

NICU: Midazolam (Status epilepticus)

Presentation:	Midazolam 5mg/ml solution for injection or infusion																																		
Indication:	Management of status epilepticus																																		
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NB. BNFC expresses dose as micrograms/kg/hr but SMART pumps take dose in micrograms/kg/min																																			
Route of administration:	Intravenous bolus and continuous intravenous infusion via SMART pump																																		
Instructions for preparation and administration:	<p>Preparation of midazolam syringe:</p> <ol style="list-style-type: none"> Measure 3mg/kg midazolam Dilute with glucose 5% or sodium chloride 0.9% to a final volume of 50ml 1 microgram/kg/min = 1 ml/hour 																																		
Prescribing	<p>Prescribe on paper drug chart (see below examples).</p> <p>To calculate concentration of infusion for SMART pumps (in micrograms/ml) divide total mg in infusion by total volume of infusion (ml) and multiply by 1000: <i>e.g.</i> 4.5mg in 50ml = $\frac{4.5\text{mg}}{50\text{ml}} = 0.09\text{mg/ml} \times 1000 = 90 \text{ micrograms/ml}$</p> <p><i>E.g. for a 1.5kg neonate</i></p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Drug amount in syringe</th> <th>Diluent</th> <th colspan="2">Total volume (ml)</th> <th>Route</th> </tr> </thead> <tbody> <tr> <td>Midazolam</td> <td>4.5mg</td> <td>Glucose 5%</td> <td colspan="2">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> <th>Name, Sig, Bleep</th> </tr> <tr> <td>12/10/20</td> <td>90 micrograms/mL</td> <td>Dose/kg/time</td> <td>1 micrograms/kg/min</td> <td>5 micrograms/kg/min</td> <td>Doctor ABC</td> </tr> <tr> <th>Pharm</th> <td></td> <th>ml/hr</th> <td>1</td> <td>5</td> <td>1234</td> </tr> </tbody> </table>					Drug	Drug amount in syringe	Diluent	Total volume (ml)		Route	Midazolam	4.5mg	Glucose 5%	50mL		IV	Start date	Drug concentration per ml	Infusion range	Min	Max	Name, Sig, Bleep	12/10/20	90 micrograms/mL	Dose/kg/time	1 micrograms/kg/min	5 micrograms/kg/min	Doctor ABC	Pharm		ml/hr	1	5	1234
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Y site compatibility	See separate Y site compatibility chart																																		
Instructions for SMART pump	<ul style="list-style-type: none"> Load Syringe, prime line using the pump for accurate dosing. Open 'NICU' folder then open 'Midazolam Status' programme. Using DATA chevrons amend/enter concentration in mcg/ml and confirm Enter Childs weight in kg Enter loading dose in mcg/kg (zero if not required) Confirm bolus time (To be given over minimum 5mins) Enter the dose in mcg/kg/min and confirm Visually confirm the rate (mls/h) against the prescribed dose (mcg/kg/min) Perform STOP moment with medical team (Pump against prescription) Connect to Child Press start button 																																		
Additional Comments:	Monitor heart rate, blood pressure, respiration rate, oxygen saturations and for symptoms of toxicity / accumulation.																																		

When used with opiates, potentiation of respiratory or cardiovascular depression may occur. Patients with hypovolaemia, vasoconstriction, or hypothermia are at risk of increased sedation.

Flumazenil is indicated for the reversal of benzodiazepine related sedation/respiratory depression, however it is contra indicated in status epilepticus.

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

References:

EMC SPC Available online: Midazolam 5 mg/ml Solution for Injection or Infusion,

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Document control sheet

GUIDELINE NUMBER	Midazolam - NICU, Version 2
AREA IN WHICH THIS MONOGRAPH APPLIES	NICU

DIVISIONAL AUTHORISATION	
GROUP	DATE
Paediatric monograph review group	12.02.2021
Clinical Director – Paediatric BU	27/04/2021
Divisional Clinical Governance Committee – Women & Children's	27/04/2021

AUTHORS		
Author	Position	Date
Written by: Harriet Hughes	Advanced Pharmacist Women's & Children's	12/11/2020
Checked by: Nicholas Urquhart	Specialist Pharmacist	25/11/2020

If review:

	Position	Date
Reviewed by: Name		
Updated and transferred to new template by:	Harriet Hughes Advanced Pharmacist Women's & Children's	14/10/2020

Change history:

Changes Reference	Change details	Date
	Separated from Paediatric Midazolam Status Monograph	12/11/20