

# 20 kg

## Anaphylaxis



## Resuscitation / Arrhythmia

<b>Adrenaline IV (cardiac arrest)</b>	<b>10 micrograms/kg</b>	<b>200 micrograms</b>	<b>of 1:10,000 (large ampoule)</b> ETT dose 2 mL of 1:1000 (small ampoules), diluted to 10mL	<b>2 mL</b>
DC shock	4 J/kg		Use adult/child pads	<b>100 Joules</b>
ATROpine	20 micrograms/kg	400 micrograms	Diluted (600 micrograms in 6 mL)	<b>4 mL</b>
AmlODAROne	5 mg/kg	100 mg	Dilute 1 ampoule (150 mg in 3mL) to 25 mL in <u>Glucose 5%</u> Over 3 mins in emergency, otherwise over 20-120 mins	<b>16.7 mL</b>
Adenosine (1st dose)	0.1 mg/kg	2 mg		<b>0.7 mL</b>
Adenosine (2nd dose)	0.2 mg/kg	4 mg	<u>Undiluted</u> (6 mg in 2 mL); use 1 mL or 3 mL syringe	<b>1.3 mL</b>
Adenosine (3rd dose)	0.3 mg/kg	6 mg		<b>2 mL</b>
<b>Nebulised Adrenaline</b> for upper airway obstruction / croup: <b>5 mL of 1:1000</b> (small ampoule) <b>OR 0.5 mL</b> of 1% solution diluted to 4 mL				

## Management of shock

<b>FLUID BOLUS</b> (Isotonic crystalloid)	5 mL/kg = <b>100 mL</b>	10 mL/kg = <b>200 mL</b>	20 mL/kg = <b>400 mL</b>	
<b>PUSH DOSE PRESSORS</b>	<b>Metaraminol</b>	10 micrograms/kg 200 micrograms	10 mg (1 ampoule) in 100 mL bag. Draw up 10 mL. <i>(OR use undiluted 3mg/6mL vial and give 0.4 mL)</i>	<b>2 mL</b>
	<b>Adrenaline</b>	1 micrograms/kg 20 micrograms	Dilute 2 mL of 1:10,000 Adrenaline (large ampoule) to total volume of 10 mL	<b>1 mL</b>
<b>INFUSIONS</b> <i>Can use either glucose 5% or sodium chloride 0.9%, except peripheral noradrenaline use glucose 5% + sodium chloride 0.9%</i>	<b>Medication</b>	<b>Dilution</b>	<b>1 mL/h =</b>	<b>Starting Dose</b>
	<b>Adrenaline (Central / IO)</b>	<b>3 mg</b> made up to 100 mL	0.025 micrograms/kg/min	0.4 – 10 mL/h
	<b>Noradrenaline (Central / IO)</b>	<b>3 mg</b> made up to 100 mL	0.025 micrograms/kg/min	0.4 – 20 mL/h
	<b>Adrenaline (Peripheral)</b>	<b>6 mg</b> made up to 1000 mL	<i>mL/h = microgram/kg/min: 10=0.05; 20=0.1; 30=0.15; 40=0.2; 50=0.25; 60=0.3; 80=0.4; 100=0.5; 200=1</i>	10 mL/h
	<b>Noradrenaline (Peripheral)</b>	<b>6 mg</b> made up to 1000 mL		10 mL/h
<b>Dobutamine</b>	<b>300 mg</b> made up to 50 mL	5 micrograms/kg/min		1 - 3 mL/h

