Pathophysiology of Migraine

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Introduction

Migraine is a primary headache disorder and is ranked 13th among all diseases worldwide that cause disability (International Headache Society, 2013). There are more than 37 million Americans who experience migraines. Migraine is most commonly experienced by individuals between the ages of 15 and 49 years. Migraines have a family history of migraine (National Headache Foundation, 2014). Migraine is the most common headache disorder for which patients obtain medical care (National Headache Foundation, 2014). Migraine is a complex brain disorder that is generally considered a neurological disorder. However, it also includes a vascular component, hormonal changes, stress and depression are encountered a number of times, and there is a known inheritance component (Tina Capers, RN, 2013). Underlying Pathophysiology

Over the last several decades the understanding of migraine pathophysiology has advanced significantly. Over the last several decades the understanding of migraine pathophysiology has advanced significantly. Recent Evidence. (2013). The Journal Of Head & Face Pain, 5(3), 420-422. 

Significance of Pathophysiology

An understanding of migraine pathophysiology provides clarification in the approach to treatment. Activation of the trigeminovascular system causes peripheral sensitization, the early stage of a migraine attack. Treatment during this phase of the migraine may terminate the attack fully (Ward, 2012, p. 758). If the attack is not terminated further headache and associated symptoms become more intense. A preventive or primary migraine medication may not always resolve a migraine attack. For those individuals who experience frequent attacks or the attacks do not consistently respond to specific treatments or medication, then preventive medications should be utilized to improve migraine frequency and improve the response to the acute migraine medication.

Implications for Nursing Care

It is vital for healthcare professionals to have a good understanding of the pathophysiology of migraine, in order to accurately diagnose this neurological disorder and provide effective treatment. Healthcare providers will need to perform a general and neurological exam of the patient and obtain a detailed, dedicated headache history from the patient. Clinicians need to provide patient education regarding the disease process including the four phases of a migraine attack, the triggering factors of migraines and the importance of identifying and avoiding those triggers as well as the appropriate use of medications and the significance of the timing of their use. A useful tool for healthcare providers to utilize is the International Classification of Headache Disorders guide.

Conclusion

Migraine pathophysiology is complex and not fully defined; however, scientific advances have allowed healthcare providers to identify correlations between the clinical features of migraines and changes in the brain that have enhanced the diagnostic accuracy for migranes (Ward, 2012, p. 755). The question of whether migraine is primarily a vascular or neural abnormality has been essentially resolved. Vascular changes in the brainstem and extracranial veins are a potential epiphenomenon and migraine is a disorder of brain excitability and sensory dysmodulation that causes headache pain along with associated features (Ward, 2012, p. 753). Migraine is usually a hereditary brain disease.

Understanding hereditary brain alterations allows for optimal migraine management, a phenomenon that is known to provide a theoretical understanding of the central nervous system abnormalities that make up migraines (Ward, 2012, p. 753).

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References

International Headache Society. (2013). Who-is-headache.org
Kabat, A. G., & Sowka, J. W. (2011). It’s all in your head: here, we review the classic signs and symptoms of migraines as well as discuss several therapeutic treatment options. Review Of Optometry, 4, 102-103.

Additional Sources


Underlying Pathophysiology

The National Headache Foundation reports that less than half of all migraine sufferers are being diagnosed with migraine by their healthcare provider. Currently, there is no test to diagnose migraine; therefore, establishing the history of the patient and their related symptoms and other headache characteristics in addition to a family history of similar headaches is used to diagnose a migraine headache (National Headache Foundation, 2014). National Headache Foundation (2014). The Pathways of Migraine [Photograph] Retrieved from http://www.headaches.org/education/Headache_Topic_Sheets/Migraine.htm