

Annex 5

Management of acute asthma in adults in hospital	
<p>Features of acute severe asthma</p> <ul style="list-style-type: none"> • Peak expiratory flow (PEF) 33–50% of best (use % predicted if recent best unknown) • Can't complete sentences in one breath • Respiration ≥ 25 breaths/min • Pulse ≥ 110 beats/min <p>Life-threatening features</p> <ul style="list-style-type: none"> • PEF <33% of best or predicted • SpO₂ <92% • Silent chest, cyanosis, or poor respiratory effort • Arrhythmia or hypotension • Exhaustion, altered consciousness 	<p style="text-align: center; background-color: #003366; color: white; padding: 2px;">IMMEDIATE TREATMENT</p> <ul style="list-style-type: none"> • Oxygen to maintain SpO₂ 94–98% • β_2 bronchodilator (salbutamol 5 mg) via an oxygen-driven nebuliser • Ipratropium bromide 0.5 mg via an oxygen-driven nebuliser • Prednisolone tablets 40–50 mg or IV hydrocortisone 100 mg • No sedatives of any kind • Chest X-ray if pneumothorax or consolidation are suspected or patient requires mechanical ventilation <p>IF LIFE-THREATENING FEATURES ARE PRESENT:</p> <ul style="list-style-type: none"> • Discuss with senior clinician and ICU team • Consider IV magnesium sulphate 1.2–2 g infusion over 20 minutes (unless already given) • Give nebulised β_2 bronchodilator more frequently eg salbutamol 5 mg up to every 15–30 minutes or 10 mg per hour via continuous nebulisation (requires special nebuliser)
<p>If a patient has any life-threatening feature, measure arterial blood gases. No other investigations are needed for immediate management.</p> <p>Blood gas markers of a life-threatening attack:</p> <ul style="list-style-type: none"> • 'Normal' (4.6–6 kPa, 35–45 mmHg) PaCO₂ • Severe hypoxia: PaO₂ <8 kPa (60 mmHg) irrespective of treatment with oxygen • A low pH (or high H⁺) <p>Caution: Patients with severe or life-threatening attacks may not be distressed and may not have all these abnormalities. The presence of any should alert the doctor.</p>	<p style="text-align: center; background-color: #003366; color: white; padding: 2px;">SUBSEQUENT MANAGEMENT</p> <p>IF PATIENT IS IMPROVING continue:</p> <ul style="list-style-type: none"> • Oxygen to maintain SpO₂ 94–98% • Prednisolone 40–50mg daily or IV hydrocortisone 100 mg 6 hourly • Nebulised β_2 bronchodilator with ipratropium 4–6 hourly <p>IF PATIENT NOT IMPROVING AFTER 15–30 MINUTES:</p> <ul style="list-style-type: none"> • Continue oxygen and steroids • Use continuous nebulisation of salbutamol at 5–10 mg/hour if an appropriate nebuliser is available. Otherwise give nebulised salbutamol 5 mg every 15–30 minutes • Continue ipratropium 0.5 mg 4–6 hourly until patient is improving <p>IF PATIENT IS STILL NOT IMPROVING:</p> <ul style="list-style-type: none"> • Discuss patient with senior clinician and ICU team • Consider IV magnesium sulphate 1.2–2 g over 20 minutes (unless already given) • Senior clinician may consider use of IV β_2 bronchodilator or IV aminophylline or progression to mechanical ventilation
<p>Near-fatal asthma</p> <ul style="list-style-type: none"> • Raised PaCO₂ • Requiring mechanical ventilation with raised inflation pressures 	<p style="text-align: center; background-color: #003366; color: white; padding: 2px;">MONITORING</p> <ul style="list-style-type: none"> • Repeat measurement of PEF 15–30 minutes after starting treatment • Oximetry: maintain SpO₂ >94–98% • Repeat blood gas measurements within 1 hour of starting treatment if: <ul style="list-style-type: none"> - initial PaO₂ <8 kPa (60 mmHg) unless subsequent SpO₂ >92% or - PaCO₂ normal or raised or - patient deteriorates • Chart PEF before and after giving β_2 bronchodilator and at least 4 times daily throughout hospital stay <p>Transfer to ICU accompanied by a doctor prepared to intubate if:</p> <ul style="list-style-type: none"> • Deteriorating PEF, worsening or persisting hypoxia, or hypercapnia • Exhaustion, altered consciousness • Poor respiratory effort or respiratory arrest
<p style="text-align: center; background-color: #003366; color: white; padding: 2px;">Peak Expiratory Flow Rate - Normal Values</p> <p style="font-size: small;">Adapted by Clement Clarke for use with EN13826/EU scale peak flow meters from Nunn AJ Gregg I, Br Med J 1989;298:1068-70</p>	<p style="text-align: center; background-color: #003366; color: white; padding: 2px;">DISCHARGE</p> <p>When discharged from hospital, patients should have:</p> <ul style="list-style-type: none"> • Been on discharge medication for 12–24 hours and have had inhaler technique checked and recorded • PEF >75% of best or predicted and PEF diurnal variability <25% unless discharge is agreed with respiratory physician • Treatment with oral steroids (prednisolone 40–50 mg until recovery - minimum 5 days) and inhaled steroids in addition to bronchodilators • Own PEF meter and written asthma action plan • GP follow up arranged within 2 working days • Follow-up appointment in respiratory clinic within 4 weeks <p>Patients with severe asthma (indicated by need for admission) and adverse behavioural or psychosocial features are at risk of further severe or fatal attacks.</p> <ul style="list-style-type: none"> • Determine reason(s) for exacerbation and admission • Send details of admission, discharge and potential best PEF to GP