# Good example of essay on respiratory alterations

Science, Genetics

Respiratory alterations occur due to viral infections or invasion of the respiratory system by a foreign substance. The two factors lead to symptomatic coughs that differ depending on the type of infection or invading substance. In our scenario, a 6-year old boy, Kevin, is brought to the doctor for evaluation following a persistent deep cough that has lasted for one week. Before developing the condition one week prior to visiting the doctor, Kevin did not show any health problem. The parents say that the cough is deep and sounds as though Kevin is barking. In addition, Kevin's cough is so severe that sometimes he vomits. Furthermore, the cough produces mucus. However, there is no blood in Kevin's sputum. Kevin has also shown a low-grade fever. Kevin has no history of childhood asthma or respiratory syncytial virus. Kevin also lacks current immunization records. Besides, his mother says that she is not sure if Kevin's immunizations are up to date since they moved a lot during Kevin's first two years.

Most of the signs and symptoms exhibited by Kevin are associated with croup. For instance, the barking cough is a distinctive sign of croup (McPhee and Hammer, 2012). In addition, croup is also associated with fever. Consequently, Kevin is likely to be suffering from croup. The pathophysiology of croup involves the inflammation of the larynx, bronchi, trachea, or lung parenchyma. As a result of this inflammation, the victims undergo difficulties while breathing. The difficulty is manifested by the barking sound witnessed during coughing. Some of the risk factors to croup are genetic factors and age.

Croup is a disorder characterised by the acute inflammation of the upper and the lower respiratory tracts (McPhee and Hammer, 2012). The disease is

mainly caused by an infection with parainfluenza virus type 1. However, other viral infections such as enterovirus, coxsackievirus, paramyxovirus, and rhinovirus also cause it. As a result of the infection, inflammation of the larynx, bronchi, lung parenchyma, and trachea occurs. The inflammation causes obstruction in the subglottic region (McPhee and Hammer, 2012). As a result, breathing becomes difficult since the airway is obstructed. Hence, barking cough results. The sputum formed is as a result of the exudates formed from the inflamed parts of the respiratory airways. Fever may also occur as a result of this infection. The fever is attributed to the body mechanism aimed at inducing conditions unfavourable for the survival of the invading virus. The symptoms include a barking cough that is usually sporadic, hoarseness, fever, and breathing distress among others. The disease can be diagnosed clinically on the basis of the presence of barking cough. In addition, it can be detected through lateral and antero-posterior neck X-rays.

Age and genetics are some of the risk factors to croup. In terms of age, children whose ages range from six months to three years are the most prone group to croup. This vulnerability is explained by the fact that children’s airways are smaller than the airways of adults (Iannuzzi, Rybicki, and Teirstein, 2007). Consequently, a viral infection leading to any slight inflammation of the airways leads to significant breathing difficulties. However, as children grow, their airways expand. Thus, they become less vulnerable to croup and other respiratory infections. Genetic factors can also influence the level of risk to develop croup. Genetics influences the structure of the respiratory system of an individual. Besides, it affects how the body

reacts to the various changes in the environment. Consequently, genetic factors are likely to influence the level of vulnerability of a child to develop croup.

## References

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McPhee, S. J., & Hammer, G. D. (2012). Pathophysiology of disease: An introduction to clinical medicine (Laureate Education, Inc., custom ed.). New York, NY: McGraw-Hill Medical.