

## Asthma Key Messages

### Definition and Diagnosis

- *Asthma is a **chronic inflammatory disorder** of the airways that causes **recurrent episodes of coughing, wheezing, breathlessness, and chest tightness**. These episodes are usually associated with **reversible airflow obstruction** (airway hyper-responsiveness) either spontaneously or with treatment.*
- Asthma causes significant morbidity and cost to healthcare resources especially severe asthma.
- Although asthma is **multifactorial in origin**, inflammation is believed to be the cornerstone of the disease and is thought to result from inappropriate immune responses to a variety of antigens in genetically susceptible individuals.
- The cells most important in orchestrating this misdirected immune response in the airways are dendritic cells and **CD4 Th2 lymphocytes**.
- Asthma is broadly divided into **early onset (<12 years old) or Atopic asthma** (allergic) or **late onset (>12 years old) or Adult onset asthma** which is usually non atopic but may have atopic group as well (30%).
- **Aspirin Sensitive asthma** (10% of asthmatics) is characterised by asthma, chronic rhinosinusitis & nasal polyposis.
- Asthma is **diagnosed on history** (recurrent episodes of coughing, wheezing, breathlessness, and chest tightness often associated with **allergic triggers**), **examination** (wheeze) and **lung function** (spirometry showing reversible airflow obstruction).
- A good history should differentiate between **high or low probability of asthma** (see diagnostic algorithm BTS guidelines – link given below)
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- **Chest X-ray** is usually normal in asthma.

### Differential Diagnosis

- Always remember to exclude alternate causes e.g. (**COPD** if smoker and age>40, **Bronchiectasis** if daily large amount of sputum, **Heart Failure** if swollen ankles, orthopnea, PND or hypertension, **Obesity** as a cause of exertional shortness of breath).

### Management of stable asthma

- Key to asthma management is emphasis on **patient education**, understanding of asthma and **compliance** to treatment.
- Asthma management includes **Bronchodilators** inhalers (e.g. beta agonists) and steroid inhalers (**anti-inflammatory**) and **allergen avoidance**.
- **Other drugs** used in management of asthma may include anti-leukotrienes (Montelukast), theophylline and anti-IgE therapy (Omalizumab).

### Further Reading

- Any good medical textbook e.g. Textbooks by Kumar Clark & Davidson
- British Thoracic Society guidelines (**BTS**) **September 2016** <https://www.brit-thoracic.org.uk/standards-of-care/guidelines/btssign-british-guideline-on-the-management-of-asthma/>
- **GINA** (Global Initiative for asthma) Guidelines <http://ginasthma.org/gina-reports/>
- **Saudi** thoracic society Guidelines <http://saudithoracic.com/download/SINA%20Guidelines%202016.pdf>