

4.5 kg

Anaphylaxis



Resuscitation / Arrhythmia

Adrenaline IV (cardiac arrest)	10 micrograms/kg	45 micrograms	of 1:10,000 (large ampoule) ETT dose 0.45 mL of 1:1000 (small ampoules)	0.45 mL
DC shock	4 J/kg		Use paediatric pads	20 Joules
ATROpine	20 micrograms/kg	90 micrograms	Dilute 600 micrograms in 6 mL	0.9 mL
AmIODAROne	5 mg/kg	22.5 mg	Dilute 1 ampoule (150mg/3mL) to 30 mL in <u>Glucose 5%</u> Over 3 mins in emergency, otherwise over 20-120 mins	3.75 mL
Adenosine (1st dose)	0.1 mg/kg	0.45 mg		0.15 mL
Adenosine (2nd dose)	0.2 mg/kg	0.9 mg	<u>Undiluted</u> (6 mg in 2 mL); use 1 mL or 3 mL syringe	0.3 mL
Adenosine (3rd dose)	0.3 mg/kg	1.35 mg		0.45 mL
Nebulised Adrenaline for upper airway obstruction / croup: 5 mL of 1:1000 (small ampoule) <u>OR</u> 0.5 mL of 1% solution diluted to 4 mL				

Management of shock

FLUID BOLUS (Isotonic crystalloid)	5 mL/kg = 22.5 mL	10 mL/kg = 45 mL	20 mL/kg = 90 mL		
PUSH DOSE PRESSORS	Metaraminol	10 micrograms/kg	45 micrograms	10 mg (1 ampoule) in 100 mL bag. Draw up 10 mL. (OR dilute 2mL (1mg) from 3mg/6mL vial up to 10 mL)	0.45 mL
	Adrenaline	1 micrograms/kg	4.5 micrograms	Dilute 0.45 mL of 1:10,000 Adrenaline (<u>large ampoule</u>) to total volume of 10 mL	1 mL
INFUSIONS <i>Can use either glucose 5% or sodium chloride 0.9%, except peripheral noradrenaline use glucose 5% + sodium chloride 0.9%</i>	Medication	Dilution	1 mL/h =	Starting Dose	
	Adrenaline (Central / IO)	0.68 mg made up to 50 mL	0.05 micrograms/kg/min	0.2 – 5 mL/h	
	Noradrenaline (Central / IO)	0.68 mg made up to 50 mL	0.05 micrograms/kg/min	0.2 – 10 mL/h	
	Adrenaline (Peripheral)	3 mg made up to 500 mL	mL/h=microgram/kg/min: 2.25=0.05; 4.5=0.1;	2.25 mL/h	
	Noradrenaline (Peripheral)	3 mg made up to 500 mL	6.75=0.15; 9=0.2; 11.25=0.25; 13.5=0.3; 18=0.4; 22.5=0.5; 45=1	2.25 mL/h	
	Dobutamine	67.5 mg made up to 50 mL	5 micrograms/kg/min	1 - 3 mL/h	
Prostaglandin (Alprostadil)	270 micrograms made up to 50 mL	20 nanograms/kg/min	0.25 – 3 mL/h <i>If shocked, start at high end of range and anticipate apnoea / need for intubation</i>		

