**Asthma**

**Introduction**

There are innumerable complications that are observed in varied cases of asthmatic issue. Hence, understanding the complications, this paper aims to examine pathophysiological mechanisms related to the two different types of asthma healthcare problems i.e. ‘acute asthma exacerbation’ and ‘chronic asthma’. The examination is undertaken because it is vital for an advanced nursing practitioner to understand the pathophysiological mechanisms of these two types of asthma. Hence, this paper encompasses a detailed description of the mechanisms associated with the health conditions, thereby explaining the changes in the patterns of ‘arterial blood gases’ at the time of exacerbation in the initial part. In the later part, the impact of age factor on both the disorders has been described for outlining the ways in which the different forms of asthma can be diagnosed and treated accordingly.

**Discussion**

Health Direct stated that it is highly important to control asthma as it may hamper one’s life. The people facing asthma problems may, in turn, feel fatigued, thereby leading to underperformance. Various physiological problems may also be faced such as depression and stress. In serious cases, it can also lead to respiratory complications such as lung infection, which can pose threat to one’s life (Health Direct, 2016). Considering its pathophysiology, it can be characterized by certain specific inflammation patterns that are driven by the e-dependent mechanisms of Immunoglobulin (Ig). It is also affected by genetic factors such as allergies of any form. Moreover, environmental factors are also an important determinant of whether the atopic patient would suffer from asthma or not (Barnes, 2003). Deriving this understanding, the two disorders will be further examined to help in diagnosing as well as treating the patients suffering from asthma.

**Pathophysiological Mechanisms**

Chronic Asthma. It is a type of disorder, which involves hyperinflation either in case of pectus excavatum or thorax. Moreover, clubbing with asthma is a serious condition which may, in turn, lead to health issues such as cystic fibrosis. Some of the patient suffering from chronic asthma may develop intolerance towards exercise, which may also indicate ‘*exercise-induced bronchoconstriction*’ (Huether & McCance, 2015).

Acute Asthma Exacerbation. The main symptoms of this disorder comprise wheezing, breathlessness, chest tightness as well as coughing. Its signs also involve the increased respiration and pulse-rate, agitation as well as decrease in lung functions. This can be measured with the help of peak expiratory flow (PEF), arterial oxygen saturation (SaO2), FEV1, partial carbon dioxide (PaCO2), and PaO2. However, difficulties while speaking sentences or phrases may be faced by the patients in this healthcare conditions depending upon the severity of exacerbation.

Therefore, it is found that based on the severity of respiratory healthcare problems, the choric and acute asthma exacerbation can be differentiated although both are the disorders related to asthma. According to Raimondi, Gonzalez, Zaltsman & Menga (2014), the levels of ‘arterial blood gas’ depicts slight decrease in the pressure of PaCO2 without any significant changes or abnormalities observed in the saturation of arterial oxygen. On the other hand, in case of severe exacerbation, the PaCO2 is normal or might increase with the low level of hypoxemia. This has been evident in severe patients, who at times show metabolic acidosis (Raimondi et al., 2014).

**Age Factor Influencing the Pathophysiological Mechanisms**

It has been found that majority of the types of asthma is linked with atopy and can be evident at all stages of early childhood. However, people after the age of 40 can also suffer from other types of asthma, which are not dependent on atopy. These types of asthma are non-allergic in nature and its pathogenic pathway is yet to be clearly identified (Holgate, 2008). Hence, detailed analysis of this age factor among the two vital types of asthma will be further undertaken in order to understand the severity in their respective ages.

Chronic Asthma. It has further been observed that elderly asthmatic patients are highly prone to mortality or morbidity risks as compared to the younger patients. This is because vital age-related changes occur in immunological and physiologic terms. This in-turn increases complication while presenting, treating, diagnosing and managing the health conditions, especially among the older adults (Dunn, Busse & Wechsler, 2018). Hence, diagnosis of these types of asthma can be undertaken by identifying its symptoms through tests and clinical assessments. It has further been stated that adults aged over 17 years can be diagnosed only if they show symptoms of examining FeNO levels. The patients of all ages i.e. adults, children and young people can be treated with medication and other expensive treatment procedures such as preventer inhaler. For instance, low dosage of inhaled corticosteroids (ICS) for adults along with maintenance therapy also proves to be a quite effective means (Bloomer, 2017).

Acute Asthma Exacerbation. It had been reported that 84 children of age 3-17 were diagnosed with the symptoms of ‘acute asthma exacerbation’ within one year. It was further been stated that these patients were prone to sensitizing allergens at a higher level accompanied by virus infections (Murray, Poletti, Kebadze, Morris, Woodcock, Johnston…, & Custovic, 2006). To diagnose the severity of acute asthma, the balance of acid-base as well as transcutaneous analysis of blood gas levels can be used and accordingly, the treatments can be considered, especially for the children. Moreover, pulse oximetry is also an important tool to evaluate the severity. The patient showing the symptoms of acute asthma along with other pathophysiological mechanisms such as airway inflammation can be treated by acting against these mechanisms, thereby implementing supportive treatments for reducing respiratory distress. The other treatment options are systemic steroids and inhaled bronchodilators. These can be additionally used to treat a severe form of acute asthma along with a person in ventilator support (Carlsen & Gerritsen, 2012).

**Conclusion**

 It can therefore be suggested that cost-effective treatment i.e. using medication along with preventer inhaler can prove to be advantageous for the patients of all ages. Understanding all the perspectives, it can be stated that both acute and chronic asthma can be prevalent in all ages but the diagnosis cannot be identified in various cases and so the severity increases by making it difficult for the patients of the older ages. Therefore, it can be concluded that both the forms of asthma might seem different but they contain similarities as well. As a result, evaluating the severity is mandatory so that proper diagnosis and treatment options can be selected for the patients of all age-groups.

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