

NICU: Ibuprofen

Presentation:	Pedea [®] brand - Solution for injection 5mg/mL, 2mL ampoules		
Indication:	Closure of haemodynamically significant patent ductus arteriosus in preterm new born infants less than 34 weeks of gestational age, after first six hours of life.		
Dose:	<p>Three IV doses 24 hours apart</p> <p>1st dose = 10 mg/kg (after the first 6 hours of life)</p> <p>2nd dose = 5 mg/kg</p> <p>3rd dose = 5 mg/kg</p> <p><i>*Caution - see monitoring information</i></p> <p>Contraindications:</p> <table border="1"> <tr> <td> <ul style="list-style-type: none"> • Thrombocytopenia (<100 x10⁹/L) • Suspected or confirmed NEC • Active bleeding/coagulation defects • Life threatening infection • Hyperbilirubinaemia </td> <td> <ul style="list-style-type: none"> • PPHN - Ibuprofen may cause or exacerbate pulmonary hypertension • Other congenital heart lesions which may be duct dependent • Anuria or marked oliguria • Significant impairment of renal function </td> </tr> </table>	<ul style="list-style-type: none"> • Thrombocytopenia (<100 x10⁹/L) • Suspected or confirmed NEC • Active bleeding/coagulation defects • Life threatening infection • Hyperbilirubinaemia 	<ul style="list-style-type: none"> • PPHN - Ibuprofen may cause or exacerbate pulmonary hypertension • Other congenital heart lesions which may be duct dependent • Anuria or marked oliguria • Significant impairment of renal function
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Route of administration:	Intravenous infusion to be given over 15 minutes using SMART pump**		
Instructions for preparation and administration:	<p>Give undiluted as a short IV infusion.</p> <p>Can further dilute with glucose 5% or sodium chloride 0.9% if injection volume is too small to infuse</p> <p><i>**Administer through SMART pumps using- Neo/Paed-NICU- neonates I-L-Ibuprofen-VTBI-Total time 15mins</i></p>		
Prescribing	<p><u>RDH</u>: Prescribe on paper drug chart as per Trust prescribing policy.</p> <p><u>QHB</u>: Prescribe on Meditech</p> <p><u>Calculation example:</u></p> <p>To administer a dose of 10mg/kg of Ibuprofen to a 1.5kg neonate: Dose of Ibuprofen (mg/kg) = 10 (mg) x 1.5 (kg) = 15 mg</p>		

<p>Prescription example: 31 week gestation baby weighing 1.5kg – <i>loading dose</i></p>									
ONCE ONLY & FIRST DOSE URGENT MEDICATIONS									
Prescribed Date	Drug (Approved Name)	Dose	Route	Time to be Given	PRESCRIBER	ADMINISTERED BY			Pharm.
					Print & Sign	Date	Time	Initial	
20/12/2019	Ibuprofen	15mg	IV over 15 mins	ASAP	<i>A. Doctor</i>				
<p><u>Directions for administration in this example:</u></p> <p>Three ampoules would be required to ensure enough medication to prime the line and to administer the dose (3 mL). Remove overage. Administer through SMART pump as above. Once VTBI of 3 mL has been infused, flush slowly at entry site.</p> <p><i>Note: Must use neonate's actual working weight to determine dose and volume.</i></p>									
Known compatibility issues	Please see Medusa for compatibility information. The infusion line should be flushed over 15 minutes before and after ibuprofen administration to avoid contact with acidic solutions								
Monitoring	<p>Weight, Urine output, U&Es, Platelets, Bilirubin, Gastrointestinal function</p> <p>* If anuria or manifest oliguria occurs after the first or second dose, then the next dose should be withheld until the urine output returns to normal levels.</p> <p>As ibuprofen may decrease the clearance of aminoglycosides e.g. gentamicin, co-administration with ibuprofen should be avoided where possible or if essential ensure strict monitoring of serum levels.</p>								
Additional Comments:	<ul style="list-style-type: none"> Consider second course after 48-72 hours if symptomatic with abnormal heart scan <p>Note: Oral ibuprofen suspension (100mg/5mL) may be used for the treatment of PDA in babies who are tolerating enteral feeds and who do not have IV access (dosing as per IV dosing). There is limited data to support this however a recent Cochrane review concluded that oro-gastric administration of ibuprofen appears as effective as IV administration.</p>								

Commented [CT1]: i dont completely understand this? makes sense because the volume is so small - something to just double check with rachel?

Commented [CT2]: This makes complete sense because they both affect the kidneys, but cant find the mechanism with the clearance. shall it just say strict vanc and gent levels when using alongside ibuprofen? theyre already quite good at levels anyway arent they

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

References:

- Evelina London, accessed via <http://cms.ubqo.com/public/d2595446-ce3c-47ff-9dcc-63167d9f4b80/content/fb9e21eb-6c69-4fc3-bc18-e638e9655543> on 14/12/23
- Medusa Injectable Medicines Guide, accessed via <http://medusa.wales.nhs.uk> on 15/12/23
- CG&C Paediatric Guidelines, accessed via www.knowledge.scot.nhs.uk on 15/12/23
- BNFC, accessed via <https://bnfc.nice.org.uk/drug/ibuprofen> on 04-12-19 14/12/23
- West of Scotland ORAL/ OTHER ROUTE Drug Monographs, Neonatal Ibuprofen. Emailed by W.o.S trust on 15/12/23
- Ohlsson A, Walia R, Shah SS. Ibuprofen for the treatment of patent ductus arteriosus in preterm or low birth weight (or both) infants. Cochrane Database of Systematic Reviews 2020, Issue 2. Art. No.: CD003481. DOI: 10.1002/14651858.CD003481.pub8.

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AREA IN WHICH THIS MONOGRAPH APPLIES	Paeds/NICU

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Paediatric monograph review group	22/12/23

AUTHORS		
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Change history:

Changes Reference	Change details	Date
1	Addition of QHB prescribing. Deletion of compatibility chart and replaced with 'see Medusa'. Reformatting of design information	December 2023