Asthma and Status Asthmaticus

Drug	Albuterol	Ipratropium (Atrovent)	Steroid	Magnesium	Epinephrine	Terbutaline	Other
Severity	Neb x 1 or MDI if mild Neb q20' x 3 if moderate Continuous if severe	Give with albuterol x1 if mild or q20' x 3 if moderate to severe	PO for moderate, IV for severe	Moderate to severe	Severe	Severe	Severe
0 – 4 years	2.5 mg neb or 4-6 puffs MDI (moderate) Continuous 7.5 mg/hr or 1 mg/kg/hr	0.25 mg neb	Decadron 0.3-0.6 mg/kg PO (max 12mg) Prednisone 2mg/kg PO (max 60mg) Methylpred-nisolone 2mg/kg IV (max 125mg)	40 mg/kg IV	0.01 mg/kg or 1:1000 IM or SQ	0.01 mg/kg IV over 10min (max 0.25-0.5mg), then IV infusion at 0.4 mcg/kg/min	BiPAP 10 IPAP/5 EPAP Aminophylline 5mg/kg IV over 1 hour then 0.5-1 mg/kg/hr Ketamine 1 mg/kg IV then infusion 1 mg/kg/hr Heliox 79/21 or 70/30
5 years and older	5 mg neb or 8 puffs MDI Continuous 15 mg/hr	0.5 mg neb		40 mg/kg IV (max 2gm)	0.01 mg/kg or 1:1000 IM or SQ (max 0.3mg)		

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Work-up

Pulse oximetry

Peak flow as able

Venous blood gas if severe

Chest radiograph if:

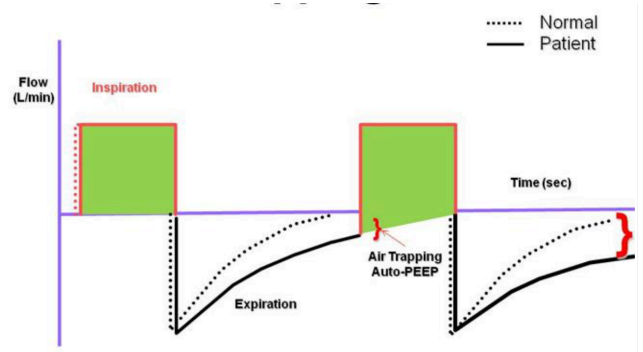
- Focal crackles after initial therapy
- Fever high (>39) or prolonged
- Persistent hypoxemia
- Severe disease
- Chest pain

Look for pneumonia, air leak, atelectasis

Mechanical ventilation

- Avoid intubation & mechanical ventilation if possible; allow permissive hypercapnia, aim for O2 sat $\geq$ 90%
- Indications: cardiac or respiratory arrest, physical exhaustion, severely altered level of consciousness, persistent severe hypoxemia
- RSI: ketamine, rocuronium
- Vent settings: minimal achievable PIP, tidal volume, long I:E ratio (1:3-4) and low rates to allow for full exhalation (avoid air trapping)
- Sedate heavily, try to avoid ongoing paralytic use (aminosteroid neuromuscular blocker + steroid can cause prolonged myopathy)

Ventilator flow waveform with air trapping; solution: lower rate, increase expiration time



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Nievas IFF & Anand KJS. J Pediatr Pharmacol Ther 2013;18(2):88-104