



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT: ALLIED HEALTH SCIENCES
COURSE NAME: PAEDIATRICS

Topic: Status Asthmaticus



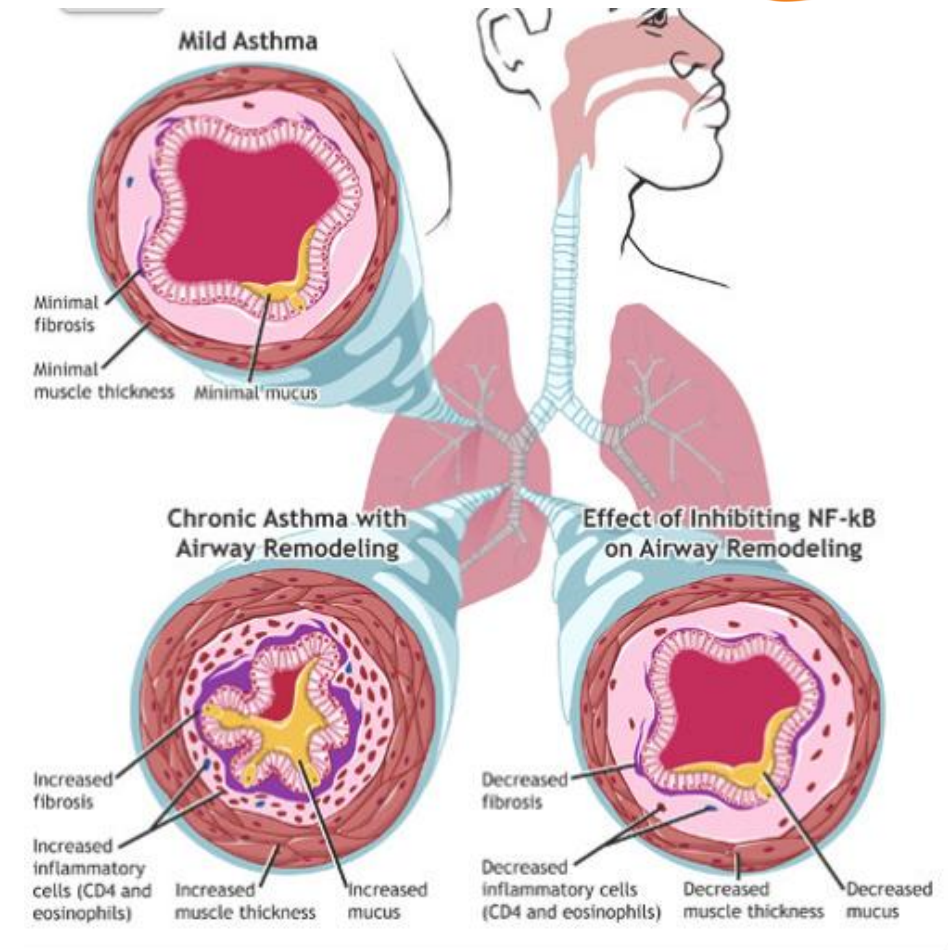
Case scenario



- A 12year old girl with a history of asthma presented to the emergency department with a three day history of increased work of breathing(40 breath/min), cough and wheezing and she had noted symptoms of mild lower respiratory tract infection. Her chest x-ray showed hyper infiltrates and no focal findings and she was treated with short acting bronchodilator ,antibiotics

Definition

- Status asthmaticus refers to an acute asthma exacerbation in which bronchial obstruction is severe and continues to worsen or not improve despite the institution of adequate standard therapy, leading to respiratory failure.





Etiology & Signs and symptoms



- An upper respiratory infection is one of the most common causes of a status asthmaticus attack. The infection increases the amount of mucus in a person's lungs, making it harder for them to breathe. Other potential causes include: allergic reactions to foods.

Signs and symptoms

- Cough, prolonged expiratory phase, and wheezing, Shortness of breath.
- Can't speak in full sentences.
- Feel breathless even when you lie down.
- Chest feels tight.
- Bluish tint to your lips.
- Feel agitated, confused, or can't concentrate.
- Hunched shoulders, and strained muscles in your stomach and neck.



