

Letters to the Editor

P-VEP as Predictor of Occlusion Therapy

Dear Editor,

We read the article "Pattern Visual Evoked Potential as a Predictor of Occlusion Therapy for Amblyopia" by Chung et al in December issue with keen interest.

Amblyopia represents a major public health problem, the prevalence of which is usually underestimated, often because of lack of awareness. Strabismus develops in approximately 5% to 8% of the general population.¹ The authors deserve to be congratulated for highlighting the role of pattern-shift VEP's in predicting the course of improvement. Based on our little experience in the ever evolving world of Evoked Potential studies, we supplement a few points in this regard.

The use of pattern visual evoked potential (P-VEP) has been the primary technique for electrophysiologically detecting amblyopia in patients unable to undergo conventional testing.

Amblyopia affects the broad spectrum of visual subsystems that constitute vision, including contrast and color, motion, and vernier discriminations. P-VEP studies show that the pursuit of high-contrast acuity does not ensure optimum performance at lower contrasts. Rather than relying on just one measure to monitor amblyopia therapy (e.g., high-contrast recognition acuity), it is likely that a battery of specific stimuli may provide an enhanced profile of amblyopia against which the results of occlusion can be better monitored.²

It is pertinent to mention here another pioneer Korean study reporting fMRI as a useful tool for the study of amblyopia in humans. Choi et al found calcarine activation from amblyopic eyes in anisometric amblyopes was more suppressed at higher spatial frequencies, while that from amblyopic eyes in strabismic amblyopes was more suppressed at lower spatial frequencies.³

An important but unanswered question concerns the quality of vision that amblyopics have on binocular viewing. When visual performance is measured with a P-VEP, the amplitude of VEP responses is enhanced on binocular compared with that on monocular viewing by 30 to 40%. Holmes et al., compared monocular and binocular flash VEP amplitude with abnormal retinal correspondence (ARC) in strabismic and normal subjects.⁴

A recent study was performed to evaluate the effectiveness of P-VEP parameters in amblyopic patients under monocular

and binocular conditions.⁵ In binocular viewing, the amount of VEP amplitude was greater in normal subjects than that in both amblyopic groups. The mean binocular amplitude was significantly greater in the anisometric group than in the strabismic group. Listing above mentioned studies would have made the study even more interesting.

It is also of interest to note multifocal-VEP difference between early- and late-onset strabismus amblyopia. A study found no significant difference in latency or amplitude between amblyopic and fellow eyes for the early-onset amblyopic group, whereas in the late-onset amblyopic group, latencies were significantly prolonged and amplitudes were attenuated in the central region of visual field in the amblyopic eye.⁶

Endorsed by authors, we conclude by emphasizing usefulness of P-VEP as a reliable and reproducible indicator of occlusion therapy for amblyopia.

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