## PICU Drug Infusions

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose range</th>
<th>1ml/hr =</th>
<th>Add to 50ml</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrenaline (inf)</td>
<td>0.1-2.0 mcg/kg/min</td>
<td>0.1 mcg/kg/min</td>
<td>0.3 mg x wt</td>
<td>Intravenous, intraosseous. Always via CENTRAL line. In 5% dex or 0.9% N/S</td>
</tr>
<tr>
<td>Aminophylline (inf)</td>
<td>1 mg/kg/hr</td>
<td>1 mg/hr</td>
<td>x wt</td>
<td>Load 5mg/kg unless previous aminophylline. FIXED concentration mg/ml. Dose reduced infusion with age. Therapeutic range 10-20mg/l. Toxic tachycardia, jittery, seizures. Dilute in 5% dex</td>
</tr>
<tr>
<td>Amiodarone (inf)</td>
<td>5-15 mcg/kg/min</td>
<td>5 mcg/kg/min</td>
<td>15 mg x wt</td>
<td>Load 25mcg/kg/min for 4 hrs if no previous amiodarone. Baseline thyroid and liver functions. Only dilute in 5% dex. Not &lt;600mcg/ml. Max 1.2g/24hrs. Baseline eye exam /TFT</td>
</tr>
<tr>
<td>Dobutamine (inf)</td>
<td>5-20 mcg/kg/min</td>
<td>10 mcg/kg/min</td>
<td>30 mg x wt</td>
<td>Vasodilatation and tachycardia. Central administration preferred if &gt;5mg/ml.</td>
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<tr>
<td>Dopamine (inf)</td>
<td>5-20 mcg/kg/min</td>
<td>10 mcg/kg/min</td>
<td>30 mg x wt</td>
<td>Central administration recommended. For peripheral administration 3x wt in mg (maximum 1.6mg/ml). Dilute in 5% dex or 0.9% N/S.</td>
</tr>
<tr>
<td>Esmolol (inf)</td>
<td>25-200 mcg/kg/min</td>
<td>x wt</td>
<td>Loading dose 500mcg/kg over 1 minute. Dilute to 10mg/ml through large bore vein. Dilute in 5% dex or 0.9% N/S. Recommended max concentration 20mg/ml (central administration). Extravasation risk.</td>
<td></td>
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<tr>
<td>Fentanyl (inf)</td>
<td>1-5 mcg/kg/hr</td>
<td>1 mcg/kg/hr</td>
<td>50 mcg x wt</td>
<td>Usual dose 1 - 3 mcg/kg/hr. Cumulative effect. Risk of rigid chest in neonates. Discuss with consultant. Dilute in 5% dex or 0.9% N/S.</td>
</tr>
<tr>
<td>Furosemide (inf)</td>
<td>0.1-1 mg/kg/hr</td>
<td>0.2 mg/kg/hr</td>
<td>10 mg x wt</td>
<td>Dilute in 0.9% N/S only. For concentrated infusions 50 x wt in mg – 1mg/kg/hr= 1 ml/hr. Incompatible with most common infusions</td>
</tr>
<tr>
<td>GTN (Glycerine trinitrate) (inf)</td>
<td>1-5 mcg/kg/min</td>
<td>1 mcg/kg/min</td>
<td>3 mg x wt</td>
<td>Tachyphylaxis may occur after 24 hrs. Recommended maximum concentration 400mcg/ml. In fluid restricted patients 1mg/ml centrally</td>
</tr>
<tr>
<td>Heparin (inf)</td>
<td>10-30 units/kg/hr</td>
<td>20 units/kg/hr</td>
<td>1000 units x wt</td>
<td>Use APTT to direct therapy. Load 75units/kg. Start infusion at 20 units/kg/hr</td>
</tr>
<tr>
<td>Insulin (inf)</td>
<td>0.01-0.2 u/kg/hr</td>
<td>0.05 u/kg/hr</td>
<td>2.5 units x wt</td>
<td>Dilute in 0.9% N/S only. Monitor glucose every 30 - 60 minutes at commencement.</td>
</tr>
<tr>
<td>Isoprenaline (inf)</td>
<td>0.02-1 mcg/kg/min</td>
<td>0.2 mcg/kg/min</td>
<td>0.6 mg x wt</td>
<td>Neonates max 0.2 mcg/kg/min. Maximum for bradycardia 0.5mcg/kg/min. Up to 1mcg/kg/min for heart block. S/E Hypotension. Dilute in 5% dex or 0.9% N/S.</td>
</tr>
<tr>
<td>Ketamine (inf)</td>
<td>10-45 mcg/kg/min</td>
<td>10 mcg/kg/min</td>
<td>30 mg x wt</td>
<td>Anaesthetic, sialogogue. Hallucinations &amp; emergence reactions worse in older children</td>
