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A Review on Asthma

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ABSTRACT :

Asthma is a chronic medical condition in which the airways become restricted and inflamed, leading to difficulty breathing. It affects people of all ages and can be triggered by allergens such as pollen, dust mites and pet dander. A condition in which a person's airways become inflamed, narrow and swell and produce extra mucus, which makes it difficult to breath. Asthma can be minor or it can interfere with daily activities. In some cases, it may lead to a life-threatening attack. Asthma may cause difficulty breathing, chest pain, cough and wheezing. The symptoms may sometimes flare up. Asthma can usually be managed with rescue inhalers to treat symptoms (salbutamol) and controller inhalers that prevent symptoms (steroids). Severe cases may require longer-acting inhalers that keep the airways open (formoterol, salmeterol, tiotropium), as well as inhalant steroids.

Keywords: Allergens, Symptoms, Cough, Chest Pain, Wheezing.

Introduction

A chronic lung illness that affects both adults and children worldwide is asthma. Airway blockage, airway irritation, inflammation, coughing, wheezing during breathing, chest pain, and shortness of breath are the main symptoms of asthma (Dharmage Perret, & Custovic, 2019). Asthma is primarily triggered by tobacco smoking, air pollution, cold, and aspirin. Step-up or step-down and allergens are important components of a step-wise approach to asthma control. The muscles around your airways relax when you breathe regularly, allowing air to pass through them smoothly and silently. Three things may occur during an asthma attack:

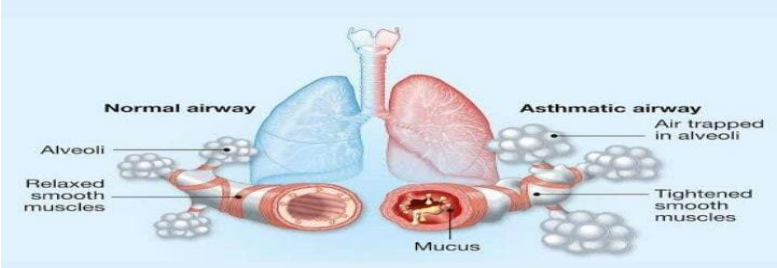

Fig.1 Asthma : Inflamed bronchial tube

The muscles around the airways tighten (constrict) in bronchospasm. They constrict your airways as they tighten. In narrowed airways, air cannot move freely. Your airways' lining swells as a result of inflammation. Less air may enter or exit your lungs when your airways are swollen. Production of mucous: Your body produces more mucus during the attack. Airways are blocked by this viscous mucus. Wheezing is the sound your airways produce when you exhale, and it occurs when your airways become constricted. An asthma attack may also be referred to as a flare-up or an exacerbation. That's what happens when your asthma isn't under control.

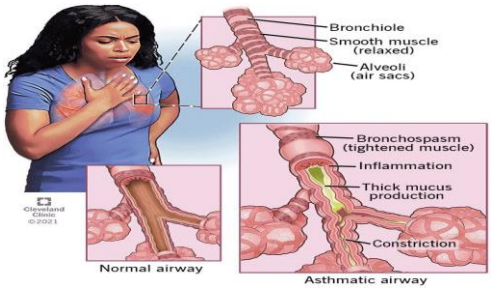

Fig.2: Asthmatic airway

Class	Name	Age*	Asthma indication*	Other indications*
Anti-IgE	Omalizumab (SC)	≥6 years	Severe allergic asthma	Nasal polyposis, chronic spontaneous urticaria
Anti-IL5 Anti-IL5R	Mepolizumab (SC) Reslizumab (IV) Benralizumab (SC)	≥6 years ≥18 years ≥12 years	Severe eosinophilic/Type 2 asthma	Mepolizumab: EGPA, CRSwNP, hypereosinophilic syndrome
Anti-IL4R	Dupilumab (SC)	≥6 years	Severe eosinophilic/Type 2 asthma, or maintenance OCS	Moderate-severe atopic dermatitis, CRSwNP
Anti-TSLP	Tezepelumab (SC)	≥12 years	Severe asthma	

Observation table no : 1

Categories Of Asthma :

Types of Asthma

1. Asthma with allergies
2. Asthma that isn't allergic
3. Asthma that Develops in Childhood
4. Asthma with an adult onset

1. Allergic Asthma: Usually brought on by exposure to allergens such as mold, dust mites, pollen, and pet dander.

2. Non-Allergic Asthma: Stress, physical activity, cold air, smoke, strong odors, and respiratory infections are triggers for this form of asthma.

3. Childhood-Onset Asthma: Usually develops in childhood as a result of exposure to allergens or a genetic susceptibility. As the person ages, it may continue or go away.