- Dry Cough (Weeks)
- Cough with phlegm



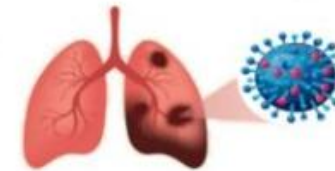
- Blueness of the lips or fingernail beds



- Tightness of chest



- Shortness of breath



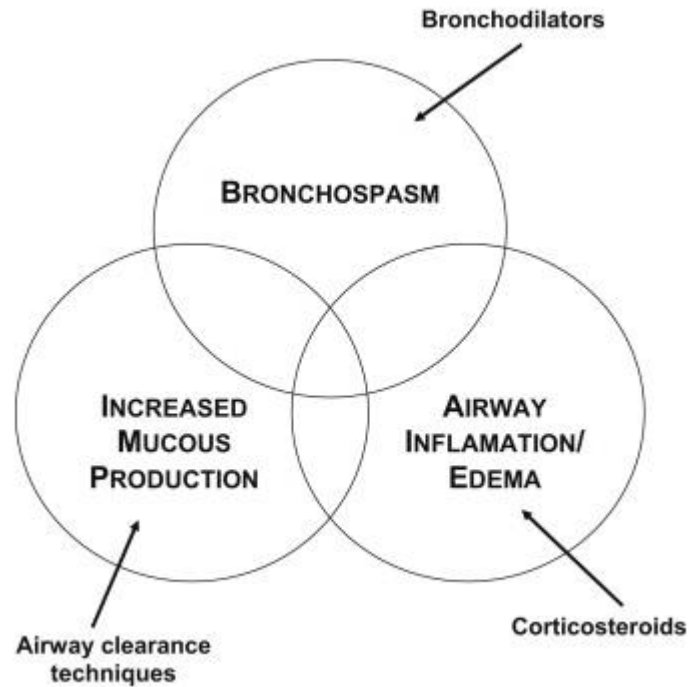
- Frequent respiratory infection



- Lack of energy



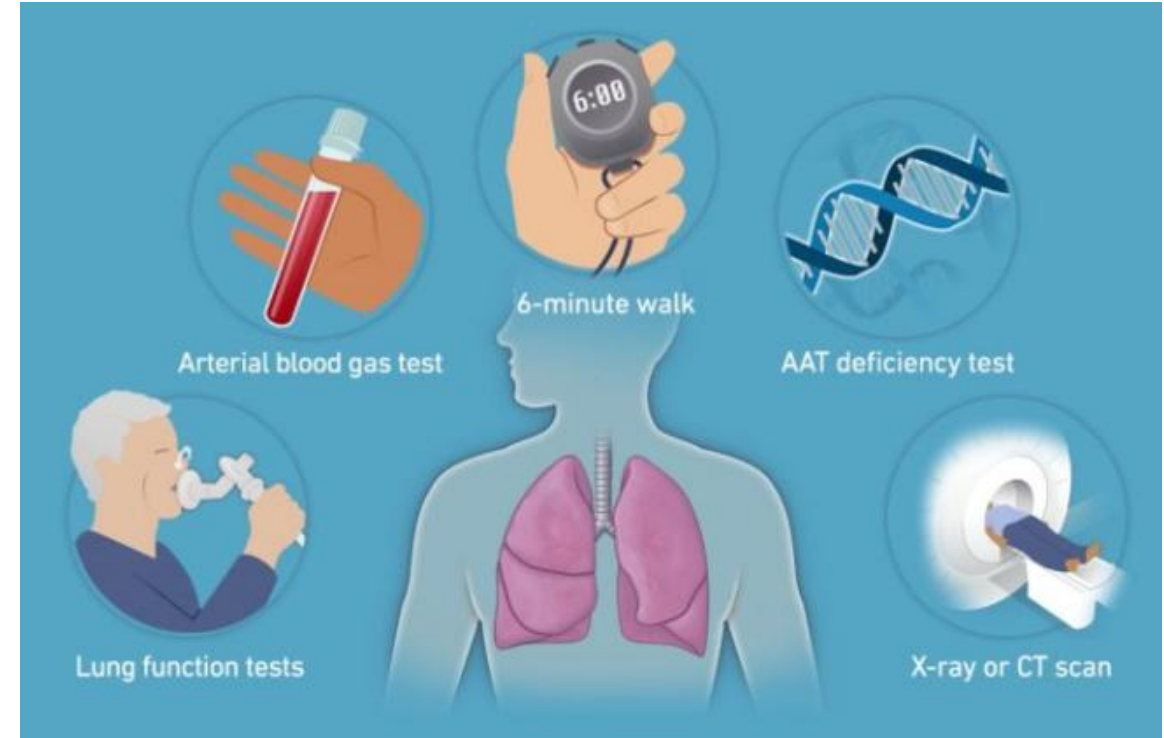
Pathophysiology



- This pathophysiology results in increased pulmonary resistance, small airway collapse, and dynamic hyperinflation. Unlike during normal breathing, in status asthmaticus a child's inspiratory muscle activity can persist through exhalation, significantly increasing respiratory muscle workload and fatigue.

