

# Management of acute severe asthma in adults in A&E

Time

## Measure Peak Expiratory Flow and Arterial Saturations

PEF > 75% best or predicted  
**mild**

PEF 33-75% best or predicted  
**moderate – severe:**

*features of severe asthma*

- PEF < 50% best or predicted
- Respiration  $\geq$  25/min
- Pulse  $\geq$  110 breaths/min
- Cannot complete sentence in one breath

PEF < 33% best or predicted  
OR any **life threatening features:**

- SpO<sub>2</sub> < 92%
- Silent chest, cyanosis, poor respiratory effort
- Bradycardia, arrhythmia, hypotension
- Exhaustion, confusion, coma

5 mins

Give usual bronchodilator

Give salbutamol 5 mg by oxygen-driven nebuliser

**Obtain senior/ICU help now if any life-threatening features are present**

15-30 mins

Clinically stable  
AND PEF > 75%

Clinically stable  
AND PEF < 75%

No life threatening features  
AND PEF 50-75%

Life threatening features  
OR PEF < 50%

### IMMEDIATE MANAGEMENT

- High concentration oxygen (> 60% if possible)
- Give salbutamol 5 mg plus ipratropium 0.5 mg via oxygen-driven nebuliser
- AND prednisolone 40-50 mg orally or IV hydrocortisone 100 mg

### Measure arterial blood gases

Markers of severity:

- Normal or raised PaCO<sub>2</sub>** (Pa CO<sub>2</sub> > 4.6 kPa; 35 mmHg)
- Severe hypoxia** (PaO<sub>2</sub> < 8 kPa; 60 mmHg)
- Low pH** (or high H<sup>+</sup>)

60 mins

Patient recovering  
AND PEF > 75%

No signs of severe asthma  
AND PEF 50-75%

Signs of severe asthma  
OR PEF < 50%

**OBSERVE**  
monitor SpO<sub>2</sub>, heart rate and respiratory rate

- Give/repeat salbutamol 5 mg with ipratropium 0.5 mg by oxygen-driven nebuliser after 15 minutes
- Consider continuous salbutamol nebuliser 5-10 mg/hr
- Consider IV magnesium sulphate 1.2-2 g over 20 minutes
- Correct fluid/electrolytes, especially K<sup>+</sup> disturbances
- Chest x-ray

120 mins

Patient stable  
AND PEF > 50%

Signs of severe asthma  
OR PEF < 50%

**ADMIT**  
Patient should be accompanied by a nurse or doctor at all times

### POTENTIAL DISCHARGE

- In all patients who received nebulised  $\beta_2$  agonists prior to presentation, consider an extended observation period prior to discharge
- If PEF < 50% on presentation, prescribe prednisolone 40-50 mg/day for 5 days
- In all patients ensure treatment supply of inhaled steroid and  $\beta_2$  agonist and check inhaler technique
- Arrange GP follow up for 2 days post presentation
- Fax discharge letter to GP
- Refer to asthma liaison nurse/chest clinic

### Peak expiratory flow in normal adults

