ORIGINAL RESEARCH PAPER

Volume-8 | Issue-3 | March-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

NEURO CARDIAC AXIS IN CENTRAL VERTIGO

Neurology

Dr. Moses. P. Moorthy — Dr. MGR Medical University, Chennai, Tamilnadu, India.

Dr. M. Sacratis* — MD, DM(NEUROLOGY), Senior Assistant Professor, Dept of Neurology, Coimbatore Medical College Hospital, Coimbatore 641018 *Corresponding Author

A.V. Srinivasan — Prof., Dr. MGR Medical University, Chennai, Tamilnadu, India.

ABSTRACT

Aim: To study the role of neuro cardiac axis in central vertigo.

Methods: This study is done in department of neurology, Coimbatore medical college hospital, Tamilnadu from January 2018 to September 2018.

Inclusion Criteria: All patients presented with central vertigo were included.

Exclusion Criteria: Patients presented with peripheral vertigo were excluded.

All patients presented with central vertigo were undergone electrophysiological studies includes cervical vestibular evoked myogenic potential (cVEMP), Electroencephalography (EEG) and electrocardiography (ECG).

Results: This study is done in 40 patients presented with central vertigo in the age group of 20-60 years, males (70%) mean age (46years), females (30%) mean age (43.6years). cVEMP-(P13 to N23) amplitude - mean in normal side (33.25µv), abnormal side (21.38 µv). Patient's neuro cardiac axis was analysed using cVEMP, EEG and ECG. cVEMP showed statistically significant drop in (p13 to N23) amplitude (P<0.00001) and left axis deviation in ECG (P<0.00001). All patients with central vertigo showed normal EEG pattern.

Conclusion: Electrophysiological evaluation of neuro cardiac axis using cVEMP, EEG and ECG is useful for early detection and treatment of central vertigo.

KEYWORDS

Neuro cardiac axis, central vertigo, cVEMP, EEG, ECG.

INTRODUCTION:

Vertigo is the common disorder of the vestibular system it may be due to disorders in the central or peripheral vestibular pathways. Here we studied the role of neuro cardiac axis in central vertigo.

Methods:

This study is done in department of neurology, Coimbatore medical college hospital, Tamilnadu from January 2018 to May 2018.

Inclusion Criteria:

All patients presented with central vertigo were included.

Exclusion Criteria:

Patients presented with peripheral vertigo were excluded.

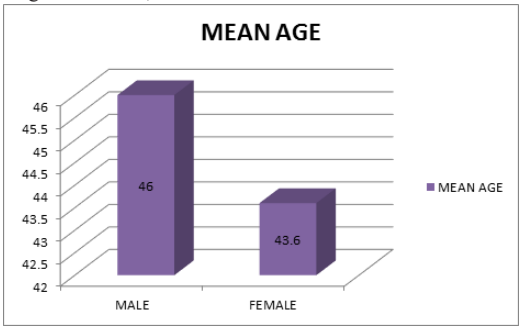
All patients presented with central vertigo were undergone electrophysiological studies includes cervical vestibular evoked myogenic potential (cVEMP), Electroencephalography (EEG) and electrocardiography (ECG).

Results:

This study is done in 40 patients presented with central vertigo in the age group of 20-60 years, males (70%) mean age (46years), females (30%) mean age (43.6years). cVEMP-(P^{13} to N^{23}) amplitude - mean in normal side (33.25µv), abnormal side (21.38 µv). Patient's neuro cardiac axis was analysed using cVEMP, EEG and ECG. cVEMP showed statistically significant drop in (p^{13} to N^{23}) amplitude (P<0.00001) and left axis deviation in ECG (P<0.00001). All patients with central vertigo showed normal EEG pattern.