## Intubation

<b>EQUIPMENT</b> <i>(prepare one size above/below)</i>	ET tube size (uncuffed) (Age/4) + 4	5.5	<b>Depth: 15 cm</b> to lip	<b>Laryngoscope: 2</b>
	ET tube size (Microcuff™)	4.5	18 cm to nose	<b>Suction: 10 Fr</b>
	ET tube size (cuffed) (Age/4)+3.5	5	<b>LMA size: 2 – 2.5</b>	
<b>INDUCTION AGENTS</b>	<b>Ketamine</b>	1 - 2 mg/kg <b>20 - 40 mg</b>	Dilute 200mg in 20 mL OR dilute 100mg in 10mL	<b>2 - 4 mL</b>
	<b>Propofol</b>	2- 3 mg/kg <b>40 - 60 mg</b>	Risk CVS ↓ Undiluted	<b>4 - 6 mL</b>
	<b>Fentanyl</b>	2-4 micrograms/kg <b>40-80 micrograms</b>	Dilute 100 micrograms to 10 mL	<b>4 - 8 mL</b>
	<b>Midazolam</b>	0.1 mg/kg <b>2 mg</b>	Dilute 5 mg to 5 mL	<b>2 mL</b>
<b>PARALYTIC AGENTS</b>	<b>Suxamethonium</b>	2 mg/kg <b>40 mg</b>	Dilute 100 mg to 10 mL	<b>4 mL</b>
	<b>Rocuronium</b>	1.2 mg/kg <b>24 mg</b>	Undiluted	<b>2.4 mL</b>
	<b>Vecuronium</b>	0.1 mg/kg <b>2 mg</b>	Reconstitute 10 mg in 10 mL water for injection	<b>2 mL</b>
	<b>Pancuronium</b>	0.1 mg/kg <b>2 mg</b>	Dilute 4mg to 4mL	<b>2 mL</b>
	<b>Atracurium</b>	0.5 mg/kg <b>10 mg</b>	Dilute 25 mg to 10 mL	<b>4 mL</b>
	<b>Cisatracurium</b>	0.1 mg/kg <b>2 mg</b>	Undiluted	<b>1 mL</b>
<b>INFUSIONS</b> <i>Can use either glucose 5% or sodium chloride 0.9%</i>	<b>Morphine</b>	<b>20 mg</b> made up to 50 mL	1 mL / h = 20 micrograms/kg/hour	Starting dose: 1 - 4 mL/h
	<b>Midazolam</b>	<b>60 mg</b> made up to 50 mL	1 mL / h = 1 microgram/kg/min	Starting dose: 1 - 4 mL/h
	<b>Fentanyl</b>	<b>2,000 micrograms</b> made up to 50 mL	1 mL / h = 2 microgram/kg/hour	Starting dose: 0.5 - 2.5 mL/h

## Blood products – use WARMED fluids

<b>Packed red cells:</b> <b>1 unit</b> (adult dose)	<b>Fresh frozen plasma (FFP):</b> (10-20 mL/kg) <b>1 – 2 units</b> 200 – 400 mL	<b>Platelets:</b> <b>1 unit</b> (adult dose)	<b>Cryoprecipitate:</b> Whole blood (10 mL/kg): <b>6 units</b> Apheresis (5 mL/kg): <b>100 mL</b>	<b>Tranexamic acid</b> <b>Loading dose: 300 mg</b> (15 mg/kg) (Dilute to 10 mg/mL, give 30 mL over 10 minutes) <b>Infusion: 40 mg/hour for 8 hrs</b> (2 mg/kg/hr) (Dilute to 10 mg/ml, give 4 mL/hour)
<b>Massive transfusion:</b> 1:1 ratio of packed red cells and FFP (e.g. alternate units of red cells / FFP)				

## Acute respiratory illness (NB –all need to be given as separate infusions)

<b>ASTHMA INFUSIONS</b>	<b>Magnesium</b> 50 mg/kg (0.2 mmol/kg)	Dilute 5 mL (10 mmol) of 50% MgSO <sub>4</sub> to 50 mL. Give <b>20 mL</b> (4 mmol = 1000 mg) <b>over 20 minutes</b>	<b>Corticosteroids</b> <b>Methylprednisolone:</b> 20 mg IV, 6 hourly <b>Prednisolone:</b> 20 mg daily <b>Hydrocortisone:</b> 80 mg IV, 6 hourly <b>Dexamethasone:</b> <i>Mild/moderate croup</i> (oral): 3 mg <i>Mild/moderate asthma</i> (oral) : 6 mg <i>Severe asthma / croup</i> (IV/IM): 12 mg
	<b>Aminophylline</b> 10 mg/kg	<b>200 mg</b> diluted to at least 200 mL. Give over 30 minutes	
	<b>Salbutamol</b> 5 micrograms/kg	<b>100 – 300 micrograms</b> , diluted to at least 10 mL. Give over 10 minutes	
	<b>Life-threatening asthma:</b> Adrenaline IM or “push dose” or infusion		
		<b>Life-threatening croup:</b> Nebulised Adrenaline	

