Pathophysiology Project

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Pathophysiology Project – Choose your disease

Sickle cell anemia is a disease where the quantity of healthy red blood cells is not at the appropriate rate to carry the needed amount of oxygen throughout the body. The red blood cells are in the shape of a crescent moon and cannot easily pass through the blood vessels apposed to the healthy red blood cells that are rounded and flexible. If a red blood cell is not the appropriate shape and cannot pass through the blood vessel, it can block the vessel, which can, therefore, disrupt the oxygen flow and cause extreme pain. I chose this disease because it is near and dear to my heart. My grandfather was born with Sickle Cell Anemia and suffered from severe pain for countless years. Although the life expectancy for someone who has Sickle Cell Anemia is now mid 40’s, it was even younger when my grandfather dealt with the disease. We were blessed to have my grandfather on this planet for 60 years and some change, but the fact that there is no cure and little to subside the pain, bothers me. I want to research this disease because it took someone that I love from me. I also have the trait, so it may affect my future children.

Annotation

Cooke, N. A. (2002). Hope and destiny: The patient's and parent's guide to sickle cell disease and sickle cell trait.*Library Journal, 127*(12), 109. Retrieved from https://search.proquest.com/docview/196900298?accountid=45049

The article by Cooke is intended for an ordinary reader with the primary aim of informing. It is a guide to patients and families of individuals suffering from sickle cell anemia. The authors use a combination of information from medical journals and patients' testimonies to compile the text. First, the book provides a definition of the disease and statistics of patients affected by the condition, citing that African Americans are the worst hit by the illness. It also includes a list of possible risky situations and how patients and their families can minimize the risks of these complications. Finally, it summarizes recent studies in the area of sickle cell anemia and provides the reader with "hope." Although the book is not designed for academic use, it is a vital source of general information. It points to areas that have been studied and ones that a researcher should explore.

Jeffrey, S. (1997). Transfusions cut risk in sickle cell kids stroke prevention trial in sickle cell disease (STOP)].*Medical Post, 33*(36), 1. Retrieved from https://search.proquest.com/docview/228827219?accountid=45049

Stroke is among the significant risks involving in sickle cell anemia. The disease triggers occlusive lesions in the cerebrovascular vessels, hence provoking stroke. Nevertheless, a study by Jeffrey revealed that blood transfusion could minimize the risk of stroke. According to the survey, regular blood transfusions, approximately three weeks interval could reduce the risk by up to 90 percent. According to the researcher, keeping sickle hemoglobin at around 30% or less compared to the healthy cells increases the circulation of oxygen to the brain. Nevertheless, the researcher observed risks such as increased iron. But, she believes that the dangers posed by accumulation of iron are much less compared to the risk of stroke. The study is, therefore, a breakthrough in the managing of sickle cell anemia.

Nwenyi, E., Leafman, J., Mathieson, K., & Ezeobah, N. (2014). Differences in quality of life between pediatric sickle cell patients who used hydroxyurea and those who did not.*International Journal of Health Care Quality Assurance, 27*(6), 468-481. doi:http://dx.doi.org/10.1108/IJHCQA-01-2013-0008

Sickle cell anemia, like other chronic illnesses, may significantly affect one's ability to live a healthy physical, psychological, and social life, also known as poor Quality of Life (QoL). However, therapies and medications aim to reduce pain, hence allowing the patient to live a comfortable life. Nwenyi et al. conducted a study to measure the impact of hydroxyurea, a medication that is commonly used to treat sickle cell anemia on the patient’s QoL. The researchers used the amount of time spent in care centers and level of pain to determine the QoL. The study realized that patients who used hydroxyurea experienced a much higher QoL compared to their counterparts who did not use the drug. Without the medication, patients experienced high absenteeism at schools and limited interaction with their fellows, hence affecting their physical, mental, and social life.

Barakat, L. P., Lutz, M., Smith-whitley, K., & Ohene-frempong, K. (2005). Is treatment adherence associated with better quality of life in children with sickle cell disease?*Quality of Life Research, 14*(2), 407-14. doi:http://dx.doi.org/10.1007/s11136-004-5328-0

Barakat et al. (2005) like Nwenyi et al. look into the issue of Quality of Life among sickle cell anemia patients. However, the researchers believe that adherence to medication does not improve QOL among children living with sickle cell anemia. The research studied 43 children above five years and an additional 21 children above eight years. The level of pain and frequency of fever was used as the primary determinant of the subject's QOL. Nevertheless, the study revealed a negative correlation between adherence to medication with QOL. In conclusion, the researchers believe that strict adherence to treatment interferes with the children's activities that boost their QOL. Therefore, while medicines have shown positive impact on QoL as shown by previous studies, paying too much attention to medication affect’s the child’s life negatively unlike the case in most illnesses.