

Asthma essay sample

[Science](#), [Genetics](#)



Asthma is a respiratory disorder that affects the respiratory airways. It is characterized by inflammation and subsequent narrowing of the air passages. It leads to episodes of wheezing, coughing, dyspnea and chest tightness. It mostly occurs in the night or in the early morning hours. It may affect people of any age, but commoner in young children. In the United States, there are approximately 25 million asthma patients, out of these, 7 million are children (National Heart, Lung, and Blood Institute, 2015).

In this paper we will discuss about a 15 years old boy who is diagnosed with asthma. We will discuss about the genetic and the environmental predisposing factors related to asthma. Asthma has a strong genetic linkage. However the link cannot be attributed to the Mendelian principle of inheritance (Borish, 1999). Linkage between asthma and certain chromosomes were found in a meta analytic study. The study depicted the link between the loci on chromosome 2, 4, 6, 9, 10, 11 and 15 with the serum immunoglobulin E levels (DG, IN & JP, 2007).

Environment also plays a leading role in asthma. It increases the predisposition for developing the disease. Some of the environmental factors that may trigger asthma are smoke, dust, air pollution, cold air and certain irritants in the environment. Some environmental changes also trigger the disease, like thunderstorm, fluctuations in temperature, hot and humid weather conditions. Indoor conditions like dust mites in the house, carpet chemicals and moulds may exacerbate the disease condition and lead to an episode of asthmatic attack (Nhs. uk, 2015). However the role of environmental air pollution, cigarette smoking, and formation of moulds inside the house remains confusing and inconclusive in initiating the disease

process (Strachan, 2000).

Both genetics and environmental factors work together to increase the predisposition to asthma. In an article published by the University of Southern California, combinations of genetic and environmental causes were shown to be the predisposing factors for asthma. The researchers claimed that the children having variations in two genes and living within a distance of seventy- five meters from major roads had nine times more chances of developing asthma than those living farther away. The lead author of the study, Muhammad T. Salam also said that the children who lived nearby but did not have the genetic variations in the two specific genes were less susceptible to asthma than the ones with the genetic variability. Through rigorous studies the researchers concluded that presence of Epoxide hydrolase or EPHX1 and genetic variability in glutathione S- transferase P1 or GSTP1 predisposes children to asthma (University of South California, 2015). Another similar study was conducted by the GABRIEL consortium. They showed that allergies cannot be called as the cause of asthma. Mostly, asthmatic patients tend to exhibit high levels of immunoglobulin E. The rise in immunoglobulin E is seen due to some allergic reactions in the body. Since ages, it was believed that allergies leading to increase in immunoglobulin E are a predisposing factor for asthma. However, in this study the contrary was proved, that is, rise in immunoglobulin E is not the cause of asthma, but an effect of the same. They also claimed to have found new genes responsible for asthma in children, but these genes apparently seemed to have no impact in the adults (Moffatt et al., 2010).

Both the factors, environmental and genetics play equally important role in

the development of the disease. In some cases both the factors need to play their roles in combination with each other in order to trigger the disease condition. The absence of any of the contributing factor may prevent the exacerbation of the disease.

SOAP NOTES FOR ASTHMA

SUBJECTIVE: The patient is a 15 years old boy brought into the clinic by his mother early in the morning. She stated that the child was experiencing breathlessness and was becoming anxious and restless. She said that the boy had similar attacks the previous winter too, but was better within few minutes without any medical help. The patient looks dyspneic and restless with eyes turned upwards. The boy is otherwise apparently healthy as per his mother. He has received all the immunizations on time.

OBJECTIVE: The patient is alert and appropriate for his age. He remains alert throughout the examination. On examining, wheezing noises were audible. He was hyperventilating with a flushed face. All other vital signs are normal as per the boy's age. On laboratory test, an elevated serum Immunoglobulin E level is noticed. On giving an inhaler, the breathlessness was slightly better. Spirometric values were diagnostic of respiratory distress. On testing the mucus sample, presence of polymorphonuclear cells suggested presence of inflammation.

b) Bronchitis

c) Pneumonia

Tests to be carried out: Lung X- ray PA view.

PLAN: a) Take proper rest.

b) Mother is advised to keep the boy away from too much of dust and pollution.

c) The boy is advised to keep inhaler handy. He is advised to keep his friends and

near ones informed about whereabouts of the inhaler.

References

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