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Research Paper

Study the Effect of Depakine on Retina of Epileptic Patients using Electroretinogram

Medical Science

KEYWORDS : Depakine, Retina, Electro-retinogram

Naser, M Tehran Medical Branch , Islamic Azad University, Tehran-Iran

Shushtarian, S.M. Tehran Medical Branch , Islamic Azad University, Tehran-Iran

ABSTRACT

Objective: Sodium valproate or Depakine is a drug which is normally used in patients with Epilepsy .This drug has some side effects.The aim of present study is to survey the possible adverse effect of Depakine on retina using
Electroretinogram (ERG) technique in patients referred to Basir advance eye
research polyclinic.
Methods and Materials: In a cross-sectional study, 50 epileptic subjects (without visual problems) including 25 with history of Depakine prescription and 25 without such prescription were enrolled and the ERG pattern obtained in two groups were compared to search for the possible changes.
Results: The mean voltage of ERG was 99.88 ± 12.18 and 99.16 ± 13.37 μV in case and control groups, respectively (P > 0.05). The mean latency of ERG was 44.2 ± 2.66 and 44.80 ± 2.36 msec in case and control groups, respectively (P > 0.05).Therefore there was not significant difference for both voltage and latency of two groups.
Conclusions: Base on the result of present study and comparison with other studies it may be concluded that Depakine have no adverse effect on retinal function and so no periodic retinal assessment is neccessary in subjects with Depakine treatment.

Introduction
Epilespy is a complex neurological disorder with chronic dysfunction of neurons in neural system and subsequent electrical discharges [1]. However sometimes there is a structural disorder and more over frequently there is no definite causes for it [2]. Sometimes seizures are due to a special sensory stimulant but sometimes there is no initiative factor. Among known etiological factors, brain tumors, cerebrovascular diseases, and different cytotoxic poisons may be considered in this connection. In addition the seizure may be febrile too [1,2].

Epileptic patients may demonstrate disordered electrophysiological functions due to certain drugs side effects [3,6]. Different drugs including sodium valproate (Depakine), carbamazepine, barbiturates, and benzodiazepines may be used as anti-convulsants and because of high frequency rate of adverse effects, the patients should be monitored by electrophysiological tests [6]. Electroretinogram (ERG) is one of these tests used for objective assessment of visual system [7,8]. Therefore in present study the possible adverse effect of Depakine on retina was studied using ERG technique.

Methods and Materials
In a cross-sectional descriptive-comparative study, 50 epileptic subjects (without visual problems) including 25 with history of Depakine prescription and 25 without such history were enrolled and the ERG results were compared between two groups. The inclusion criteria were intentional incorporation in the research and lack of visual system disorder.

Data analysis was performed among subjects by SPSS (version 13.0) software [Statistical Procedures for Social Sciences; Chicago, Illinois, USA]. Independent-Sample T test was used to determine the associations between variables and the significant level was considered 0.05.

Results
The mean voltage of ERG was 99.88 ± 12.18 and 99.16 ± 13.37 μV in case and control group, respectively, showing no statistically significant difference (P > 0.05). The mean latency of ERG was 44.2 ± 2.66 and 44.80 ± 2.36 msec in case and control group, respectively that too showing no statistically significant difference (P > 0.05).

Discussion
In this study the mean voltage and latency was somehow similar between two groups. The study by Ozkul et al demonstrated that Depakine had no effect on recorded parameters in ERG [9].

The study by Sorri et al revealed that Depakine has no effect on visual system especially retinal macula and only the color vision may be minimally affected [10] .These two research work support the result of present study.

The study by Verrotti et al demonstrated that Depakine have no significant effect on night vision in epileptic patients[11].

Lobefalo et al demonstrated that retinal nerve fiber layer and macular thickness in patients under one year treatment with Depakine had no significant change [12].These two works also support the findings of this study.

Verrotti and colleagues made another research and reported that short treatment duration with Depakine may lead to retinal dysfunction mainly color vision problems [13].This work is in contradiction with the result of

Present study.
Finally, according to the results obtained in this study and it's comparison with other studies it may be concluded that the Depakine would have no effect on retinal function and thereby no periodic retinal assessment is recommended in the subjects with Depakine treatment. Howevere further studies should be carried out to confirm the findings of present study.

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