

Paediatrics: Dobutamine

Presentation:	Solution for injection 5mg/ml, 50ml ampoules
Indication:	Inotropic support
Dose:	Neonate and Child: Initially 5 micrograms/kg/minute, then adjusted according to response to 2–20 micrograms/kg/minute, doses as low as 0.5–1 microgram/kg/minute have been used
Route of administration:	Continuous intravenous infusion via SMART pump preferably via central venous access device (if central venous access unavailable, give via large peripheral vein and do frequent VIP scoring)
Instructions for preparation:	<p>Preparation of syringe for CENTRAL LINE use: NB. Rate will vary with weight as using fixed concentrations. Do not use double or quadruple strength syringes.</p> <p>Patients <6.5kg:</p> <ul style="list-style-type: none"> • Measure 125mg dobutamine (25ml) • Dilute to a final volume of 50ml with glucose 5% or sodium chloride 0.9% • A dose of 5 microgram/kg/minute will be provided by a rate of $\frac{6 \times weight}{50}$ ml/hour <p>Patients ≥6.5kg:</p> <ul style="list-style-type: none"> • Measure 250mg dobutamine (50ml) • Does not require dilution • A dose of 5 micrograms/kg/minute will be provided by a flow rate of $\frac{3 \times weight}{50}$ ml/hr <p>Preparation of syringe for PERIPHERAL use in exceptional circumstances: Prepare a dobutamine 2mg/ml syringe:</p> <ul style="list-style-type: none"> • Measure 100mg dobutamine (20ml) • Dilute to a final volume of 50ml with sodium chloride 0.9% or 5% glucose • A dose of 5 microgram/kg/minute will be provided by a rate of $\frac{3 \times weight}{20}$ ml/hour • Extravasation can lead to necrosis and may necessitate amputation of the affected limb so the vein should be monitored regularly and VIP scored to facilitate early identification of extravasation <p>Dobutamine injection may turn pink due to a slight oxidation of the drug. Such solutions are safe to use as there is no significant loss of potency. Discard diluted dobutamine solution after 24 hours.</p>
Prescribing	<p><u>QHB</u>-Prescribe on Meditech <u>RDH</u>- Prescribe on paper chart</p> <p>To calculate concentration of infusion for SMART pumps, divide the amount of drug in the syringe by 50 to get mg/ml. e.g. $\frac{125\text{mg}}{50\text{ml}} = 2.5\text{mg/ml}$</p>

Example prescription for 5 kg infant:					
Drug	Drug amount in syringe	Diluent	Total volume (ml)		Route
<i>Dobutamine</i>	<i>125mg</i>	<i>Glucose 5%</i>	<i>50ml</i>		<i>LL</i>
Start date	Drug concentration per ml	Infusion range	Min	Max	Name, Sig, Bleep
<i>6/3/18</i>	<i>2.5mg/ml</i>	Dose/kg/time	<i>2micrograms/kg/min</i>	<i>20micrograms/kg/min</i>	<i>A.Doctor</i>
Pharm		ml/hr	<i>0.24ml/hr</i>	<i>2.4ml/hr</i>	<i>#1234</i>
Directions for administration via SMART pump		<ul style="list-style-type: none"> • Load Syringe, prime line using the pump for accurate dosing. • Open 'Children' folder then open 'doBUTamine' programme. • Using DATA chevrons enter concentration in mg/ml and confirm • Enter Childs weight in kg and confirm • Enter the dose in micrograms/kg/min • Visually confirm the rate (ml/h) against the prescribed dose (micrograms/kg/min) • Perform STOP moment with medical team (Pump against prescription) • Connect to Child • Press start button 			
Known compatibility issues		<p>Compatible: Adrenaline, Atracurium, Caffeine, Ceftazidime, Ciprofloxacin, Dopamine, Fluconazole, Furosemide (if in NS), Insulin, Midazolam, Morphine, Noradrenaline, Pancuronium, Potassium chloride, Ranitidine</p> <p>Incompatible: Aciclovir, Calcium salts, Heparin, Magnesium sulphate, Piperacillin/tazobactam, Sodium bicarbonate</p>			
Additional Comments:		<p>Tolerance may develop with continuous infusions longer than 72 hours requiring an increase in dose. Avoid abrupt withdrawal. Reduce dose gradually to avoid unnecessary hypotension.</p> <p>Ampoules of dobutamine contain sodium metabisulphite which can cause allergic type reactions, including anaphylactic symptoms</p>			

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

References:

CoMET dosing chart v 2021 02 10

British National Formulary for Children, accessed via www.medicinescomplete.com Accessed December 2023

SPC for accessed via www.medicines.org.uk Accessed December 2023

Medusa Injectable Medicines Guide, accessed via <http://medusa.wales.nhs.uk> Accessed December 2023

Trissel LA (Ed), Handbook on Injectable Drugs, accessed via www.medicinescomplete.com Accessed December 2023

Document control sheet

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DIVISIONAL AUTHORISATION	
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Paediatric monograph review group	12/12/2023

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	Position	Date
Reviewed by: Kevin Inglesant	Advanced Pharmacist Women's & Children's	October 2018
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Change history:

Changes Reference	Change details	Date
1	Updated concentration of dobutamine ampoules from 12.5mg/mL to 5mg/mL	25/7/18
2	Changed to fixed concentration infusion based on CoMET guideline	22/10/18
3	Prescribing instructions for QHB and RDH	December 2023