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Phonophobia and brainstem excitability in migraine

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Phonophobia in migraineurs may be due to lower hearing threshold (HT) and higher brainstem neuronal excitability. We report correlation of phonophobia in migraineurs with HT, brain stem auditory evoked potential (BAEP) findings and auditory triggers. Sixty-one migraineurs and 101 controls were included for HT, of whom 59 migraineurs and 31 controls had BAEP studies. Clinical details, migraine triggers and headache frequency were noted. Hearing threshold was measured, and amplitudes of waves I to V of BAEP studies were measured. Migraineurs had lower HT compared with controls (41.61 ± 5.25 vs. 45.39 ± 6.26 dB; $p < 0.001$) especially in chronic migraine (40.24 ± 4.81; $P < 0.001$). Hearing threshold correlated with headache frequency ($P < 0.05$) and auditory, visual and tactile ($P < 0.05$) triggers. Hearing threshold was lower during headache ($P < 0.001$). Wave II, III and IV amplitudes of BAEP were higher in migraineurs than the controls. Wave II ($P < 0.05$) and III ($P < 0.05$) amplitudes correlated with HT.

Migraineurs have lower HT, especially in those having chronic migraine, ictal HT recording and multiple sensory triggers. Higher amplitudes of BAEP waves in migraineurs and its relationship with frequency of headache and HT suggest sensitization of brainstem auditory neurons.

Keywords: Migraine; hearing threshold; episodic migraine; chronic migraine; brainstem; auditory evoked potential.

Biography

Jayantee Kalita is presently working as professor, Department of neurology, Sanjay Gandhi post graduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India. Prof. Kalita is an excellent teacher and clinician. She has outstanding academic carrier and received "the best neuroscientist in India" award by Carrier 360 based on her number of publications, Hi index and citations, She is the author of four books and published about 432 papers in the peer reviewed journals.