

# ADRENALINE (A)

(Revised: April 2019)



<b>TYPE:</b>	A naturally occurring catecholamine [S3]		
<b>PRESENTATIONS:</b>	1:10,000 – 1mg in 10ml – glass ampoule 1:1,000 – 1mg in 1ml – glass ampoule		
<b>ACTIONS:</b>	<p>1. <math>\alpha</math> effect: peripheral vasoconstriction</p> <p>2. <math>\beta_1</math> effects:</p> <ul style="list-style-type: none"> <li>a) increased rate of sinus node</li> <li>b) increased myocardial contractility</li> <li>c) increased AV conduction</li> <li>d) increased myocardial irritability</li> </ul> <p>3. <math>\beta_2</math> effects:</p> <ul style="list-style-type: none"> <li>a) bronchodilation</li> <li>b) vasodilation of skeletal muscle</li> </ul> <p>Onset: <b>IV</b> = 30 seconds; <b>IM</b> = 30 – 90 seconds  Max effect: <b>IV</b> = 3 – 5 min; <b>IM</b> = 4 – 10 mins  Endotracheal use: slightly longer times</p>		
<b>USES:</b>	<b>ICP</b>	1. Cardiac arrest: <ul style="list-style-type: none"> <li>➤ VF and VT – no output</li> <li>➤ Asystole</li> <li>➤ Pulseless electrical activity (PEA)</li> </ul>	<b>AP</b>
	<b>ICP</b>	2. Anaphylaxis	<b>AP</b>
	<b>ICP</b>	3. Severe life-threatening asthma	<b>AP</b>
	<b>ICP</b>	4. Bradyarrhythmias resistant to atropine	
	<b>ICP</b>	5. Severe upper airway obstruction due to swelling	<b>AP</b>
	<b>ICP</b>	6. Critically ill sepsis / meningococcal disease / hypovolaemic shock / cardiogenic shock <i>unresponsive to fluid boluses</i>	
<b>ADVERSE EFFECTS:</b>	<p>1. Tachycardia</p> <p>2. Tachyarrhythmias</p> <p>3. Hypertension</p>		

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## ADRENALINE (A) – cont.



<b>CONTRA-INDICATION:</b>	Known hypersensitivity
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<b>PRECAUTIONS:</b>	<p>These apply to patients with cardiac output only:</p> <ol style="list-style-type: none"> <li>1. Care with patients with history of hypertension</li> <li>2. Care with patients with history of ischaemic heart disease</li> <li>3. Give extremely slowly to patients on MAO Inhibitor antidepressants (e.g. <i>Nardil, Parnate</i>) as adrenaline may provoke a greatly exaggerated response. Generally, patients on MAOIs with cardiac output should receive no more than ¼ of the normal dose of adrenaline, titrated to response.</li> </ol>
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### DOSES:

<b>CARDIAC ARREST</b>		
<b>ADULT:</b>		
<b>ICP</b>	1mg IV or IO – fast push No limit on number of doses in cardiac arrest	<b>AP</b>
<b>PAEDIATRIC:</b>		
<b>ICP</b>	<b>IV:</b> 0.01mg/kg – fast push No limit on number of doses in cardiac arrest	<b>AP</b>
<b>ICP</b>	<b>IO:</b> 0.01mg/kg – fast push No limit on number of doses in cardiac arrest	
<b>ICP</b>	<b>ETT: NEWBORN ONLY</b> – if no IV or IO access – 0.02mg/kg	

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## ADRENALINE (A) – cont.



### ANAPHYLAXIS / SEVERE LIFE-THREATENING ASTHMA

ADULT:

ICP	IM: 0.5mg – repeat once if required	AP
ICP	If required – IV/IO adrenaline by infusion, titrated to response	

PAEDIATRIC:

ICP	0.01mg/kg IM (up to 50kg) – repeat once if required	AP
ICP	If required – IV/IO adrenaline by infusion, titrated to response	

### BRADYARRHYTHMIAS RESISTANT TO ATROPINE

ADULT and PAEDIATRIC:

ICP	IV/IO adrenaline by infusion – titrated to response.	
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### SEVERE UPPER AIRWAY SWELLING

ICP	Weight >10kg – nebulise 5ml adrenaline 1:1,000 Weight <10kg – nebulise 0.5ml/kg adrenaline 1:1,000 (make volume up to 5ml with saline, as required) <i>Single dose only.</i>	AP
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### CRITICALLY ILL SEPSIS / MENINGOCOCCAL DISEASE / HYPOVOLAEMIC SHOCK / CARDIOGENIC SHOCK *unresponsive to fluid bolus/es*

ADULT and PAEDIATRIC:

ICP	IV/IO adrenaline by infusion – titrated to response.	
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### ADRENALINE INFUSION:

1mg in 500ml normal saline (= 2 mcg/ml)  
20 drops/min = 1 ml/min = 2 mcg/min (titrate as required).  
Utilising a burette will achieve more accurate dosing  
(ALWAYS use a burette with paediatric patients).  
*Remember to label the flask with a medication label.*