DRUG DOSAGES IN PAEDIATRIC ANAESTHESIA

PREMEDICATION

Atropine	0.04mg/kg oral, or 0.02mg/kg IM
Chloral Hydrate	50mg/kg oral, given 30-45 minutes before surgery
Clonidine	2mcg/kg oral
Hyoscine hydrobromide	0.01mg/kg IM, given 30 minutes before surgery
Ketamine	5mg/kg oral, or 2-4mg/kg IM
Midazolam	0.5mg/kg oral, given 15 minutes before surgery 0.1-0.2mg/kg IV, or 0.2-0.3mg/kg intranasal (causes a burning sensation)
Promethazine	1mg/kg oral, given 30 minutes before surgery

INTRAVENOUS INDUCTION AGENTS

Etomidate	0.3mg/kg IV
Ketamine	0.2mg/kg IV or 5-10mg/kg IM
Propofol	2-6mg/kg IV, over 3 months of age
Thiopentone	5mg/kg IV (if premedicated), 5-8mg/kg IV (if unpremedicated)

MUSCLE RELAXANTS

Atracurium	0.5mg/kg IV
Mivacurium	0.15mg/kg IV
Pancuronium	0.1mg/kg IV
Rocuronium	0.6-1.2mg/kg IV
Suxamethonium	1-2mg/kg IV

REVERSAL AGENTS

Atropine	0.02mg/kg IV
Glycopyrrolate	0.01mg/kg IV
Neostigmine	0.05mg/kg IV
Sugammedex	2mg/kg IV for moderate blockade 4mg/kg IV for deep blockade 16mg/kg IV for immediate reversal

ANALGESICS

Paracetamol	15 mg/kg oral/IV (paediatrics), 7.5-10 mg/kg oral/IV (neonates)
Ibuprofen	5-10mg/kg oral
Diclofenac	1 mg/kg per rectal
Oxycodone	01 - 0.2 mg/kg oral
Fentanyl	0.5 - 3 mcg/kg IV
Morphine	0.05- 0.2 mg/kg IV
Remifentanil	0.01-1 mcg/kg/min, titrate to effect

LOCAL ANAESTHETICS (TOXIC DOSE)

Bupivacaine	≥ 2.5mg/kg; ≥ 2mg/kg in neonates
Levobupivacaine	≥ 2.5mg/kg, ≥ 2mg/kg in neonates
Lignocaine	≥ 3mg/kg; ≥ 7mg/kg (with adrenaline)

** please refer to chapter on Regional Anaesthesia for dosing guidelines for central neuraxial blocks or peripheral nerve blocks*

DRUGS USED FOR EMERGENCIES/ RESUSCITATION

CARDIAC RESUSCITATION DRUGS

Adrenaline	0.1ml/kg of 1:10 000 IV/ IO (ie 10mcg/kg) repeated 3-5min as required 0.1ml/kg of 1:1000 via ETT Anaphylaxis: 0.05ml/kg of 1:10 000 IV, or 0.01ml/kg of 1:1000 IM Severe croup: 0.5ml/kg/dose of 1:1000 nebulised (max 5ml)
Adenosine	0.1-0.2mg/kg IV (max 6-12mg) for SVT, and flushed with 10ml NS
Atropine	0.02mg/kg
Amiodarone	5mg/kg IV over 3-5min, may repeat 5mg/kg/dose up to 3 times (max 15mg/kg) Infusion: 5-15mcg/kg/min
Calcium chloride 10%	0.2ml/kg IV
Lignocaine	1mg/kg IV, infusion 15-50mcg/kg/min
Sodium bicarbonate 8.4%	1-2ml/kg IV

DEFIBRILLATION

External defibrillation	4J/kg for pulseless VF/VT
Synchronized cardioversion	Initial 0.5-1J/kg then subsequent 2J/kg for unstable SVT

LOCAL ANAESTHETIC TOXICITY

Lipofundin 20%	Initial bolus 1.5ml/kg IV over 1 minute and start infusion at 15ml/kg/hr Subsequent bolus 1.5ml/kg IV every 5min, up to a maximum of 3 boluses, and increase infusion to 30ml/kg/hr if hemodynamic stability not achieved. **Not to exceed a maximum cumulative dose of 12ml/kg.* *Ref: AAGBI guidelines (2010) Management of local anaesthetic toxicity*

MALIGNANT HYPERTHERMIA

Dantrolene	2.5mg/kg immediate IV bolus Repeat 1mg/kg boluses as required to max 10mg/kg **Dilution: mix 20mg dantrolene with 60ml sterile water to make a solution of 1mg in 3ml. Initial bolus of 7.5ml/lg (=2.5mg/kg) then further doses of 3ml/kg (=1mg/kg) to a max 30ml/kg (10mg/kg)* *Ref: AAGBI safety guidelines (2011) Malignant Hyperthermia Crisis*