4. Adult-Onset Asthma: This kind may develop later in life as a result of environmental influences, occupational exposures, or hormonal changes.

Also types based on the cause and the severity of symptoms.

Intermittent: This kind of asthma flares up and goes away, allowing you to feel normal in between episodes.
Persistent: Those who have persistent asthma experience symptoms most of the time. Mild, moderate, and severe symptoms are all possible. The frequency of symptoms is used by medical professionals to determine the severity of asthma. They also take into account your ability to perform tasks during an attack.

SYMPTOMS AND CAUSES

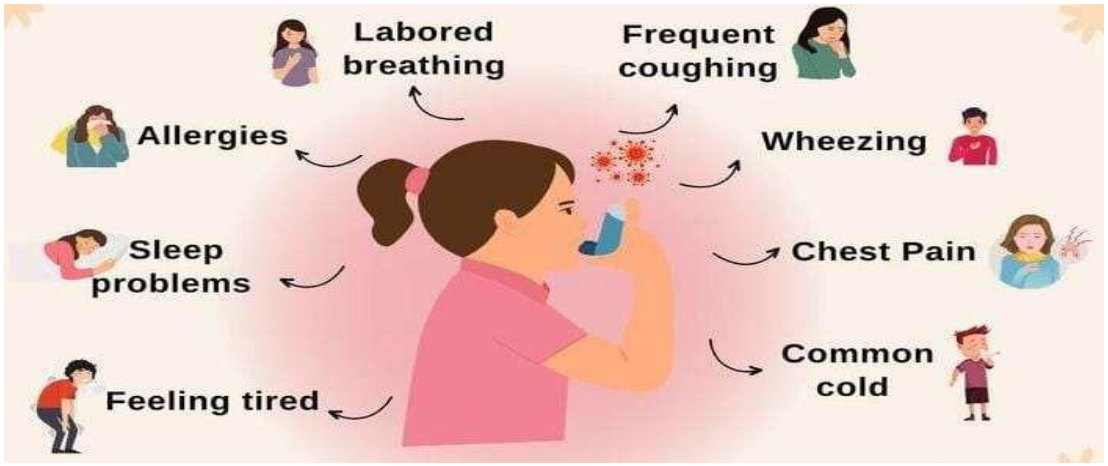

Fig.3 : Asthama : Symptoms and causes

Allergies: Asthma risk might be increased by having allergies. Environmental factors: After being exposed to items that irritate the airways, people may acquire asthma. Allergens, poisons, vapors, and second- or third-hand smoke are examples of these substances. Infants and young children, whose immune systems are still growing, may be particularly vulnerable to them. Genetics: You are more likely to get asthma or other allergy disorders if your family has a history of them. Respiratory infections: The developing lungs of young children may sustain harm from certain respiratory infections, such

as respiratory syncytial virus (RSV). Air pollution: An asthma attack can be brought on by a variety of outdoor factors. Factory emissions, vehicle exhaust, smoke from wildfires, and other sources are examples of air pollution.

- Dust mites: Although invisible, these insects exist in our houses. This can trigger an asthma attack if you have a dust mite allergy.
- Exercise: Exercise may trigger an attack in certain individuals.
- Mold: If you have asthma, mold might be problematic since it grows in damp areas. To have an attack, you don't even need to be allergic to mold.
- Pests: Asthma episodes can be brought on by mice, cockroaches, and other household pests.
- Pets: Your animals may trigger asthma episodes. Inhaling pet dander, which is made up of dried skin flakes, can cause irritation to your respiratory system if you have an allergy to it.
- Tobacco smoke: You are more likely to get asthma if you or anybody in your household smokes.

CONCLUSION

In Canada, asthma is the most prevalent respiratory condition and a major cause of morbidity and mortality. Patients who experience recurrent coughing, wheezing, chest tightness, and dyspnea should be suspected of having asthma. Objective measurements of lung function, such as spirometry, should be used to confirm the diagnosis. To find potential causes of asthma symptoms, allergy testing is also advised. The majority of individuals' asthma can be controlled with the use of suitable medication and avoidance techniques. For most people with asthma, ICSs are the recommended course of treatment. For most people, combination therapy involving an ICS and a LABA is the recommended course of treatment for individuals who are unable to attain control with low-to-moderate ICS dosages.

Certain types of asthma that are hard to manage may benefit from anti-Ig E medication. Only doctors with the necessary allergy training should prescribe allergen-specific immunotherapy, a potentially disease-modifying treatment. At routine follow-up visits, all asthmatic patients should have their asthma control criteria, treatment compliance, and inhaler technique assessed.

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