## Seizures / Neurology (see seizure flowchart)

<b>MIDazolam</b> (5 mg/ 1 mL – small ampoule) Intramuscular: (0.15 mg/kg) = 3 mg = <b>0.6 mL IM</b> Buccal / nasal: (0.3 mg/kg) = 6 mg = <b>1.2 mL intranasal/buccal</b>	<b>IV MIDazolam</b> (5 mg/ 5 mL – large ampoule) IV: (0.15 mg/kg) = 3 mg = <b>3 mL IV</b>	<b>IV Clonazepam</b> Child dose <b>0.5 mg</b>	<b>IV Diazepam</b> (0.3 mg/kg) <b>6 mg</b>
PhenyTOIN	20 mg/kg	<b>400 mg</b>	Undiluted (preferred). May dilute up 80 mL (max); give over 20 min
Sodium Valproate	40 mg/kg	<b>800 mg</b>	Dilute 1 x 400 mg vial to 10 mL (will need 2 vials). Give <b>20 mL</b> over 5 min
Levetiracetam	40 mg/kg	<b>800 mg</b>	Dilute 1 x 500 mg vial to 10 mL (will need 2 vials). Give <b>16 mL</b> over 5 min
PHENobarbitone	20 mg/kg	<b>400 mg</b>	Dilute to at least 1:10; give over 20 min
Mannitol 20%	0.5 g/kg (2.5 mL/kg)	<b>50 mL</b>	Over 20-30 minutes for raised ICP
Sodium chloride 3% (“Hypertonic Saline”)	3 mL/kg	<b>60 mL</b>	Over 10-20 minutes for raised ICP

## Electrolyte abnormalities

<b>HYPOglycaemia:</b> 40 mL of <b>Glucose 10%</b> (2 mL/kg) – consider need for critical blood tests	
<b>HYPERkalaemia</b> - <b>Calcium gluconate 10%</b> 10 mL slow IV (peripheral / central) OR <b>Calcium chloride 10%</b> 2 - 4 mL (central) - <b>Salbutamol</b> 2.5 mg nebulised - <b>Glucose 10%</b> 100 mL bolus with <b>Actrapid</b> 2 units bolus followed by Actrapid 2 units/hour + Glucose 10% + NaCl 0.9% maintenance (60 mL/h) - <b>Sodium bicarbonate 8.4%</b> 20 - 60 mL (if acidosis) over 5 minutes <i>Calcium and bicarbonate should be given using different lines</i>  <b>Critical HYPOnatraemia with seizures</b> (Do NOT correct >8 mmol/L/day) 60 mL of <b>Sodium Chloride 3%</b> over 20 minutes	<b>Critical HYPOcalcaemia</b> <b>Calcium gluconate 10%</b> 10 mL slow IV (peripheral / central)  <b>HYPOmagnesaemia</b> Dilute 5 mL (10 mmol) of 50% MgSO <sub>4</sub> to 50 mL. Give <b>20 mL</b> (4 mmol = 1000 mg) up to <b>40 mL</b> (8 mmol = 2000 mg) over 2-4 hours  <b>Severe HYPOkalaemia needing urgent treatment</b> Use pre-mixed 100mL bag [isotonic]: 6 mmol (60 mL) <b>(Potassium Chloride 10 mmol in Sodium Chloride 0.29%)</b> Give over 1 hour using infusion pump

## SEVERE Infection NB – 1<sup>st</sup> dose only

<b>Aciclovir</b>	400 mg if > 12 years 300 mg if 5-12 years
<b>Ampicillin, Amoxicillin, Cefotaxime, Ceftriaxone*, Flucloxacillin</b>	1000 mg
<b>Gentamicin</b>	150 mg
<b>Clindamycin or Lincomycin</b>	300 mg
<b>Metronidazole</b>	300 mg
<b>Vancomycin</b>	300 mg
<b>Piperacillin / Tazobactam</b>	2000 mg