HYPOGLYCEMIA

50% Dextrose	0.5ml/kg slow IV, or
10% Dextrose	2.5ml/kg slow IV

HYPERKALEMIA

Insulin	0.1unit/kg/dose IV (max 10units/dose), to be given with IV dextrose
50% Dextrose	1ml/kg/dose IV, given with IV insulin as above
10% Dextrose	5ml/kg/dose IV, given with IV insulin as above
Calcium chloride 10%	0.2ml/kg IV

SEVERE ASTHMA

Aminophylline	Loading dose 5mg/kg IV over 30min, then infusion 15-20mg/kg over 24h *avoid loading dose in patients on theophylline therapy
Hydrocortisone	4-5mg/kg IV 4-6 hourly (max 100mg)
Magnesium sulphate	Loading dose 50mg/kg (0.2mmol/kg) IV over 30min (max 2g/dose) Maintenance dose: 20-40mg/kg/hr (max dose 40g/day, max rate 40mg/kg/hr)
Salbutamol	Loading dose 5mcg/kg IV, diluted in 10mls NS given over 10min Maintenance dose: 1-5mcg/kg/min (max rate 10mcg/kg/min)

VASOACTIVE DRUG INFUSIONS

Drug	Paediatric dilution	Concentration*	Dose Range
Adrenaline	(weight x 0.3)mg in 50ml	1ml/hr = 0.1mcg/kg/min	0.01 to 0.5mcg/kg/min
Dobutamine	(weight x 30)mg in 50ml	1ml/hr = 10mcg/kg/min	2 to 15mcg/kg/min
Dopamine	(weight x 30)mg in 50ml	1ml/hr = 10mcg/kg/min	2 to 15mcg/kg/min
Isoprenaline	(weight x 0.3)mg in 50ml	1ml/hr = 0.1mcg/kg/min	0.05 to 2mcg/kg/min
Milrinone	(weight x 3)mg in 50ml	1ml/hr = 1mcg/kg/min	0.3 to 0.7mcg/kg/min
Noradrenaline	(weight x 0.3)mg in 50ml	1ml/hr = 0.1mcg/kg/min	0.01 to 0.5mcg/kg/min
Nitroglycerin	(weight x 3)mg in 50ml	1ml/hr = 1mcg/kg/min	0.5 to 10mcg/kg/min
Nitroprusside	(weight x 1.5)mg in 25ml	1ml/hr = 1mcg/kg/min	0.5 to 8mcg/kg/min
Phenylephrine			2-10mcg/kg IV bolus Infusion 1-5mcg/kg/min

**not to exceed the concentration of the original preparation*

MISCELLANEOUS DRUGS

Dexamethasone	0.25mg/kg IV, then 0.1mg/kg q6h
Dexmedetomidine	1mcg/kg IV over 15min, then 0.2-0.7mcg/kg/hr (prepared as either neonatal concentration of 1mcg/ml or adult concentration of 4mcg/ml)
Esmolol	0.5mg/kg IV, repeated as needed
Flumazenil	5mcg/kg IV every 60seconds to a max 40mcg/kg total dose. Infusion 2-10mcg/kg/hour
Frusemide	0.5-1mg/kg IV (max 20-40mg) Infusion 0.1-1mg/kg/hour
Hydrocortisone	1-2mg/kg IV q6h
Hyoscine Nbutylbromide (Buscopan)	0.6mg/kg/dose IV 6-8hourly >12 years old: 10-20mg 3-4 times daily
Levitiracetam (Keppra)	Loading dose 50mg/kg/dose IV (max 2.5g) Maintenance: 30-60mg/kg/day divided twice daily
Lorazepam	0.1mg/kg IV, up to 4mg. May repeat in 5min, for status epilepticus
Mannitol 20%	0.25-0.5g/kg IV (1.25-2.5ml/kg of 20% Mannitol)
Metoclopromide	0.15mg/kg/dose IV q6h
Naloxone	
Omeprazole	0.7-3.3mg/kg/day IV/oral once daily to 8hourly (max 40mg/dose)
Ondansetron	0.15-0.2mg/kg/dose 8hourly (max 8mg/dose)
Phenobarbitone	Loading dose 20mg/kg IV over 30min, may repeat up to 60-80mg/kg
Phenytoin	Loading dose 20mg/kg IV over 20min (max rate 1mg/kg/min, max dose 1.5g) May repeat 5mg/kg x 2 in status epilepticus
Promethazine	≥ 2 years: 0.125-0.2mg/kg oral (max 10mg/dose) TDS
Propranolol	0.1mg/kg IV
Ranitidine	1mg/kg IV 6-12hourly
Tranexamic acid	Loading 10mg/kg IV over 1 hour, then infusion at 1mg/kg/hour. Loading 25mg/kg IV over 1 hour, then infusion at 2.5mg/kg/hour for cardiac surgical cases