

ABSTRACT

INFLUENCE OF REFRACTIVE ERROR AND OCULAR DOMINANCE ON PATTERN REVERSAL VISUAL EVOKED POTENTIAL – A COMPARATIVE STUDY”

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Introduction: Numerous techniques are available for the assessment of functional status of the visual system in human beings. One of the most valuable of these in current clinical use is the recording of the evoked potentials in response to a variety of visual stimuli [Visual evoked potential]. Various variables can affect recording of VEP like refractive errors, age, sex hormones, eye dominance & illumination. So we are here to study the effect of refractive error and eye dominance on visual evoked potentials.

Aim and Objective: To determine and analyse the effect of refractive error and eye dominance on visual evoked potentials.

Materials and Methods: After getting ethical committee clearance and informed consent, 125 population participated in the study, 45 were control group, 41 were myopics and 39 were hypermetropic individuals. Inclusion Criteria: Age group : 18 - 45yrs of both gender. Patients with Refractive error (diagnosed within 2 years). Subjects with normal visual acuity. Patients with ocular surgery, color-blindness, seizures, Diabetes mellitus, hypertension or any cardiovascular illness were excluded. After history taking and clinical examination, weight, height were measured and BMI were calculated. Ocular dominance was found using Miles test. VEP was done using PHYSIOPAC (NEUROPERFECT –EMG 2000). Electrodes were placed using 10 – 20 International system. N75, P100 and N145 Latency and amplitude were noted.

Results: data were analysed using SPSS software 20 by using paired t test, anova and chisquare. There is a significant prolongation of N75 latency and P100 latency in both eyes and decrease in N75 and P100 amplitude in myopics and hypermetropics when compared with controls. Among the study population right eye dominance is more predominant. P100 latency in controls is decreased in dominant eye when compared to non-dominant eye among all three groups (Controls, Myopics and Hypermetropics). and but statistically insignificant decrease in both myopic and hypermetropic group.

Conclusion: Influence of refractive error and ocular dominance on VEP were analysed and results showed a strong association. The precise and rapid sensory visual processing occurring in dominant eye is evident and clearly highlighted at an early stage by VEP. Hence this non-invasive and simple procedure would be mandated not only while screening for demyelinating disorders like optic neuritis and multiple sclerosis and also for early intervention to reduce the morbidity associated in visual errors.

Key Words: Myopia, Hypermetropia, ocular dominance, Visual evoked potential.