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Visual Evoked Potential Findings in the Patients Experiencing Headache as a Consequences of Dinogest Treatment

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Abstract

Purpose: *The aim of present study was to look for possible visual evoked potential (VEP) changes in the patient's experiencing headache as a consequence of Dinogest treatment.*

Patients and Methods: *A total of 22 eyes from 11 females aged between 25 and 42 years who received Dinogest for the treatment of endometriosis and expriencing headache as a side effect of Dinogest were included as the case group. VEP measurements were taken from the case group and compared with results from 22 eyes of 11 healthy females with no history of Dinogest use, who served as the control group.*

Result: *There were no significant differences between the case and control groups in terms of the latency and amplitude of VEP P100 Peak.*

Conclusion: *No VEP changes was observed in the endometriosis Patients using Dinogest and experiencing headache as a consequence of treatment.*

Keywords: Headache, Dinogest, Endometriosis, Visual Evoked Potential.

Introduction

Endometriosis is defined as the presences of endometrial tissue (glands and stroma) outside the uterus. This disease is often associated with infertility and causes chronic pain in many, but not all, women. In fact, endometriosis affects approximately 10% of women of reproductive age [1]. The treatment of endometriosis should be individualized according to the clinical situation and the suspected level of impairment. Dignogast is an oral derivative of 13- nortestrone that has recently been introduced for the treatment of endometriosis. Like any other drug, Dinogest may have adverse drug reaction (ADRS). The most frequently reported ADRS for Dinogest are abnormal uterine bleeding, increased weight, and headache [2].

The visual system, particularly the visual pathway is an area that has not been extensively studied in this context. Visual evoked potential (VEP) is a suitable technique which has been used for different physiological and pathological conditions of visual system and mainly visual pathway disturbances [3-48]. Therefore, the authors used VEP to assess the visual pathway of patients with endometriosis and suffering from headache as a consequence of Dinagest treatment.

Patients and Methods

In this case-control study, we evaluated 22 eyes from 11 female patients with endometriosis who were undergone Dinogest treatment and expriencing headache as a side effect of Dinogest drug. Infact Dinogest treatment was prescribed by a gynecologist.

These patients comprised the case group. To examine the visual pathway of the case group, visual evoked potential (VEP) testing using pattern stimulation was performed with a Mangoni device. For comparison, 22 eyes from 11 healthy females with an age range similar to that of the case group were included as the control group. The control group underwent the same VEP testing. The latency and amplitude of VEP P100 Peak were measured in milliseconds (msec) and microvolts (μV), respectively to assess the participants visual pathway.

The VEP recordings were conducted using three electrode connected to Mangoni machine. The active electrode was placed on the occipital region, the reference electrode on the vertex and the ground electrode on the forehead.

Results

The average age for the case and control groups was 32.59 ± 5.49 years and 33 ± 5.59 years, respectively (Table 1). There were no statistically significant differences between the two groups in terms of age (p= 0.759); sex (all participants were female), or best-corrected visual acuity (10/10 for all participants).

Table 1: Comparison of average age in case and control groups.

Variable	Number of participants	groups (Mean ± SD)		P value*
Age	11	Control	Case	
		33 ± 5.59	32.59 ± 5.49	0.759
Based on Mann-Whitney U Test				

Table 2 shows the comparison of the latency and amplitude of the VEP, P100 Peak between the case and control groups.
It was observed that there were no statistically significant differences between the two groups in terms of latency (P=0.729) or amplitude (P= 0·827) of the VEP P100 Peak.

Table 2: Comparison of amplitude and latency of VEP P100 in case and control groups.

Variable	Number of participants	groups (Mean ± SD)		P value*
		Control	Case	
Amplitude (μv)	11	6.72 ±1.8	6.81 ±2.44	0.827
Latency (msec)	11	97.9 ±2.86	98.18 ±3.08	0.729
* Based on Mann-Whitney U Test				

Discussion

The present study was planned out to investigate the probable visual pathway changes in the endometriosis patients suffering from headache as a consequences of Dinogest treatment. Visual evoked potential was used for this purpose. The results of the present study showed no significant differences between the healthy and Patient groups in term demographic characteristics such as age, sex, and best corrected visual acuity (BCVA). Moreover, the authors did not observe any Pathological changes in the VEP Patterns between the case and control groups. In fact, there are little literature regarding this specific topic and the most relevant works confined to the two works reported by the authors of present work.

Eslami vaghar M etal 2023 worked on 26 eyes from 13 females who received Dinogest for the treatment of endometriosis. They used VEP test to look for possible side effect of Dinogest in visual pathway and they could not find any pathological changes of VEP in these patients means visual pathway is intact in these Patients, however they taken the total population with or without headache as a Consequences of Dinogest treatment [49] where as we include the patient with headache only.

Another work was reported by shushtarian et al in 2021, which was confined on single Patient with endometriosis and epilepsy who exprienced blurred vision in the left eye. VEP testing showed delayed response in the affected eye, however, the delay was not attributed to Dinogest. The delay was likely due to the patient's epilepsy and the long-term use (over 11 years) of other drugs for epilepsy treatment [50]. The above two references may support the result of Present work.

Conclusion

Visual pathway is intact in the endometriosis patients exprienching headache as a consequence of Dinogest treatment and it can be proved by visual evoked potential examination.

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