Investigations

- **Lung function tests, also called spirometry-** Spirometry measures how much air the child can exhale and how quickly. the child might have lung function tests at rest, after exercising and after taking asthma medicine.
- Another lung function test is bronchoprovocation. Using spirometry, this test measures how the lungs react to certain provocations, such as exercise or exposure to cold air.
- **Exhaled nitric oxide test-** measuring the level of nitric oxide in an exhaled sample of the child's breath. Nitric oxide testing also can help determine whether steroid medicines might be helpful for child's asthma.





Management



Initial treatment depends on the severity of your child's asthma. The goal of asthma treatment is to keep symptoms under control, meaning that your child has:

- Minimal or no symptoms.
- Few or no asthma flare-ups.
- No limitations on physical activities or exercise.
- Minimal use of quick-relief inhalers, such as albuterol (ProAir HFA, Ventolin HFA, others). These also are called rescue inhalers.
- Few or no side effects from medicines.
- Treating asthma involves both preventing symptoms and treating an asthma attack in progress. The right medicine for your child depends on a few things, including:
 - Age.
 - Symptoms.
 - Asthma triggers.
 - What seems to work best to keep your child's asthma under control.
- For children younger than age 3 who have mild symptoms of asthma, your provider might use a wait-and-see approach. This is because the long-term effects of asthma medicine in infants and young children aren't clear.
- However, if an infant or toddler has frequent or severe wheezing episodes, a health care provider might prescribe a medicine to see if it improves symptoms.



long-term control medicines



Types of long-term control medicines include:

- **Inhaled corticosteroids-** These medicines include fluticasone (Flovent Diskus), budesonide (Pulmicort Flexhaler), mometasone (Asmanex HFA), ciclesonide (Alvesco), beclomethasone (Qvar Redihaler) and others.
- **Leukotriene modifiers.** These oral medicines include montelukast (Singulair), zafirlukast (Accolate) and zileuton (Zyflo). They help prevent asthma symptoms for up to 24 hours.





long-term control medicines



- **Combination inhalers.** These medicines contain an inhaled corticosteroid plus a long-acting beta agonist (LABA). They include fluticasone and salmeterol (Advair Diskus), budesonide and formoterol (Symbicort), fluticasone and vilanterol (Breo Ellipta), and mometasone and formoterol (Dulera).
- **Theophylline (Theo-24).** This is a daily pill that helps keep the airways open.
- **Immunomodulatory agents.** Mepolizumab (Nucala), dupilumab (Dupixent) and benralizumab (Fasenra) might be appropriate for children over the age of 12 who have severe eosinophilic asthma. Omalizumab (Xolair) can be considered for children age 6 or older who have moderate to severe allergic asthma.



Quick-relief medicines



- **Quick-relief medicines**
- Quick-relief medicines quickly open swollen airways. Also called rescue medicines, quick-relief medicines are used as needed for rapid, short-term symptom relief during an asthma attack — or before exercise if your child's health care provider recommends it.

Types of quick-relief medicines include:

- **Short-acting beta agonists.** These inhaled bronchodilator medicines can rapidly ease symptoms during an asthma attack. They include albuterol and levalbuterol (Xopenex HFA). These medicines act within minutes, and effects last several hours.
- **Oral and intravenous corticosteroids.** These medicines relieve airway inflammation caused by severe asthma. Examples include prednisone and methylprednisolone. They can cause serious side effects when used long term, so they're only used to treat severe asthma symptoms on a short-term basis.



Treatment for allergy-induced asthma



Treatment for allergy-induced asthma

- **Omalizumab.** This medicine is for people who have allergies and severe asthma. It reduces the immune system's reaction to allergy-causing substances, such as pollen, dust mites and pet dander. Omalizumab is delivered by injection every 2 to 4 weeks.
- **Allergy medicines.** These include oral and nasal spray antihistamines and decongestants as well as corticosteroid, cromolyn and ipratropium nasal sprays.
- **Allergy shots, also called immunotherapy.** Immunotherapy injections are generally given once a week for a few months, then once a month for a period of 3 to 5 years. Over time, they gradually reduce your child's immune system reaction to specific allergens.