Original Article

Visual Evoked Potential Findings in Endometriosis Patients Treated with Dienogest

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Abstract

Purpose: The aim of the present study was to investigate possible toxic effects of Dienogest treatment on visual pathway among endometriosis patients using visual evoked potential (VEP) measurements.
Patients and Methods: A total of 26 eyes from 13 females aged between 25 and 42 years who received Dienogest for the treatment of endometriosis were included as the case group. VEP measurements were taken from the case group and compared with results from 26 eyes of 13 healthy females with no history of Dienogest use, who served as the control group.
Results: There were no significant differences between the case and control groups in terms of the latency and amplitude of the VEP P100 peak.
Conclusion: Dienogest does not affect the visual pathway in patients, as demonstrated by visual evoked potential measurements.

Keywords: Endometriosis; Dienogest; Visual Evoked Potential.

Article Notes: Received: Jan. 29, 2023; Received in revised form: Feb. 21, 2023; Accepted: Mar. 11, 2023; Available Online: Sep. 23, 2023.

How to cite this article: Eslami Vaghar M, Shushtarian SMM. Visual Evoked Potential Findings in Endometriosis Patients Treated with Dienogest . Journal of Ophthalmic and Optometric Sciences . 2023;7(4):19-22.

Introduction

Endometriosis is defined as the presence 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. Dienogest is an oral derivative of 13-nortestosterone that has recently been introduced for the treatment of endometriosis. Like any other drug, Dienogest may have adverse drug reactions (ADRs). The most frequently reported ADRs for Dienogest 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 for evaluating the visual pathway [3]. Therefore, the authors used VEP to assess the visual pathways of patients with endometriosis who were treated with Dienogest.

Patients and Methods

In this case-control study, we evaluated 26 eyes from 13 female patients with endometriosis who were undergoing Dienogest treatment 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, 26 eyes from 13 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 the VEP P100 peak were measured in milliseconds (ms) and microvolts (μV), respectively, to assess the participants' visual pathways.

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

The study was approved by the institutional ethics committee, and all participants provided written informed consent before participating in the study.

Results

The average age for the case and control groups was 33.53 ± 6.87 years and 33.76 ± 7.67 years, respectively (Table 1). There were no statistically significant differences between the two groups in terms of age (P = 0.91), sex (all participants were female), or best-corrected visual acuity (10/10 for all participants).

Tables 2 and 3 show the comparison of the

Table 1: Comparison of average age in case and control group

Variable	Number of participants	groups (Mean ± SD)		P value*
		Control	Case	
Age	13	33.76 ± 7.67	33.53 ± 6.87	0.91

* Based on Mann-Whitney U Test

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

Variable	Number of participants	groups (Mean ± SD)		P value*
		Control	Case	
Amplitude (µv)	13	6.92 ± 6.99	7.07 ± 1.62	0.678

* Based on Mann-Whitney U Test

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 = 0.514) or amplitude (P = 0.678) of the VEP P100 peak.

Discussion

This study was conducted to investigate the potential effects of Dienogest on the visual pathway using visual evoked potential (VEP) testing. Dienogest is commonly used by female patients with endometriosis as part of their treatment regimen.

The results of the present study showed no significant differences between the healthy and patient groups in terms of 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.

The present study was inspired by the observation that Dienogest can cause headaches, a symptom that may indicate changes in the visual pathway, especially in cases of migraine comorbidity [4].

In fact, there is little literature addressing this specific topic, as the authors of this study could not locate substantial references. The most relevant related work was reported by Shushtarian et al., [5] in 2021, describing a single case involving a patient with endometriosis and epilepsy who experienced blurred vision in the left eye. VEP testing showed delayed responses in the affected eye. However, the delay was not attributed to Dienogest. The delay was likely due to the patient's epilepsy and the long-term use (over 11 years) of other drugs for epilepsy treatment.

Conclusion

Dienogest does not affect the visual pathway in patients, as demonstrated by visual evoked potential measurements.

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Table 3: Comparison of latency of VEP P100 peak in case and control groups

Variable	Number of participants	groups (Mean ± SD)		P value*
		Control	Case	
Latency (msec)	13	99.92 ± 2.79	99.46 ± 3.42	0.514

* Based on Mann-Whitney U Test

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Footnotes and Financial Disclosures

Conflict of interest:

The authors have no conflict of interest with the subject matter of the present manuscript.