Summery

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II

Diabetic retinopathy is a common complication of diabetes mellitus

that the vast majority of patients with any type of diabetes mellitus are

vulnerable to go through, and unfortunately is a devastating cause of

morbidity as it leads to an early vision loss during working age. ,Currently

diabetic retinopathy has a wide recognition as a neurovascular rather than a

micro-vascular diabetic complication with an increasing need for enhanced

detection approaches and preventive therapies to avoid irreversible neural

damage. Pattern-reversal visual evoked potential test as an objective

electrophysiological measure of the optic nerve and retinal function can be

of great value in early detection of pre-clinical diabetic retinopathy neural

.changes

The present study was designated to explore any early patternreversal

visual evoked potential changes in type 2 diabetes mellitus

patients without a clinically documented diabetic retinopathy, and in patients with a clinically documented early non proliferative diabetic retinopathy. Also, to correlate the results with the subjects demographic parameters and the duration and glycemic status of type 2 diabetes .mellitus

This is a case-control study included 150 subjects who were divided into three groups, the first group (A) included 50 patients with type 2 diabetes mellitus and did not have a clinically documented diabetic retinopathy, the second group (B) included 50 patients with type 2 diabetes mellitus and had a clinically documented early non proliferative diabetic retinopathy, and the third which is the control group included 50 subjects who were neither diabetic nor have any ophthalmic or medical condition that might affect the test results. The pattern-reversal visual evoked potential was recorded in the consultant unit of ophthalmology in

Almawanaa teaching hospital, using a large checks (60min.) and a small .checks (15min.) tests to test both eyes monocularly

The results revealed a statistically significant delay in the P100 latency and a reduction in P100 amplitude in both patients groups in comparing with the controls, with a higher difference in those with early non proliferative diabetic retinopathy clinical changes. The small checks

test of group A and B revealed a higher proportion of abnormality in P100

.latency than the P100 amplitude

The control results showed a statistically significant correlation

between the P100 latency and the age with some gender differences. While

in the patients groups, these demographic effects were altered by the

.presence of type 2 diabetes mellitus and diabetic retinopathy

In both pattern-reversal visual evoked potential tests, the P100

amplitude of group A showed a significant negative correlation with both

the duration and the glycemic status of type 2 diabetes mellitus. While in

group B, the P100 latency showed a significant positive correlation with

.the glycemic status in only large checks test

The study concluded the presence of a pre-clinical diabetic

retinopathy stage mainly as a conductive defect affecting mostly the

.central vision prior to any overt diabetic retinopathy clinical changes

Recommending that the pattern-reversal visual evoked potential tests can

be used as a screening tool to detect early diabetic impact on the retina and

.optic nerve