**DEXMEDETOMIDINE HYDROCHLORIDE (HCL)**

**ACTIONS**
- Alpha2 adrenoreceptor agonist
- Sedative, analgesic and anaesthetic properties when given as a slow infusion

**INDICATIONS**
- Short term sedation in intubated and ventilated patients in Intensive Care

**DOSAGE & ADMINISTRATION**

Not to be given as bolus due to potent cardiac side effects

- Add Dexmedetomidine 200 microgram/2ml to 48mls 0.9% sodium
- **Final concentration 200 microgram /50ml = 4 microgram /ml**
- Administer as an IV infusion via an infusion pump

Continuous infusion may be used for more than 24 hours at the discretion of the ICU consultant

- Dexmedetomidine dose is individualised and titrated to the desired effect
- Loading dose **may not be necessary** if patient is already sedated with hypnotics and/or analgesics
- If loading dose is required, infuse dose over 10-20 minutes then change to maintenance infusion rate

**Loading Dose**

Loading dose = 1 microgram/kg

Infuse ml/ hour over 10-20 minutes

**Guide for loading dose:**

<table>
<thead>
<tr>
<th>Patient Body Weight (kg)</th>
<th>Loading dose infusion volume ml/ hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>40kg</td>
<td>10ml</td>
</tr>
<tr>
<td>50kg</td>
<td>12.5ml</td>
</tr>
<tr>
<td>60kg</td>
<td>15ml</td>
</tr>
<tr>
<td>70kg</td>
<td>17.5ml</td>
</tr>
<tr>
<td>80kg</td>
<td>20ml</td>
</tr>
<tr>
<td>90kg</td>
<td>22.5ml</td>
</tr>
<tr>
<td>100kg</td>
<td>25ml</td>
</tr>
<tr>
<td>110kg</td>
<td>27.5ml</td>
</tr>
<tr>
<td>120kg</td>
<td>30ml</td>
</tr>
</tbody>
</table>

Check compatibility before administering with other medications

**IMPORTANT:** This is a guideline ONLY, for more detailed information please refer to: MIMS, Mircomedex, and The Australian Injectable Drug Handbook, Australian Medicines Handbook.
CRGH ICU Drug Guideline: This guideline is written for use in the ICU only

**Maintenance Infusion**
0.2-1 microgram/kg/hr

- Titrate infusion to achieve the desired clinical effect after 5 - 10 minutes of the start
- As a guide, it is recommended that 0.4 microgram/kg/hr should be the initial maintenance infusion
- The rate of infusion can be increased in increments of 0.1 microgram/kg/hr or higher

**GUIDE for Maintenance infusion:**

<table>
<thead>
<tr>
<th>Patient Weight</th>
<th>0.20</th>
<th>0.30</th>
<th>0.40</th>
<th>0.50</th>
<th>0.60</th>
<th>0.70</th>
<th>Patient Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>40kg</td>
<td>2ml/hr</td>
<td>3ml/hr</td>
<td>4ml/hr</td>
<td>5ml/hr</td>
<td>6ml/hr</td>
<td>7ml/hr</td>
<td>40kg</td>
</tr>
<tr>
<td>50kg</td>
<td>2.5ml/hr</td>
<td>3.75ml/hr</td>
<td>5ml/hr</td>
<td>6.25ml/hr</td>
<td>7.5ml/hr</td>
<td>8.75ml/hr</td>
<td>50kg</td>
</tr>
<tr>
<td>60kg</td>
<td>3ml/hr</td>
<td>4.5ml/hr</td>
<td>6ml/hr</td>
<td>7.5ml/hr</td>
<td>9ml/hr</td>
<td>10.5ml/hr</td>
<td>60kg</td>
</tr>
<tr>
<td>70kg</td>
<td>3.5ml/hr</td>
<td>5.25ml/hr</td>
<td>7ml/hr</td>
<td>8.75ml/hr</td>
<td>10.5ml/hr</td>
<td>12.25ml/hr</td>
<td>70kg</td>
</tr>
<tr>
<td>80kg</td>
<td>4ml/hr</td>
<td>6ml/hr</td>
<td>8ml/hr</td>
<td>10ml/hr</td>
<td>12ml/hr</td>
<td>14ml/hr</td>
<td>80kg</td>
</tr>
<tr>
<td>90kg</td>
<td>4.5ml/hr</td>
<td>6.75ml/hr</td>
<td>9ml/hr</td>
<td>11.25ml/hr</td>
<td>13.5ml/hr</td>
<td>15.75ml/hr</td>
<td>90kg</td>
</tr>
<tr>
<td>100kg</td>
<td>5ml/hr</td>
<td>7.5ml/hr</td>
<td>10ml/hr</td>
<td>12.5ml/hr</td>
<td>15ml/hr</td>
<td>17.5ml/hr</td>
<td>100kg</td>
</tr>
<tr>
<td>110kg</td>
<td>5.5ml/hr</td>
<td>8.25ml/hr</td>
<td>11ml/hr</td>
<td>13.75ml/hr</td>
<td>16.5ml/hr</td>
<td>19.25ml/hr</td>
<td>110kg</td>
</tr>
<tr>
<td>120kg</td>
<td>6ml/hr</td>
<td>9ml/hr</td>
<td>12ml/hr</td>
<td>15ml/hr</td>
<td>18ml/hr</td>
<td>21ml/hr</td>
<td>120kg</td>
</tr>
</tbody>
</table>

**MONITORING**
Continuous ECG monitoring, Heart rate, Blood pressure and Oxygen saturation

**ADVERSE REACTIONS**
- Hypotension, bradycardia
- Hypertension during the loading dose
- Nausea, dry mouth, somnolence

**CONTRAINDICATION**
- Known hypersensitivity to Dexmedetomidine

**PRECAUTIONS**
- Advanced heart block
- Bradycardia
- Ventricular dysfunction
- Cardiac failure
- Dose reduction may be required in patients with hepatic impairment
- Hypovolemic patients will need fluid supplementation prior to use of dexmedetomidine
- Co-administration of dexmedetomidine could lead to enhancement of effects of anaesthetics, sedatives, hypnotics and opioids. Reduction of the dose may be required

**COMPATABILITY**
- 0.9%, Sodium Chloride, 5% glucose

**INCOMPATIBILITY**
- AmphotericinB, Diazepam, Pantoprozole, Phenytoin

**TRADE NAMES**
- Precedex 200 microgram/2mL

**REFERENCES:**
- MIMS Online, CIAP: NSW HEALTH Department; Copyright MIMS Australia 2011; Australian Injectable Drugs Handbook 3rd Edition; Hospira Product information Precedex®; Liverpool Hospital Intensive care Drug administration protocol Dexmedetomidine hydrochloride (Precedex); RPAH Intensive care Drug administration protocol Dexmedetomidine HCl; Shehabi, Y., Nakae, H., Hammond, N., Bass, F., Nicholson, L. and Chen, J. 2010. The effect of...
<table>
<thead>
<tr>
<th>Drug</th>
<th>Usage</th>
</tr>
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<tbody>
<tr>
<td>Dexmedetomidine</td>
<td>on agitation during weaning of mechanical ventilation in critically ill patients. Anaesthesia Intensive Care, 38, 82-90</td>
</tr>
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</table>

**REVISED BY:**
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