Intubation

EQUIPMENT <i>(prepare one size above/below)</i>	ET tube size (<u>uncuffed</u>) (Age/4) + 4	3.5	Depth: 10cm to lip 12 cm to nose	Laryngoscope: 0 Suction: 6 Fr	
	ET tube size (<u>Microcuff™</u>)	3	LMA size: 1		
	ET tube size (<u>cuffed</u>) (Age/4)+3.5	N/A			
INDUCTION AGENTS	Ketamine	1 - 2mg/kg	4.5 – 9 mg	Dilute 200mg in 20 mL OR dilute 100mg in 10 mL	0.45 – 0.9 mL
	Propofol	1 - 2mg/kg	4.5 - 9 mg	<i>Risk CVS ↓</i> Undiluted	0.45 – 0.9 mL
	Fentanyl	2-4 micrograms/kg	9-18 micrograms	Dilute 100 micrograms to 10 mL	0.9 – 1.8 mL
	Midazolam	0.1 mg/kg	0.45 mg	Dilute 5 mg to 5 mL	0.45 mL
PARALYTIC AGENTS	Suxamethonium	3 mg/kg	13.5 mg	Dilute 100 mg to 10 mL	1.35 mL
	Rocuronium	1.2mg/kg	5.4 mg	Undiluted	0.54 mL
	Vecuronium	0.1 mg/kg	0.45 mg	Reconstitute 10 mg in 10 mL water for injection	0.45mL
	Pancuronium	0.1 mg/kg	0.45 mg	Dilute 4 mg in 4 mL	0.45 mL
	Atracurium	0.5 mg/kg	2.3 mg	Dilute 25 mg to 10 mL	0.9 mL
	Cisatracurium	0.1 mg/kg	0.45 mg	Dilute to 1mg/mL (5mg in 2.5 mL make up to 5 mL)	0.45 mL
INFUSIONS <i>Can use either glucose 5% or sodium chloride 0.9%</i>	Morphine	4.5 mg made up to 50 mL	1 mL / h = 20 micrograms/kg/hour	Starting dose: 1 – 4 mL/h	
	Midazolam	13.5 mg made up to 50 mL	1 mL / h = 1 microgram/kg/min	Starting dose: 1 – 4 mL/h	
	Fentanyl	450 micrograms 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

Packed red cells: (10 mL/kg) 45 mL	Fresh frozen plasma (FFP): (10-20 mL/kg) 45-90 mL	Platelets: 10 mL/kg of pooled plts 45 mL	Cryoprecipitate: Whole blood (10 mL/kg): 45 mL Apheresis (5 mL/kg): 22.5 mL	Tranexamic acid Loading dose: 67.5 mg (15 mg/kg) <i>(Dilute to 10 mg/mL, give 6.75 mL over 10 minutes)</i> Infusion: 9 mg/hour for 8 hrs (2 mg/kg/hr) <i>(Dilute to 10 mg/mL, give 0.9 mL/hour)</i>
Massive transfusion: 1:1 ratio of packed red cells and FFP (e.g. alternate units of red cells / FFP)				

Acute respiratory illness

Asthma is very uncommon in children less than 12 months of age.
Consider bronchiolitis (most common), respiratory infection, or cardiac failure (check for hepatomegaly).
Bronchodilators and steroids are not recommended in children <12 months of age with wheezing.

Seizures / Neurology (see seizure flowchart)

MIDazolam (5 mg/ 1 mL – small ampoule) Intramuscular: (0.15 mg/kg) = 0.6 mg = 0.68 mL IM Buccal/nasal: (0.3 mg/kg) = 1.35 mg = 0.27 mL intranasal/buccal	IV MIDazolam (5 mg/ 5 mL – large ampoule) IV: (0.15 mg/kg) = 0.68 mg = 0.68 mL IV	IV Clonazepam Neonate dose 0.25 mg	IV Diazepam (0.3 mg/kg) 1.35 mg
<i>Sodium Valproate</i> Not recommended if <2 years of age. Weight-based dose for status epilepticus is 40 mg/kg (180 mg) over 5 minutes			
Levetiracetam	40 mg/kg	180 mg	Dilute 1 x 500mg vial to 10mL. Give 3.6 mL over 5 min
PHENobarbitone	20 mg/kg	90 mg	Dilute to at least 1:10; give over 20 min
Pyridoxine		50-100 mg	In consultation with neurology
Mannitol 20%	0.5 g/kg (2.5 mL/kg)	11.2 mL	Over 20-30 minutes for raised ICP
Sodium chloride 3% (“Hypertonic Saline”)	3 mL/kg	13.5 mL	Over 10-20 minutes for raised ICP

Electrolyte abnormalities

HYPOglycaemia: 9 mL of Glucose 10% (2 mL/kg) – consider need for critical blood tests

HYPERkalaemia

- Calcium gluconate 10% 2.25 mL slow IV (peripheral / central)
OR Calcium chloride 10% 0.45 – 0.9 mL (central)
 - Salbutamol 2.5 mg nebulised
 - Glucose 10% 22.5 mL bolus with Actrapid 0.45 units bolus followed by Actrapid 0.45 units/hour + Glucose 10% + NaCl 0.9% maintenance (18 mL/h)
 - Sodium bicarbonate 8.4% 4.5 – 13.5 mL (if acidosis) over 5 minutes
- Calcium and bicarbonate should be given using different lines

