



The Transcranial Direct Current Stimulation (tDCS) and Biofeedback (BFB) as a Mixed Methods in Reducing Symptoms of Migraine

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Background

Now a day according the WHO reports migraine contacts many of population. Approximately 15% of people has kinds of migraines [1].

A detail description provides for types of migraines in the classification of all headaches that is organized by the international headache society and published in the International Classification of Headache Disorders (ICHD). However, in the most related references mention that the Migraine is a primary headache disorder that begins at puberty and most affects those aged between 35 and 45 years and more in women than men. So, it could be issued huge number of young social people problems [2,3].

Migraines may be induced by triggers such as fatigue, certain foods, weather, and so on. Of-course some patients with migraine report other experiencing triggers include dietary and sleep disorders. Many of symptoms pertaining to the migraine may start, up to 24 hours after a trigger and continue for 72 hours. In addition, the psycho-physiological aspects could consider as other important triggers [4].

Environmental potential triggers concluded as one of the most important factors as causing migraine. The indoor air quality and lighting suggested to patients with migraine. The noise pollution and sever smell are the other triggers for migraine.

Neuronal mechanisms could play a greater role than the blood vessels. Some believe both of the neuronal mechanisms and the blood vessels are important. The cortical spreading depression (CSD) theory is one of the theories related to increased excitability

of the cerebral cortex and abnormal control of pain neurons that relates to the trigeminal nucleus of the brainstem.

CSD as a burst of neuronal activity followed by a period of inactivity which is seen in those with migraines almost parallel with an aura. There are a number of descriptions for its occurrence, for example the activation of NMDA receptors that leading the calcium ion to entering the cell and after that the blood flows to the cerebral cortex in the area affected is decreases between 2 and 6 hours at this time depolarization comes down the underside of the brain and this event occurs as spikes the nerves that sense pain in the head and neck and make a trigger for headache in cortical area [5]. Some believe that the adenosine as a neuromodulator that may be involved in migraine. It releases after the progressive cleavage of adenosine triphosphate (ATP). The adenosine acts on adenosine receptors to put the brain in a low activity state by dilating blood vessels and slowing the heart rate, such as before and during the sleep. Adenosine goes high during migraine attacks so caffeine as an inhibitor of adenosine can control the increasing of adenosine and reducing the severity of pain in migraine. Low levels of the 5-hydroxytryptamine (5-HT) nomenclatures the serotonin are also believed to be involved in migraine [6]. So, the pain neural pathway specifically pertaining to serotonin and some hormones such as insulin and glucagon could be affected that. Therefore, the level of blood sugar focused as one of the most important triggers in migraine [7].

Suggestion

According to a clinical practice that try to show a drug resistance life-long migraine achieved to a significant change in headache control both in frequency and severity of pain based on a mixed method include BFB and tDCS.

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