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Letter to the Editor

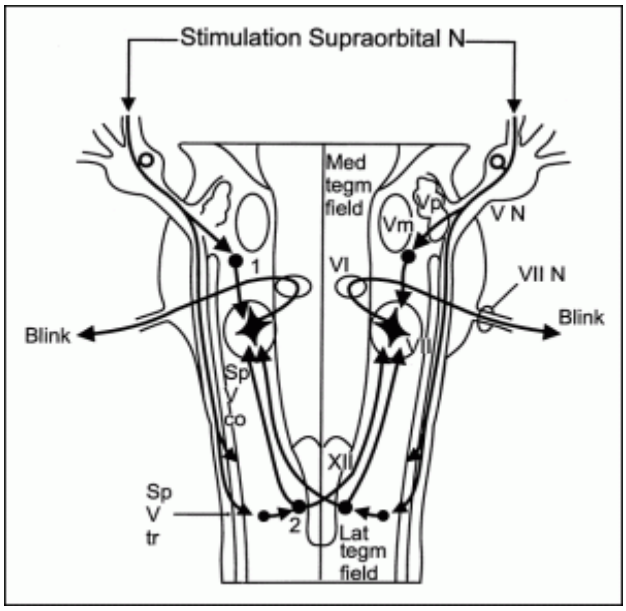
Prominence of Blink Reflex on Migraine

Dear Editor ,

In the past days, acupuncture method is used for the treatment for the migraine. The other method of treatment is by applying hot or cold water to the head and the patient is placed in a dark and quite room. In the recent days surgical treatment is used for the migraine. It is by severing corrugator's supercilious muscle and zygomatigo temporal nerve. The diagnosis of migraine is difficulty. Now-a-days electrophysiological methods are used to differentiate the neurological and vascular theories of migraine [(1)].

The importance of the feedback mechanism to those wishing to avoid migraine is highlighted by the example of blinking. Migraine patient's show altered responses to stimuli that elicit blinking. Migraine patient's show altered responses to stimuli that elicit blinking. The blink, or corneal reflex, is the involuntary closing and opening of the eye lids, which occur when the outer surface of the eye is touched. It can also happen when with an experience of bright light or loud sound. Signal transmission from blink reflex is through the trigeminal nerve, which also carries migraine pain signals. Blink reflex is a non-invasive method that can provide information on peripheral and central neurological functions of trigemino-vascular mechanisms for migraine. Numbers of studies are done by the researchers of western countries on habituation responses of blink reflex and its importance in the treatment of migraine. A Reflex is defined as an involuntary or automatic response to a threshold stimulus obtained by stimulating sensory nerve [1].

The Blink reflex is a polysynaptic reflex, the reflex is analyzed in electrophysiological studies by calculating latency, amplitude and intervals of both eyes (stimulated and non-stimulated). In the pathway the fibers cross to the opposite side and stimulate the centers in both sides. So the responses are seen in both sides with a small change. In adult subjects, the mean latency of R1 is 10 milliseconds and that of R2 is 30 milliseconds.



Source: www.Cluster attack.com

Delayed R1 and R2 with the values more than 13 milliseconds and 41 milliseconds is abnormal, the difference between the two sides is greater than 1.5 milliseconds for R1 and 8 milliseconds for R2 is considered as abnormal. In addition, the ipsilateral and contra lateral R2 should not exceed 5 to 8 milliseconds. Amplitude may vary considerably from one subject to other [(2)]. In particular R2 component of the reflex reflects the excitability of brain stem interneuron and the functions of synaptic transmission in the brainstem. This component may also be influenced by abnormalities elsewhere that indirectly influence the excitability of the polysynaptic connections.

Trigeminal nerve is the afferent nerve and facial nerve is the efferent path. The trigeminal nerve is also the sensory nerve for the meninges. So any change in the function of the trigeminal nerve is measured by blink reflex response.

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A study conducted by us indicated small changes in latency, amplitude and interval of blink reflex among migraine patients, but the values are not statistically significant[3]. This may be due to a difference in the patients approach after the migraine attack to the neurology department. Habituation of the trigemino-vascular system by electrical stimulation of the supra-orbital nerve plays a vital role for bio-feedback mechanisms in controlling migraine.

References

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