DOBUTAMINE HYDROCHLORIDE - PRESCRIBING AND ADMINISTRATION IN *SPECIFIC CRITICAL CARE AREAS AT ST GEORGE HOSPITAL

This drug information business rule is **NOT** a standing order.

*It only applies in the following units/departments – Intensive Care Units 1 and 2 (ICU and ICU2), Cardiothoracic Intensive Care Unit (CICU) and Coronary Care Unit (CCU).*

| Cross references (including NSW Health/ SESIAHS policy directives) | NSW Health Medication Handling in NSW Public Hospitals PD2013_043  
Australian Commission on Safety and Quality in Healthcare Guidelines for using the National Inpatient Medication Chart 7/2009 Medications Intravenous SGSHHS_CLIN115  
Labelling injectable medications SGSHHS_CLIN119 |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1. Accreditation requirements</td>
<td>Registered nurse who has completed specialist unit based education and accreditation as per Section 6.5.2 SGSHHS_CLIN115</td>
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<tr>
<td>2. Description/presentation</td>
<td>Dobutamine Hydrochloride 250mg in 20mLs vial</td>
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</table>
| 3. Indications | • Adults requiring short-term treatment of cardiac failure secondary to acute myocardial infarction, or cardiac surgery.  
• Dobutamine is a synthetic catecholamine primarily acting on beta receptors in the heart.  
• Increases stroke volume and cardiac output, decreases pulmonary artery wedge pressure and total systemic and pulmonary vascular resistance.  
• Increases coronary blood flow and myocardial oxygen supply. |
| 4. Contraindications and/or Precautions | Precautions  
• Hypovolaemia  
• Idiopathic hypertrophic subaortic stenosis |
| 5. Who is responsible | Nursing Co-director Critical Care and Emergency Nursing Co-director Medicine  
Medical Director of Intensive Care unit |
| 6. Process | 6.1 Preparation and Administration |

**Central Access** (2 x 250 mgs vials of Dobutamine)

- **500mg of Dobutamine in 100mLs 5% Dextrose** (withdraw 40mLs from 100mL bag of 5% Dextrose to end up with total volume = 100mLs)
- Final concentration 5 mg/mL (maximum concentration)

**Peripheral Access** (1 x 250 mgs vials of Dobutamine) (*long line preferable*)

- **250mg in 100mLs in 100mLs 5% Dextrose** (withdraw 20mLs from 100mL bag of 5% Dextrose to end up with total volume = 100mLs)
- Final concentration 2.5mg/mL

**Administration**

- Infuse via infusion pump at prescribed dose (recommended dose 2.5-10 microg/kg/min) and titrate according to response
Administration via a central line is recommended.

6.2 Nursing Care
- ECG and blood pressure should be continuously monitored
- In addition, pulmonary artery wedge pressure and cardiac output should be monitored whenever possible to aid in the safe and effective infusion of dobutamine.
- Potency of dobutamine may be decreased if the patient is given beta-adrenergic receptor antagonists, then the unopposed alpha-agonist effects of dobutamine may become apparent, including peripheral vasoconstriction and hypertension.
- Hypovolaemia should be corrected before treatment with dobutamine is instituted
- If using peripheral cannula, caution should be exercised for extravasation which may cause irritation, rash, flushing, reddening of the skin at the injection site and venous streaking.

6.3 Prescribing and Documentation
- Prescribed by Medical Officer on IV fluid/medication administration flow chart or Clinical Information System (CIS)
- Checked and prepared by 2 RNs following the 5 rights as per Section 6.4.3 NSW Health Medication Handling in NSW Public Hospitals PD2013_043
- A medication label must be added to bag/burette as per CLIN191 see cross references
- Adverse effects and nursing considerations (see APPENDIX 1) must be reported documented

7. Compliance evaluation

1. How many vials of dobutamine are required for 500mg dose
   A: 2

2. What is the final concentration?
   A: 5mg/mL for CVC and 2.5mg/mL for peripheral line

3. What is the maximum concentration?
   A: 5mg/mL

8. External references

I, Dawn Fowler Clinical Group Manager Medicine and Critical Care of SGSHHS attest that this drug information clinical business rule is not in contravention of any legislation, industrial award or policy directive.

Revision and approval history

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision number</th>
<th>Contact Officer (Position)</th>
<th>Date for revision</th>
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<tbody>
<tr>
<td>October 2013</td>
<td>0</td>
<td>Sarah Jones ICU CNC Suman Adhikari ICU Pharmacist</td>
<td>October 2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dr Kush Deshpande Deputy Director ICU</td>
<td></td>
</tr>
<tr>
<td>July 2014</td>
<td>1</td>
<td>Sarah Jones, CNC ICU &amp; G. Paull, CNC, Cardiology</td>
<td>July 2017</td>
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## Critical Care Medication Practice Guide

### Intravenous Drug Preparation Guideline

<table>
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<tr>
<th>Drug Name</th>
<th>Action / Indication</th>
<th>Presentation</th>
<th>Preparation</th>
<th>IV Administration</th>
<th>Adverse Effects</th>
<th>Comments / Nursing Considerations</th>
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| **Generic Dobutamine Hydrochloride** | Action: Dobutamine is a synthetic catecholamine primarily acting on beta receptors in the heart. It increases stroke volume and cardiac output, and decreases pulmonary artery wedge pressure and total systemic and pulmonary vascular resistances. It also increases coronary blood flow and myocardial oxygen supply.  
Indication: adults requiring short-term treatment of cardiac failure secondary to acute myocardial infarction, or cardiac surgery.  | 250mg in 20mLs liquid in vial. | 500mg of Dobutamine in 50mLs 5% Dextrose (withdraw 40mLs from 100mL bag of 5% Dextrose) | Final conc. no greater than 5 mg/mL. Infuse via infusion pump at prescribed dose, (recommended dose 2.5-10mcg/kg/min)  
Give via central line preferable. | Increase in heart rate or blood pressure  
Increased atrioventricular conduction  
Increases myocardial oxygen consumption  
Ectopic activity  
Skin rash, fever, eosinophilia and bronchospasm, have been reported occasionally. | * ECG and blood pressure should be continuously monitored  
* In addition, pulmonary artery wedge pressure and cardiac output should be monitored whenever possible to aid in the safe and effective infusion of dobutamine.  
* Potency of dobutamine may be decreased if the patient is given beta-adrenergic receptor antagonists, then the unopposed alpha-agonist effects of dobutamine may become apparent, including peripheral vasoconstriction and hypertension.  
* Hypovolaemia should be corrected before treatment with dobutamine is instituted |