</tr>
<tr>
<td>Labetalol (inf)</td>
<td>0.5-3 mg/kg/hr</td>
<td>1 mg/kg/hr</td>
<td>50 mg x wt</td>
<td>Neonates start at 500mcg/kg/hr. Hypertensive crisis. Start slowly. Avoid rapid reduction BP. Dilute in 5% dex or 0.9% N/S.</td>
</tr>
<tr>
<td>Midazolam (inf)</td>
<td>0.5-20 mcg/kg/min</td>
<td>1 mcg/kg/min</td>
<td>3 mg x wt</td>
<td>Sedation at lower end of range. Seizure control higher doses. Cardiovascular depression. Dilute in 5% dex or 0.9% N/S.</td>
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<tr>
<td>Milrinone (inf)</td>
<td>0.3-0.75 mcg/kg/min</td>
<td>0.5 mcg/kg/min</td>
<td>1.5 mg x wt</td>
<td>Phosphodiesterase inhibitor. Vasodilator &amp; inotrope. Dose reduction in renal/liver dysfunction. Dilute in 5% dex or 0.9% N/S. May be administered centrally undiluted in fluid restriction.</td>
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<tr>
<td>Morphine (inf)</td>
<td>5-100 mcg/kg/hr</td>
<td>20 mcg/kg/hr</td>
<td>1 mg x wt</td>
<td>Bigger children may need higher doses for a few hours. Dilute in 5% dex or 0.9% N/S.</td>
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<tr>
<td>Noradrenaline (inf)</td>
<td>0.1-1 mcg/kg/min</td>
<td>0.1 mcg/kg/min</td>
<td>0.3 mg x wt</td>
<td>Dilute in 5% dex or 0.9% N/S. Potent vasopressor. Administer centrally</td>
</tr>
<tr>
<td>Propofol 1% (inf)</td>
<td>1-4 mg/kg/hr</td>
<td>10 mg/hr</td>
<td>0 mg x wt</td>
<td>1% = 1 kCal/ml in lipid. Use undiluted. Prolonged or high dose infusion associated with propofol syndrome (lactic acidosis and tachycardia)</td>
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<tr>
<td>Prostin (inf)</td>
<td>5-100 ng/kg/min</td>
<td>10 ng/kg/min</td>
<td>30 mcg x wt</td>
<td>Dinoprostone. NANOGRAMS. Dosing up to 100ng/kg/min for 30-60 mins. Apnoea common in first 24hrs. S/E hypotension, flushing, diarrhoea, low grade temperature. Dilute in 5% dex or 0.9% N/S</td>
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<tr>
<td>Salbutamol (inf)</td>
<td>1-5 mcg/kg/min</td>
<td>0.5 mcg/kg/min</td>
<td>1.5 mg x wt</td>
<td>Dilute in 5% dex or 0.9% N/S. Preferable dilution is 25mg/50ml. Central administration if possible.</td>
</tr>
<tr>
<td>Sodium bicarbonate 8.4% (inf)</td>
<td>1-2 mmol/kg/hr</td>
<td>1 mmol/hr</td>
<td>0 mmol x wt</td>
<td>Renal alkalisation. Very alkaline. High extravasation risk. Central administration preferable, Dilute 1:10 peripherally.</td>
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<tr>
<td>Sodium nitroprusside (inf)</td>
<td>1-5 mcg/kg/min</td>
<td>1 mcg/kg/min</td>
<td>3 mg x wt</td>
<td>Protect from light. Tachyphylaxis after 24 hrs. Toxicity with rising lactate and mixed venous saturations.</td>
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<tr>
<td>Thioental (inf)</td>
<td>1-8 mg/kg/hr</td>
<td>1 mg/kg/hr</td>
<td>0 mg x wt</td>
<td>Reconstitute with 20ml WFI to give 25mg/ml. Further dilute with 0.9% N/S if required. Status epilepticus. Accumulates in fat. Cardiovascular suppression. Extravasation risk</td>
</tr>
<tr>
<td>Vasopressin (inf)</td>
<td>0.0001-0.002 unit/kg/min</td>
<td>0.0005 unit/kg/min</td>
<td>1.5 units x wt</td>
<td>Dosing range: low=0.0001u/kg/min; standard= 0.00025u/kg/min; high=0.0005u/kg/min; maz= 0.002u/kg/min. Dilute in 5% dex or 0.9% N/S.</td>
</tr>
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</table>