

# Asthma and Status Asthmaticus

| Drug              | Albuterol  | Ipratropium (Atrovent)   | Steroid   | Magnesium             | Epinephrine                               | Terbutaline   | Other   |
|-------------------|--|--|---|-----------------------|---|---|---|
| Severity          | Neb* x 1 or MDI if mild<br>Neb q20' x 3 if moderate<br>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<br><u>BiPAP</u><br>10 IPAP/5 EPAP<br><u>Aminophylline</u><br>5mg/kg IV over 1 hour then 0.5-1 mg/kg/hr<br><u>Ketamine</u><br>1 mg/kg IV then infusion 1 mg/kg/hr<br><u>Heliox</u> 79/21 or 70/30<br><u>Gen anesthesia</u><br>Anesthesiology<br>Sevoflurane<br><u>ECMO</u><br>Hosp-specific |
| 0 – 4 years       | 2.5 mg neb* or 4-6 puffs MDI (moderate)<br>Continuous☆<br>7.5 mg/hr or 1 mg/kg/hr<br>*6-8 L/min O2 | 0.25 mg neb  | <u>Decadron</u><br>0.3-0.6 mg/kg PO (max 12mg)<br><u>Prednisone</u><br>2mg/kg PO (max 60mg)<br><u>Methylprednisolone</u><br>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 |   |
| 5 years and older | 5 mg neb* or 8 puffs MDI<br>Continuous☆<br>15 mg/hr<br>☆10 L/min O2                                | 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 O<sub>2</sub> 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

