**TITLE:** “EVALUATION OF RETINAL GANGLION CELL ACTIVITY BY PATTERN VISUAL EVOKED POTENTIAL IN TYPE 2 DIABETIC PATIENTS”

**BACKGROUND**

According to International diabetic federation the number of persons affected by diabetes mellitus will be 592 million in 2035. The prevalence of diabetes type 2 is worldwide because of increasing obesity, reduced activity and aging of population. In India there are 62 million people affected with diabetes currently, in 2000 there were 31.7 million people affected and by 2030 79.4 million people will be affected. Pattern VEP can detect any defect from optic nerve to occipital cortex. The study aims to investigate the ability of pattern VEP in detecting preclinical neurodegenerative changes in Diabetic patients with retinopathy.

**AIM**

To detect retinal ganglion cell activity in diabetes mellitus patients type 2 and compare the VEP among diabetes mellitus patients with non proliferative diabetic retinopathy and diabetes mellitus patients without Non proliferative diabetic retinopathy

**OBJECTIVES**

1) To detect retinal ganglion cell activity in type 2 diabetic patients by using pattern reversal VEP

2) To compare the latencies among diabetics and non diabetics

3) To correlate VEP changes between diabetic patients with diabetic retinopathy and those without retinopathy (Nonproliferative)

**MATERIALS AND METHODS**

Diabetic patients 30 –60yrs(80) both gender recruited from Diabetic OP Chengalpattu Government Hospital. Diabetes Mellitus patients with retinopathy and without retinopathy were be taken as cases(40). Age and gender matched healthy non Diabetic control taken. Subjects were explained about procedure and Informed consent was obtained from. Subjects asked to come with oil free hair after the last hair wash and instructed to avoid any miotic/mydriatic 12 hours before the procedure.
During procedure-

Subject was seated at a distance of 1 metre from VEP monitor screen

Electrodes are fixed in the following position

- Recording electrode – just above inion as per 10-20 international system
- ground Electrode – at forehead
- Reference Electrode – placed 12 cm above nasion
- Electrode connected to the physiopac.
- Pattern reversal stimulus (black and white checks)
- In each recording 200 sweeps averaged
- Each eye tested separately
- VEP recorded using Physiopac (Neuroperfect EMG-2000)

RESULTS-

Data analysis was done by using ANOVA and Tuckey test and there was statistically significant difference in P100 latency value between control and study group (p= ≤ 0.0001) very highly significant in relation to FBS and duration of DM

CONCLUSION-

The study revealed that the P100 latency is indeed associated with FBS and duration of diabetics. In addition the use of PVEP in DM is a useful non invasive procedure to detect retinal dysfunction at the ganglion cell levels and can thus be considered as preclinical diabetic retinopathy screening and avert the morbidity

KEY WORDS-

DM-Diabetes mellitus, PVEP-pattern visual evoked potential, Diabetic retinopathy