EASY ASTHMA FLOWCHARTS®

A QUICK GUIDE FOR ASTHMA MANAGEMENT IN ADULTS AND CHILDREN > 12 YEARS

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INITIAL MANAGEMENT OF ACUTE ASTHMA IN ADULTS & CHILDREN > 12 YEARS

Assess Asthma Severity by History, Physical Examination, Oxygen Saturation, and PEFR

**Moderate**
- Talking Phrases or full sentences
- Agitated but alert
- Respiratory Rate 20-30/min
- May or may not use accessory muscles
- Heart Rate <120/min
- SaO₂ on R/A >92%
- PEFR of 50-75% of predicted

**Severe**
- Talking only words or unable to complete sentence
- Agitated
- Respiratory Rate >30/min
- Use of accessory muscles
- Heart Rate >120/min
- SaO₂ on R/A <92%
- PEFR of 30-50% of predicted

**Life Threatening**
- Unable to talk
- Confused, drowsy, or coma
- Respiratory Rate >30/min or in respiratory failure
- Use of accessory muscles
- Heart Rate >120/min or bradycardia, and silent chest
- SaO₂ on R/A <90% or Cyanosis
- Normal or high PaCO₂, Acidosis
- PEFR of <30% of predicted

If patient has features of more than one level of severity, patient should be classified to the higher level and managed accordingly.

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TREATMENT

- Oxygen to keep SaO₂ ≥92%
- Salbutamol can be delivered by either:
  - MDI with spacer: 6-10 puffs every 20 min for 1 hour, then every 1-2 hours according to response
  - Nebulized salbutamol 2.5-5 mg every 20 min for 1 hour, then every 4-6 hours as needed
- Oral prednisone 1 mg/kg up to 50 mg STAT

- Salbutamol 2.5-5 mg every 20 min for 1 hour, then every 30-60 min according to response
- Ipratropium bromide 0.5 mg nebulized every 20 min for 1 hour, then every 4-6 hours as needed
- Oral prednisone 1 mg/kg up to 50 mg STAT; alternatively, IV hydrocortisone 200 mg/day or IV methylprednisolone 80 mg/day
- Consider magnesium sulphate 1-2 g IV over 20 min
- Consider ABG, CXR

- High flow oxygen to keep SaO₂ ≥92%
- Continuous nebulized salbutamol 10-15 mg by with ipratropium bromide 1.5 mg, then Q4-6 hour according to response
- IV hydrocortisone 200 mg/day or IV methylprednisolone 80 mg/day
- Magnesium sulphate 1-2 g IV over 20 min
- ABG, CXR, CBC, electrolytes, urea, creatinine, glucose, ECG

TREATMENT

Upon Discharge

- Oxygen to keep SaO₂ ≥92%
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FOLLOW-UP MANAGEMENT OF ACUTE ASTHMA IN ADULTS & CHILDREN > 12 YEARS

Reassess Asthma Severity by History, Physical Examination, Oxygen Saturation, and PEFR

**Adequate Response**
- Improving symptoms and stable vital signs
- PEFR >65% of predicted
- SaO₂ ≥92%
- Adequate response to be maintained for at least 4 hours
- Continue bronchodilators therapy (salbutamol with ipratropium bromide) every 1-4 hour
- Continue oral prednisone for 5-7 days

**Partial Response**
- Minimal improvement of respiratory symptoms
- Stable vital signs
- SaO₂ ≥92% on oxygen therapy
- PEFR 30-50% of predicted
- Continue bronchodilators therapy (salbutamol with ipratropium bromide) every 1-4 hour

**Poor Response**
- No improvement of respiratory symptoms
- Signs of fatigue or exhaustion
- PEFR <30% of predicted
- SaO₂ <92% with high flow oxygen
- ABG shows respiratory acidosis and/or rising PaCO₂

Upon Discharge

- Continue oral prednisone 1mg/kg (maximum dose 50mg) daily; alternatively, IV hydrocortisone 200 mg/day or IV methylprednisolone 80 mg/day
- Monitor closely for any signs of fatigue or exhaustion
- Observe closely for any signs of fatigue or exhaustion
- Monitor 0, saturation and PEFR
- If the patient is responding, follow “adequate response” track
- If there is no adequate response after 4 hours, consider admission

- Continue bronchodilators and systematic steroids
- ICU consultation for possible admission

What is next?

Adequate Response
- Continue bronchodilators for 1-4 hours PRN

Partial Response
- Continue bronchodilators therapy (salbutamol with ipratropium bromide) every 1-4 hour

Poor Response
- Continue bronchodilators and systematic steroids

What is next?
**Initiation**
- History & physical examination
- Obtain ACT score and PEFR
- Patient education and environmental control of triggers/inducers
- Assess for aggravating factors e.g., GERD, allergic rhinitis
- Based on ACT result, initiate therapy as follows:

  - ACT ≥ 20: Patients with risk factors or fixed obstruction
  - ACT = 16-19: Severe uncontrolled asthma at presentation
  - ACT < 16: Patients with risk factors or fixed obstruction

**Adjustment and Maintenance**
- Clinical assessment
- Obtain ACT score and PEFR
- Based on ACT, adjust treatment as follows:
  - ACT = 20-25: Well controlled → Maintain treatment with lowest dose of ICS or step down
  - ACT < 19: Uncontrolled → Step up

**STEP 1**
- Recommended
  - Salbutamol Inhaler as needed

**STEP 2**
- Recommended
  - Low dose ICS
- Alternative:
  - Formoterol/ICS combination as needed
  - LTRA

**STEP 3**
- Recommended
  - Low-medium dose ICS+LABA
  - AND
  - ± Tiotropium
  - ± LTRA
  - ± Theophylline
  - Refer to a Specialist

**STEP 4**
- Recommended
  - Medium-high dose ICS+LABA
  - AND
  - ± Tiotropium
  - ± LTRA
  - ± Theophylline

**STEP 5**
- Recommended
  - Step 4 options +
  - Biologic therapy as appropriate
  - AND/OR
  - Long-term oral steroids
  - Consider other modalities for severe asthma

**A reliever inhaler on as needed basis** (Salbutamol or Formoterol/ICS combination)

**Patient education, environmental control, and management of comorbidities**

**ACT** = Asthma Control Test, **ICS** = Inhaled Corticosteroids, **LABA** = Long Acting β₂ Agonist, **LTRA** = Leukotriene Receptor Antagonist, **PEFR** = Peak Expiratory Flow Rate

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