

ASTHMA



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Shaping Lives...
Empowering Communities...

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INTRODUCTION:

Asthma is a chronic respiratory condition that affects the airways in the lungs. It is characterized by inflammation and narrowing of the airways, which can cause difficulty breathing, coughing, wheezing, and chest tightness. Asthma can range from mild to severe and can be triggered by various factors, including allergies, exercise, and respiratory infections.

TYPES:

- **Allergic asthma:** This is the most common type of asthma and is triggered by allergens such as dust mites, pollen, and pet dander.
- **Exercise-induced asthma:** This type of asthma is triggered by physical activity or exercise.
- **Occupational asthma:** This type of asthma is caused by exposure to certain substances in the workplace, such as chemicals or dust.
- **Non-allergic asthma:** This type of asthma is triggered by factors other than allergens, such as stress, anxiety, and irritants like smoke or air pollution.
- **Childhood-onset asthma:** This type of asthma develops in childhood and can persist into adulthood.
- **Adult-onset asthma:** This type of asthma develops in adulthood and can be triggered by a variety of factors, including respiratory infections, hormonal changes, and stress.
- **Severe asthma:** This is a more severe form of asthma that is difficult to control with standard medications and treatments.

ETIOLOGY/CAUSES:

- **Genetics:** Asthma tends to run in families, and certain genes have been associated with an increased risk of developing the condition.

- **Allergies:** Allergic reactions to substances such as pollen, dust mites, animal dander, and certain foods can trigger asthma symptoms.
- **Environmental factors:** Exposure to air pollution, tobacco smoke, and other irritants can increase the risk of developing asthma or trigger symptoms in people who already have the condition.
- **Respiratory infections:** Viral infections such as the common cold or flu can trigger asthma symptoms in some people.
- **Obesity:** Being overweight or obese has been linked to an increased risk of asthma.
- **Occupational factors:** Certain jobs that involve exposure to dust, fumes, or other irritants can increase the risk of developing asthma.
- **Stress:** Emotional stress and anxiety can trigger asthma symptoms in some people.

PATHOPHYSIOLOGY:

- Asthma is a chronic respiratory condition that develops when the airways in the lungs become inflamed and narrow, making it difficult to breathe.
- Trigger exposure: Asthma symptoms can be triggered by a variety of factors, including allergens, irritants, respiratory infections, exercise, and emotional stress.
- Inflammatory response: When a trigger is encountered, the body's immune system is activated and then IgE binds with the mast cell and other immune cells to produce different inflammatory mediators to initiate an inflammatory response in the airways, causing swelling.
- Increased mucus production from a damaged mucus membrane blocks the airway.
- Constriction of airways: The inflammation and excess mucus production can cause the muscles around the airways to constrict, further narrowing the airways and making it difficult to breathe.

CLINICAL MANIFESTATION/SIGN & SYMPTOMS:

- **Wheezing:** A whistling sound when breathing, especially during exhaling.
- **Shortness of breath:** A feeling of breathlessness or an inability to catch one's breath.
- **Chest tightness:** A sensation of pressure or tightness in the chest.
- **Coughing:** A persistent cough, especially at night or early morning.
- **Rapid breathing:** Breathing faster than normal, especially during physical activity.
- **Difficulty breathing:** Feeling like you can't catch your breath or like you're suffocating.
- **Fatigue:** Feeling tired or weak, especially during an asthma attack.

CLINICAL EVALUATION/DIAGNOSIS:

- **Spirometry:** This test measures how much air you can exhale after taking a deep breath and how fast you can exhale. It can help determine how well your lungs are functioning.
- **Peak flow measurement:** This test involves using a peak flow meter, a handheld device that measures how much air you can exhale in one breath. It can help monitor your asthma symptoms over time.
- **Chest X-ray or CT scan:** These imaging tests can help rule out other conditions that may cause similar symptoms, such as pneumonia or lung cancer.
- **Allergy testing:** If allergies are suspected as a trigger for asthma, your doctor may recommend skin or blood tests to identify specific allergens that may be causing your symptoms.

PHARMACOLOGICAL MANAGEMENT:

- **Inhaled corticosteroids:** These medications reduce inflammation in the airways and help prevent asthma symptoms. Examples include **beclomethasone, budesonide, fluticasone, and mometasone.**
- **Long-acting bronchodilators:** These medications relax the muscles in the airways and help prevent asthma symptoms. Examples include **formoterol and salmeterol.**
- **Combination inhalers:** These medications contain both an inhaled corticosteroid and a long-acting bronchodilator. Examples include **fluticasone/salmeterol and budesonide/formoterol.**
- **Leukotriene modifiers:** These medications block the action of leukotrienes, which are chemicals that contribute to inflammation in the airways. Examples include **montelukast and zafirlukast.**
- **Short-acting bronchodilators:** These medications provide quick relief of asthma symptoms by relaxing the muscles in the airways. Examples include **albuterol and levalbuterol.**
- **Immunomodulators:** These medications help regulate the immune system and reduce inflammation in the airways. Examples include **omalizumab and mepolizumab.**

NON PHARMACOLOGICAL MANAGEMENT/PREVENTION:

- **Identify and avoid triggers:** Common triggers include allergens (such as pollen, dust mites, and animal dander), air pollution, tobacco smoke, respiratory infections, and exercise. Try to avoid or minimize exposure to these triggers whenever possible.
- **Take medication as prescribed:** If you have been prescribed medication for asthma, it's important to take it as directed by your healthcare professional, even if you're feeling well.
- **Maintain good air quality:** Use air filters in your home, avoid

using harsh cleaning chemicals or perfumes, and keep your home well-ventilated.

- **Manage allergies:** If you have allergies, work with your healthcare professional to manage them effectively, as allergies can exacerbate asthma symptoms.
- **Maintain a healthy lifestyle:** Eating a balanced diet, staying physically active, maintaining a healthy weight, and avoiding smoking can all help reduce the risk of asthma symptoms.
- **Get regular check-ups:** Regular visits with your healthcare professional can help monitor your asthma symptoms and adjust your treatment plan as needed.

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