ASTHMA

[Name of the Writer]

[Name of the Institution]

**ASTHMA**

1. Asthma is a problem that affects every age group. In fact, age is one of the factors that causes complications for the patient. Chronic asthma is a chronic inflammatory syndrome of the bronchial mucosa. It can cause variable airflow obstruction, airways constriction and hyper-responsiveness of the bronchial cavity. It is the bronchoconstriction stimuli and rises in mucus secretion on a cellular level. Pathophysiology of chronic asthma can damage the lungs through epithelial cells. Toxic neuropeptides and eosinophil are released at the early stages of asthma which put a negative and direct impact on the tissue causing high bronchial hyper-responsiveness. In addition, the patient faces difficulty in oxygenation because of the constriction of the airway. Just as in chronic asthma, the patient experiences airways constriction and acute asthma exacerbation. However, the number of cells contribute to the airways hypersensitivity in case of acute asthma exacerbation. These cells include B lymphocytes, basophils, eosinophil, mast cells, T helper 2 lymphocytes, neutrophils and dendritic. These cells can also cause an increase in secretions, edema, and bronchospasm by acting differently during the latest release of inflammatory cells. Chronic asthma attacks are less prominent than the acute asthma exacerbation because the patient has the fast asthmatic response of their inflammatory cells (Program & Asthma, 2007).
2. Through hyperventilation, the patient faces issues with the arterial blood gas. It results in hypoxemia, which leads to respiratory alkalosis which means an increase in PH. Just like chronic asthma, the arterial blood gas get affected due to the exacerbations also. The expirations and inspirations become uneven. Inspirations become shorter while expirations become longer. This unevenness results in oxygenation that the patient receives. Patient having acute asthma exacerbation tries to trap air that causes respiratory disadvantage. It also results in respiratory acidosis due to the increase in CO2 and a decrease in tidal volume (*Asthma*, 2019).
3. Five to ten percent of the population faces the issue of asthma, in which seven million are children. 250000 deaths happen worldwide due to chronic asthma each year. Chronic asthma and acute asthma have similar factors that create the issue. These are allergens, respiratory infections, and other environmental factors. Allergens include the exposure and sensitization to the dust mite. It becomes the main factor causing asthma in children. In addition animals like cats, dogs, and cockroach exposure can also cause asthma. During infancy, there are the chances of asthma due to the development of various respiratory viruses. Exposure to infection in early life weak the immune system which results in the development of asthma. Other environmental factors that cause chronic asthma and acute asthma exacerbation include; smoking, occupations, diet, and air pollution. Clinical manifestation includes coughing, wheezing, anxiety, tripodding, shortness of breath, tachypnea, and pale skin (Castillo, Peters, & Busse, 2017).
4. Diagnosis of chronic asthma includes CXRay, pulse oximetry, exposure to allergens, recurrent respiratory infections, and pulmonary function test. It is important to know the inspirations and expirations of the patient. If the person faces uneven inspirations and expirations then there can be the possibility of asthma. It can be measured through pulmonary function test and pulse oximetry. In addition exposure to allergens is a crucial factor which can be helpful to diagnose the problem. Treatment for the cause include corticosteroids, a personalized plan, and oxygen in case of emergency. On the other hand diagnosis of acute asthma exacerbation includes peak flow and pulmonary function test to identify the shortness of breath, wheezing, chest tightness, and coughing. It can be treated through the administration of oxygen and magnesium, corticosteroids, and bronchodilators (“Understanding asthma pathophysiology, diagnosis, and management,” 2015).
5. **Mind Maps**

Leukotriene

Oxygen

Personalized plan

Allergen contact

Bronchodilators

Chronic Asthma

IgE production

Coughing

250000 deaths worldwide

Chest tightness

Tripodding

Affects 7 million children

CXRay

Anxiety

Affect 5-10 % of the population

Pulse oximetry

Risk factors

Breath shortness

Pale skin

Exposure to allergens

History of recurrent respiratory infections

T cell activation

Bronchodilators

Corticosteroids

Oxidation of lipids and proteins

Administration of oxygen and magnesium

Acute Asthma Exacerbation

Increase oxygen free radical production

Wheezing

Allergy

Chest tightness

Anxiety

Pollution

Peak flow

Coughing

Pulmonary function test

Family history

Shortness of breath

**References**

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