Epilepsy: Questions About

Question 1

Epilepsy refers to a chronic illness that results in recurrent unprovoked seizures. Notably, a seizure refers to a sudden occurrence of electrical activity in the human brain. It is worth noting that there are two different kinds of seizures. These are generalized and focal seizures. The former affects the entire brain, while the latter affects only one region of the brain (Ryvlin, Cross & Rheims, 2014). Epilepsy may cause either mild or strong seizures. A mild seizure is hard to recognize since it may last only a few seconds. However, intense seizures cause uncontrollable muscle twitches and spasms, which can last a few minutes. During strong seizures, the patients may lose consciousness and become confused. Patients always do not remember what was happening after the seizure. Another form of epilepsy is known as focal non-motor seizure (Lopes et al., 2014). The patients of this form of epilepsy do not experience muscle twitches or any form of movement. Instead, this epilepsy changes how an individual thinks or feels. Patients may develop intense emotions, racing heart, and strange feelings. A ten-year-old may exhibit different signs if they have epilepsy. First, they present jerking movements of legs and arms. Secondly, they experience body stiffening and low consciousness level. Also, breathing difficulties can be a sign of epilepsy in a ten-year-old child.

Question 2

From the parents' description, their son Johnny had suffered from an absence seizure, which makes the patient stare for a few seconds. There are various treatment options for childhood absence seizures. However, each option has its risks and benefits, which means that it is critical for the parents of Johnny to discuss the treatment option for their son. The drugs which are prescribed for absence seizures include Ethosuximide (Zarontin) and Valproic acid (Depakene). Ethosuximide is one of the anti-epileptic medication which is used to treat absence seizures (Powell et al., 2014). The benefit of this medication is that it can be used alone and in low doses, which reduces the impacts of adverse drug events. However, the drug exposes the patients to the risk of developing hypersensitivity and insomnia. Valproic acid is also effective in the treatment of absence seizure (Liu, Slater & Perkins, 2017). The benefits of using Valproic acid is that the disease responds well to the drug. On the other hand, Valproic acid has various side effects. The side effects include a higher risk of birth defects.

Question 3

The active ingredient used to treat epilepsy contained in Zarontin is known as ethosuximide. This medication treats absence seizures by balancing the brain's electrical activity (Buchhalter 2011). The human brain comprises numerous nerve cells that communicate with one another by means of electrical signals. For the brain to work properly, the electrical impulses in the nerves must be carefully stabilized or regulated. When abnormally sudden and repetitive electrical impulses are released, the human brain becomes disturbed, which affects normal functioning. This condition always results in seizures. Ethosuximide treats seizures by preventing continuous and repetitive firing of abnormal electrical signals.

Similarly, Valproic acid is used to treat epilepsy. Valproic acid works by exerting its impacts on the patient's brain. The effects of Valproic acid entails raising the level of gamma-aminobutyric acid (GABA) in the patient's brain. GABA is one of the crucial neurotransmitters in the brain. Nerves use the GABA chemical so that they can communicate through signal impulses (Vázquez et al., 2014). Therefore, Valproic acid treats absence seizures by facilitating efficient communication of the nerves.

Question 4

Amlo is a drug used to treat hypertension and chest pain (angina). The active ingredient in Amlo is known as Amlodipine. Typically, the Amlodipine is known to be a calcium channel blocker that helps in the widening of blood vessels to improve the flow of blood (Silva et al., 2015). Amlo belongs to a class of drugs known as calcium ion antagonists. This class of drugs prevents heart attack and other coronary diseases by facilitating the proper flow of blood. The drug also prevents stroke by increasing the level of oxygen supply in the heart and other tissues.

On the other hand, anticonvulsants work by stabilizing or facilitating communication of the nerve cells in the brain. Anticonvulsants act in different ways to prevent seizures. First, they work by altering the electrical impulses in the neurons, which is achieved by changing the sodium, potassium, and chloride concentration in the cell membrane (Sternlicht & Bakris, 2016). Other anticonvulsants work by alteration of GABA chemicals, which affect the communication of the nerves.

Question 5

Motorcycle accidents can cause seizures due to traumatic brain injury. After an accident, the patient may experience confusion, convulsions, and seizures. The cause of this seizure is the swelling of the brain. The brain may swell after the injury, which makes the injury even more severe (O'Neill et al., 2015). This swelling makes the patients experience short term or long-term seizures. The difference between the absence seizure and the seizure experienced after an accident are the causes and the risk factors of the disorders. The risk factors of the absence seizure include age and family history of the disease (Englander et al., 2014) Absence seizure primarily affects children between 4 and 14 years while the accident seizures can affect any person at any age.

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