

## ADENOSINE

<b>Trade Name</b>	Adenocor		
<b>Class</b>	Cardiac anti-arrhythmic		
<b>Mechanism of Action</b>	Active ATP metabolite. Depresses SA node automaticity and AV node conduction; no negative inotropic effect.		
<b>Indications</b>	Diagnosis and acute treatment of sustained tachyarrhythmias		
<b>Contraindications</b>	Wolf-Parkinson-White syndrome <sup>5</sup> . 2° or 3° AV block or sick sinus syndrome <sup>7</sup> .		
<b>Supplied As</b>	3mg/mL solution (2mL vials containing 6mg Adenosine in 0.9% saline and water for injection)		
<b>Dilution</b>	Check to see that solution is clear prior to administration.		
	<b>Babies &lt;2kg</b>		
	<b>Drug</b>	<b>0.9% Saline Added</b>	<b>Final Volume</b>
	1mL (3mg)	9mL	10mL
	<b>Concentration</b>	<b>300microgram/mL</b>	
	<b>Babies ≥ 2kg</b>		
	<b>Drug</b>	<b>0.9% Saline Added</b>	<b>Final Volume</b>
	1mL (3mg)	2mL	3mL
	<b>Concentration</b>	<b>1000microgram/mL</b>	
	Dilute immediately prior to use due to short half life.		
<b>Dosage</b>	<p><b>Initial dose:</b> 100microgram/kg</p> <p><b>Repeat dose:</b> Stepwise increase dose in 100 microgram/kg increments</p> <p>ie: 200 microgram/kg, then 300 microgram/kg</p> <p>Doses up to 500 microgram/kg may be needed (D/W Cardiologist if not successful at 300 microgram/kg)</p>		
<b>Interval</b>	May repeat every 20 seconds to 2 minutes if SVT persists.		
<b>Administration</b>	<p>Rapid IV bolus (1-2 seconds): ideally via an IV sited as proximal to the heart as possible (eg brachial vein).</p> <p>Infuse as close to IV site as possible and flush immediately with 0.9% sodium chloride.</p> <p>Avoid administration via an umbilical artery catheter if possible as the drug will be metabolised prior to delivery to the heart.</p> <p>Intraosseous administration has been reported as successful</p>		

<b>Compatible With</b>	0.9% sodium chloride; 5% dextrose, lactated ringer's <sup>8</sup> .								
<b>Incompatible With</b>	N/A								
<b>Monitoring</b>	Continuous ECG and BP monitoring.								
<b>Stability</b>	Discard diluted solution and vial after each episode of treatment (contains no preservative).								
<b>Storage</b>	Room temperature (refrigeration causes crystallization). If crystallised, allow to warm to room temperature to dissolve crystals <sup>8</sup> .								
<b>Adverse Reactions</b>	Flushing, dyspnoea, arrhythmias, bradycardia and irritability common but resolve within 1 minute. Transient (<1 min) arrhythmias may occur during transition from SVT to sinus rhythm. Recurrence of SVT in $\pm$ 30%. Apnoea reported in one preterm infant.								
<b>Metabolism</b>	Rapidly metabolised by all cells of the body. Half life 10 seconds								
<b>Comments</b>	Theophylline/caffeine diminish the effect of adenosine via competitive antagonism: larger doses may be required <sup>7</sup> .								
<b>References</b>	<ol style="list-style-type: none"> <li>1) Young T.E. et al. Neofax 2000; 88.</li> <li>2) Ozer S. et al. "Adenosine- and verapamil-sensitive ventricular tachycardia in the newborn." Pacing Clin Electrophysiol. 24(5):898-901, 2001 May.</li> <li>3) Patole S. et al. "Improved oxygenation following adenosine infusion in persistent pulmonary hypertension of the newborn." Biol Neonate. 74(5):345-50, 1998 Nov.</li> <li>4) Paret G. et al. "Adenosine for the treatment of paroxysmal supraventricular tachycardia in full-term and preterm newborn infants." Am J Perinatol. 13(6):343-6, 1996 Aug.</li> <li>5) Mulla N. et al. "Ventricular fibrillation following adenosine therapy for supraventricular tachycardia in a neonate with concealed Wolff-Parkinson-White syndrome treated with digoxin." Pediatr Emerg Care. 11(4):238-9, 1995 Aug.</li> <li>6) Clarke B. et al. "Rapid and safe termination of Supraventricular tachycardia in children by adenosine." Lancet.1(8528):299-301, 1987</li> <li>8) Neonatal Pharmacopoeia; Royal Women's Hospital;</li> <li>9) Melbourne 1<sup>st</sup> Edition 1998.</li> <li>10) Trissel LA, Handbook on Injectable Drugs, 12<sup>th</sup> Ed, 2003</li> <li>11) Personal communication with Dr Jon Skinner – Cardiologist Akld July 2012 on current dosing regime</li> <li>12) Adenocor product information, Sanofi 2015.</li> <li>13) Notes on Injectable Drugs 7<sup>th</sup> Edition, NZHPA.</li> </ol>								
<b>Updated By</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">J Klimek</td> <td style="width: 50%;">September 2003</td> </tr> <tr> <td>P Schmidt, B Robertshawe</td> <td>March 2006</td> </tr> <tr> <td>A Lynn, B Robertshawe</td> <td>June 2012 (re-order profile)</td> </tr> <tr> <td colspan="2">A Lynn, M Wallenstein, B Robertshawe, A Evison May 2020 ( review and update)</td> </tr> </table>	J Klimek	September 2003	P Schmidt, B Robertshawe	March 2006	A Lynn, B Robertshawe	June 2012 (re-order profile)	A Lynn, M Wallenstein, B Robertshawe, A Evison May 2020 ( review and update)	
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