

# NICU: Dinoprostone (Prostaglandin E2)

Reference No: CH PH N 23

Presentation:	0.75ml ampoule containing a 1mg/ml dinoprostone. Stored a refrigerator.																																			
Indication:	To maintain the patency of the ductus arteriosus																																			
Dose:	<p>Initially 5 nanograms/kg/minute</p> <ul style="list-style-type: none"> <li>increase in steps of 5 nanograms/kg/minute as required</li> <li>usual maximum 20 nanograms/kg/minute</li> <li>doses up to 100 nanograms/kg/minute have been used but are associated with increased side-effects</li> </ul> <p><b>WHERE POSSIBLE, IT IS RECOMMENDED THAT THERAPY IS STARTED OR STOPPED ONLY ON THE ADVICE OF A CARDIOLOGIST</b></p>																																			
Route of administration:	Continuous IV infusion only via SMART pump. Prostaglandin E2 should <u>never</u> be given as a bolus injection.																																			
Instructions for preparation and administration:	<p>Make an infusion of <b>1 microgram per ml</b>:</p> <ol style="list-style-type: none"> <li>Measure 0.5ml of 1mg/ml dinoprostone injection (500 micrograms)</li> <li>Add this to 500ml glucose 5% or sodium chloride 0.9%</li> <li>SHAKE THE BAG WELL to ensure thorough mixing. This solution contains <b>1 microgram/ml</b></li> <li>Withdraw 50ml from the bag into a luer lock syringe and infuse using a syringe pump</li> </ol> <p><b>Rate of infusion</b> (ml/hour) = 0.06 X Weight (kg) X Dose (nanograms/kg/minute)</p> <p>Infusions should be maintained at the lowest dose and for the shortest time required to achieve the desired clinical effect.</p> <p>The calculated infusion rate should be rounded to the nearest <b>0.1ml</b></p>																																			
Prescribing	<p><u>QHB</u>- Prescribe on Meditech <u>RDH</u>- Prescribe on paper chart</p> <p><u>Example prescription for a 2.5 kg neonate:</u></p> <p><b>Prescribe standard concentration of 1 microgram per mL</b></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>Dinoprostone</td> <td>50 micrograms</td> <td>glucose 5%</td> <td>50ml</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> </tr> <tr> <td>22/5/23</td> <td>1micrograms/ml</td> <td>Dose/kg/time</td> <td>5 nanograms/kg/min</td> <td>20 nanograms/kg/min</td> </tr> <tr> <th>Pharm</th> <td></td> <td>ml/hr</td> <td>0.75</td> <td>3</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td><i>A.Doctor</i></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td><i>#1234</i></td> </tr> </tbody> </table>	Drug	Drug amount in syringe	Diluent	Total volume (ml)	Route	Dinoprostone	50 micrograms	glucose 5%	50ml	IV	Start date	Drug concentration per ml	Infusion range	Min	Max	22/5/23	1micrograms/ml	Dose/kg/time	5 nanograms/kg/min	20 nanograms/kg/min	Pharm		ml/hr	0.75	3					<i>A.Doctor</i>					<i>#1234</i>
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Directions for administration via SMART pump	<ul style="list-style-type: none"> <li>Load Syringe, prime line using the pump for accurate dosing.</li> <li>Open 'NICU' folder then open 'dinoPROstone' programme.</li> <li>Enter Babys weight in kg and confirm</li> <li>Enter the dose in <b>nanograms/kg/min</b></li> <li>Visually confirm the rate (ml/h) against the prescribed dose (nanograms/kg/min)</li> <li>Perform STOP moment with medical team (Pump against prescription)</li> <li>Connect to Baby</li> <li>Press start button</li> </ul>																																			

Known compatibility issues	See separate compatibility chart.
Side-effects	<p><b>If apnoeas, bradycardia or severe hypotension occur:</b></p> <p>Temporarily discontinue infusion (intubation and ventilation may be necessary) and restart infusion with caution at a reduced dose.</p> <p><b>If pyrexia occurs:</b></p> <p>Reduce incubator temperature.</p>
Additional Comments:	<p><b>Discard solution after 24 hours.</b></p> <p>Monitor heart rate, blood pressure (in the arm and leg), respiratory rate, urine output, temperature and blood gases.</p> <p>Use with caution if history of haemorrhage.</p> <p>Dinoprostone should be avoided in active renal or hepatic disease. Avoid in hyaline membrane disease (in neonates)</p> <p>Use caution when handling to avoid contact with the skin. Wash hands thoroughly after preparation</p>

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 Last accessed: 01/12/23

Medicines for Children, 2003 Last accessed: 01/12/23

Medusa Injectable Medicines Guide - Display - Dinoprostone - Intravenous - Version 7 - IVGuideDisplayMain.asp (medusaimg.nhs.uk). Accessed 01/12/23

SPC, Prostin E2 Sterile Solution 1mg/ml Intravenous, accessed via [www.medicines.org.uk](http://www.medicines.org.uk) Last accessed: 01/12/23

### Document control sheet

<b>GUIDELINE NUMBER</b>	
<b>AREA IN WHICH THIS MONOGRAPH APPLIES</b>	NICU

DIVISIONAL AUTHORISATION	
GROUP	DATE
Paediatric monograph review group	

AUTHORS		
Author	Position	Date
Written by:	Mustafa Mohamed, Clinical Pharmacist	December 2016
Checked by:	Lisa Taylor, Specialist Paediatric Pharmacist	December 2016

If review:

	Position	Date
Reviewed by: Name	Harriet Hughes Advanced Pharmacist, Women's & Children's	November 2019
Updated by:	Ellie Cheale	December 2023
Checked by:	Lamia Ahmed Advanced Pharmacist Women's & Children's	December 2023

Change history:

Changes Reference	Change details	Date
1	Added QHB prescribing instructions	December 2023
2	<ul style="list-style-type: none"> <li>- Changed preparation instructions ***</li> <li>- Amended minimum rate of infusion to 0.8ml to correlate to rounding instructions.</li> <li>- Handling instructions added</li> </ul>	December 2023