\* **If serious bacterial infection**, can give ceftriaxone 50 mg/kg (1000 mg) OR 100 mg/kg (2000 mg)  
If treating meningitis, also give **dexamethasone 3 mg IV** (0.15 mg/kg)

## Antidotes

<b>Sugammadex</b> 16 mg/kg	<b>320 mg</b>	Undiluted (100 mg/mL)	<b>3.2 mL</b>
<b>Naloxone (low dose)</b> 2 micrograms/kg	<b>40 micrograms</b>	Dilute 400 micrograms (1mL ampoule) to 20 mL	<b>2 mL</b> <i>repeat PRN</i>
<b>Naloxone (emergency)</b> 10 micrograms/kg	<b>200 micrograms</b>	Undiluted (400 micrograms in 1 mL)	<b>0.5 mL</b> <i>repeat PRN</i>
<b>N-Acetylcysteine (1<sup>st</sup> bag)</b>	<b>4000 mg</b>	in 250 mL of glucose 5%	Over 4 hours
<b>N-Acetylcysteine (2<sup>nd</sup> bag)</b>	<b>2000 mg</b>	in 500 mL of glucose 5%.	Over 16 hours

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Gastrointestinal bleeding	
<b>Pantoprazole</b> <i>Dilute 40 mg in 10 mL</i>	Intermittent dose: 20 mg (5 mL) Bolus (pre-infusion): 36 mg (9 mL)
<b>Pantoprazole infusion</b> <i>Dilute 80 mg in 100 mL</i>	3.6 mg/hour (4.5 mL/hour)
<b>Octreotide</b> <i>Dilute 500 micrograms in 100 mL</i>	<b>Loading:</b> 20 micrograms (4 mL) <b>Infusion:</b> start at 4 mL/hour ↑ by 4 mL/hour every 8 hours PRN

<b>Dantrolene for malignant hyperthermia</b>	Dilute 3 x 20 mg ampoule in 180 mL sterile H <sub>2</sub> O Give 150 mL (50 mg) every 5 minutes Maximum of 200 mg (4 doses)
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Sedation for procedures / treatment
<b>Midazolam</b> (5 mg/mL – small ampoule – undiluted) - *Oral: 10 mg (2 mL) - Intranasal: 6 mg (1.2 mL)
<b>Ketamine</b> (Undiluted – 200 mg in 2 mL) - Intramuscular: 60-80 mg (0.6-0.8 mL) - *Oral: 100-200 mg (1-2 mL)
<b>Ketamine (IV)</b> Dilute 200 mg in 20 mL Usual dose: 20 - 30 mg (2-3 mL) Consider 1-2 mL (10-20 mg) initial, then 1 mL (10 mg) increments; +/- adding 1 mL (10 mg) increments of propofol

Other infusions	Dilution	Usual rate
Vasopressin	20 units in 50 mL Glucose 5%	1 – 3 mL/hour
Ketamine	200 mg in 50 mL	2 - 12 mL/hour
Propofol	Undiluted	2 – 8 mL/hour
Milrinone	10 mg in 50 mL	0.8 – 4.4 mL/hour
Glyceryl Trinitrate	60 mg in 100 mL Glucose 5%	1 - 10 mL/hour
Sodium nitroprusside	30 mg in 50 mL Glucose 5%	1 – 20 mL/hour
Heparin (arterial line transducer)	250 units in 50 mL	1 – 2 mL/hour
Heparin (central line transducer)	50 units in 50 mL	1 – 2 mL/hour

<b>Dexmedetomidine</b> 200 micrograms / 2 mL (Undiluted) Intranasal: 40 – 80 micrograms 0.4 – 0.8 mL
<b>Clonidine</b> 150 micrograms/mL (Undiluted) - *Oral: 80 micrograms (0.53 mL) - Intranasal: 40 micrograms (0.27 mL)

\*Unpleasant taste! Consider mixing with 2-3 mL of sucrose, a dose of paracetamol and/or a few mL of juice.