogenous hyperinsulinism
Dose:	<p><b>By intramuscular injection, or by intravenous injection:</b></p> <p><b>Neonate:</b> 200micrograms/kg (max 1mg per dose) for 1 dose  <b>Child 1 month – 1 year:</b> 1mg for 1 dose</p> <p><b>By continuous intravenous infusion:</b></p> <p><b>Neonate:</b> 1-18 micrograms/kg/hour (max 50micrograms/kg/hour), adjusted according to response  <b>Child 1 month – 1 year:</b> 1-10 micrograms/kg/hour, adjusted according to response</p>
Route of administration:	<p>Bolus dose by IV or IM injection or via continuous IV infusion.</p> <p>IV doses ideally administered via central line as solution has low pH and may cause venous irritation and tissue damage if extravasated.</p>
Instructions for preparation and administration:	<p><b>IV injection:</b></p> <p>Inject 1.1mL water for injections (from the prefilled syringe provided) into the contents of the vial containing the glucagon to obtain a 1mg in 1mL glucagon solution and administer over 3-5 minutes.</p> <p><b>Continuous Intravenous Infusion:</b></p> <p>Reconstitute 1mg vial with manufacturers diluent as above and dilute to a total final volume of 25mLs with sodium chloride 0.9%. This will provide <b>10micrograms/kg/hour</b> when run at <b>0.25mL/kg/hour</b></p> <p><b>Syringes should be changed every 24 hours and the solution monitored for signs of increased viscosity/precipitation**</b></p> <p><i>**Do not use the reconstituted solution if it is not clear</i></p>
Prescribing	<b>QHB-</b> Prescribe on Meditech

<p><b>RDH</b> <b>Neonates:</b> prescribe on paper chart as below.</p> <p>E.g. for a 2.5kg neonate</p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Drug amount in syringe</th> <th>Diluent</th> <th>Total volume (ml)</th> <th>Route</th> </tr> </thead> <tbody> <tr> <td>Glucagon</td> <td>1mg</td> <td>sodium chloride 0.9%</td> <td>25ml</td> <td>IV</td> </tr> <tr> <th>Start date</th> <th>Drug concentration per ml</th> <th>Infusion range</th> <th>Min</th> <th>Max</th> <th>Name, Sig, Bleep</th> </tr> <tr> <td>22/5/19</td> <td>0.04mg/ml</td> <td>Dose/kg/time</td> <td>1 microgram/kg/hour</td> <td>50 microgram/kg/hour</td> <td>A.Doctor</td> </tr> <tr> <th>Pharm</th> <td></td> <th>ml/hr</th> <td>0.0625</td> <td>3.125</td> <td>#1234</td> </tr> </tbody> </table> <p><b>Paediatrics:</b> Prescribe on Lorenzo EPMA as 'see paper prescription' then prescribe on paper chart as below.</p> <p>E.g. for 15kg child:</p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Drug amount in syringe</th> <th>Diluent</th> <th>Total volume (ml)</th> <th>Route</th> </tr> </thead> <tbody> <tr> <td>Glucagon</td> <td>1mg</td> <td>sodium chloride 0.9%</td> <td>25ml</td> <td>IV</td> </tr> <tr> <th>Start date</th> <th>Drug concentration per ml</th> <th>Infusion range</th> <th>Min</th> <th>Max</th> <th>Name, Sig, Bleep</th> </tr> <tr> <td>22/5/19</td> <td>0.04mg/ml</td> <td>Dose/kg/time</td> <td>1 microgram/kg/hour</td> <td>10 microgram/kg/hour</td> <td>A.Doctor</td> </tr> <tr> <th>Pharm</th> <td></td> <th>ml/hr</th> <td>0.375</td> <td>3.75</td> <td>#1234</td> </tr> </tbody> </table>						Drug	Drug amount in syringe	Diluent	Total volume (ml)	Route	Glucagon	1mg	sodium chloride 0.9%	25ml	IV	Start date	Drug concentration per ml	Infusion range	Min	Max	Name, Sig, Bleep	22/5/19	0.04mg/ml	Dose/kg/time	1 microgram/kg/hour	50 microgram/kg/hour	A.Doctor	Pharm		ml/hr	0.0625	3.125	#1234	Drug	Drug amount in syringe	Diluent	Total volume (ml)	Route	Glucagon	1mg	sodium chloride 0.9%	25ml	IV	Start date	Drug concentration per ml	Infusion range	Min	Max	Name, Sig, Bleep	22/5/19	0.04mg/ml	Dose/kg/time	1 microgram/kg/hour	10 microgram/kg/hour	A.Doctor	Pharm		ml/hr	0.375	3.75	#1234
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Known compatibility issues	<p>See medusa for separate IV compatibility table. Do not infuse with any other medicines.</p> <p><b>Note:</b> When administered by <i>continuous intravenous infusion</i>, do not add to infusion fluids containing calcium—precipitation may occur.</p>																																																												
Additional Comments:	<ul style="list-style-type: none"> <li>Monitor potassium and calcium regularly due to risk of hypokalaemia/hypocalcaemia. Monitor blood glucose and U&amp;E's.</li> <li>IV injection: flush with sodium chloride 0.9%</li> <li>IV infusion: Disconnect the infusion set and aspirate the cannula contents <b>before</b> flushing with sodium chloride 0.9% (or compatible diluent).</li> </ul>																																																												

Note: The contents of this monograph should be read in conjunction with information available in the BNFC and Medusa

**References:**

British National Formulary for Children accessed via [www.bnfc.nice.org.uk/drug/glucagon.html#indicationsAndDoses](http://www.bnfc.nice.org.uk/drug/glucagon.html#indicationsAndDoses) on 30/11/23

GlucaGen Hypokit 1 mg Novo Nordisk SPC, accessed via <https://www.medicines.org.uk/emc/product/1289/smpc> 30/11/23

Medusa Glucagon paediatric monograph accessed through <https://medusa.wales.nhs.uk/IVGuideDisplay.asp> on 30/11/23

IBM Micromedex accessed through <https://www.micromedexsolutions.com> on 30/11/23

Document control sheet

<b>GUIDELINE NUMBER</b>	CG-PAEDS/2017/002
<b>AREA IN WHICH THIS MONOGRAPH APPLIES</b>	Paeds/NICU

<b>DIVISIONAL AUTHORISATION</b>	
<b>GROUP</b>	<b>DATE</b>
Paediatric monograph review group	12/12/2023

<b>AUTHORS</b>		
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If review:

	<b>Position</b>	<b>Date</b>
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Checked by:	Lamia Ahmed, Advanced Prescribing Pharmacist- Women's and Children's	December 2023

Change history:

<b>Changes Reference</b>	<b>Change details</b>	<b>Date</b>
1	Updated and transferred to new template- Harriet Hughes	05/11/2019
2	Removal of pharmacy will prepare. QHB prescribing instructions added. Addition of monitoring instructions and flushing instructions	December 2023