Critical HYPOnatraemia with seizures (Do NOT correct >8 mmol/L/day)
13.5 mL of Sodium Chloride 3% over 15-30 minutes

Critical HYPOcalcaemia

Calcium gluconate 10% 2.25 mL slow IV (peripheral / central)

HYPOmagnesaemia

Dilute 5 mL (10 mmol) of 50% MgSO₄ to 50 mL.
Give **4.5 mL** (0.9 mmol = 225 mg) up to **9 mL** (1.8 mmol = 450 mg) over 2-4 hours

Severe HYPOkalaemia needing urgent treatment

Use pre-mixed 100mL bag [isotonic]: 1.35 mmol (13.5 mL)
(Potassium Chloride 10 mmol in Sodium Chloride 0.29%)
Give over 1 hour using syringe driver

SEVERE Infection NB – 1st dose only

Aciclovir	90 mg
Benzylpenicillin	270 mg
Cefotaxime	225 mg
Flucloxacillin	225 mg
Gentamicin	22.5 mg
Meropenem	180 mg
Metronidazole	67.5 mg
Vancomycin	67.5 mg

Antidotes

Sugammadex 16 mg/kg	72 mg	Dilute 200 mg to 8mL (25 mg/mL)	2.9 mL
Naloxone (low dose) 2 micrograms/kg	9 micrograms	Dilute 400 micrograms (1 mL ampoule) to 20 mL	0.45 mL <i>repeat PRN</i>
Naloxone (emergency) 10 micrograms/kg	45 micrograms	Dilute 400 micrograms (1 mL ampoule) to 20 mL	2.25 mL <i>repeat PRN</i>
N-Acetylcysteine (1st bag)	900 mg in 100 mL of glucose 5%		Over 4 hours
N-Acetylcysteine (2nd bag)	450 mg in 250 mL of glucose 5%		Over 16 hours

4.5 kg

Gastrointestinal bleeding	
Pantoprazole <i>Dilute 40 mg in 10 mL</i>	Intermittent dose: 4.5 mg (1.13 mL) Bolus (pre-infusion): 9 mg (2.25 mL)
Pantoprazole infusion <i>Dilute 40 mg in 50 mL</i>	0.9 mg/hour (1.13 mL/hour)
Octreotide <i>Dilute 250 micrograms in 50 mL</i>	Loading: 4.5 micrograms (0.9 mL) Infusion: start at 0.9 mL/hour ↑ by 0.9 mL/hour every 8 hours PRN

Dantrolene for malignant hyperthermia	Dilute 1 x 20 mg ampoule in 60 mL sterile H ₂ O Give 33.75 mL (11.25 mg) every 5 minutes <i>Maximum of 45 mg (4 doses)</i>
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Sedation for procedures / treatment
Sucrose 33% (if age <1 month) 0.1 mL per dose (<i>max 1 mL for procedure</i>) <i>5 mL maximum every 24 hours</i>
Sucrose 33% (if age >1 month) 0.25-0.5 mL per dose (<i>max 2 mL for procedure</i>) <i>5 mL maximum every 24 hours (10 mL if >3 months)</i>

Other infusions	Dilution	Usual rate
Vasopressin	4.5 units in 50 mL Glucose 5%	1 – 3 mL/hour
Ketamine	200 mg in 50 mL	0.5 – 2.7 mL/hour
Propofol	Undiluted	0.5 – 1.8 mL/hour
Milrinone	6.75 mg in 50 mL	0.5 – 1.5 mL/hour
Glyceryl Trinitrate	13.5 mg in 50 mL Glucose 5%	1 - 5 mL/hour
Sodium nitroprusside	13.5 mg in 50 mL Glucose 5%	1 – 10 mL/hour
Heparin (<i>arterial line transducer</i>)	250 units in 50 mL	1 – 2 mL/hour
Heparin (<i>central line transducer</i>)	50 units in 50 mL	1 – 2 mL/hour

No other medications recommended for procedural sedation in this age group outside the ICU setting