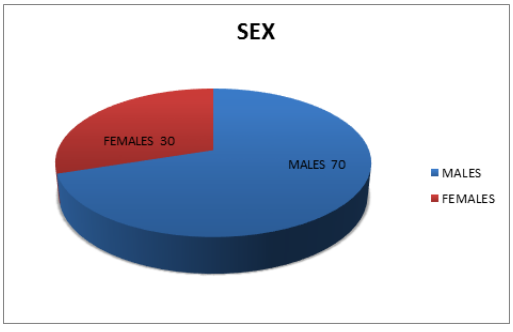
AGE:

Mean age in males 46, females 43.6

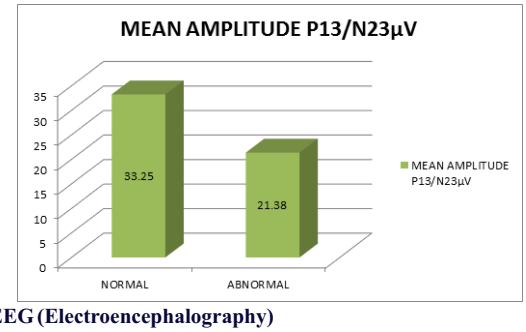


SEX:

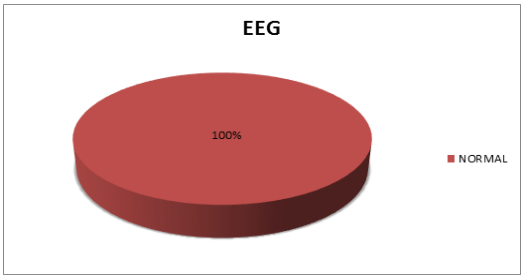
Males (70%), females (30%)



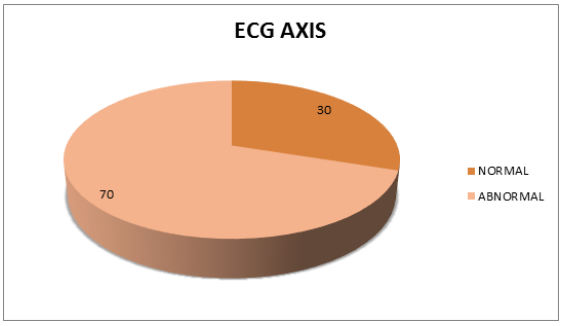
CERVICAL VESTIBULAR EVOKED MYOGENIC POTENTIAL:



EEG (Electroencephalography)



ECG (Electrocardiography) Axis:



DISCUSSION:

Vertigo is a symptom where a person feels as if they or the objects around them are moving when they are not often it feels like a spinning or swaying movement. Vertigo is the most common type of dizziness. Vertigo is classified in the either peripheral or central depending on the location of the dysfunction of the vestibular pathway. Peripheral vertigo is caused by problems with the inner ear or vestibular system. Central vertigo clinically manifest's as acute onset of vertigo and dizziness, recurrent attacks and chronic central vertigo. Central vertigo is due to injury to the balance centers of the centre nervous system, includes lesions in brain stem and cerebellum. It may be due to stroke, tumors, epilepsy, migraine, multiple sclerosis and Parkinsonism.

Cervical VEMP is recorded in the sternocleidomastoid muscle and reflects sacculocollic reflex. VEMP plays an important role for assessment of central and peripheral vestibular system. Lesions which involves the vestibular nuclei and medullary lesions impair cVEMP.

Comparison of P13/N23 latency, amplitude and threshold response curve have been used to compare pathologic groups to normal controls.

Neuro cardiology is the study of neurophysiological, neurological and neuro anatomical aspects of cardiology. Neuro cardio axis is used to analyze central vertigo. This study is done in patients with central vertigo using cVEMP, EEG and ECG.

cVEMP study revealed significant drop in P13/N23 amplitude in patients with central vertigo[1].

EEG study was normal in patients with central vertigo[2].

ECG axis study revealed statistically significant left axis deviation in patients with central vertigo[3].

The common risk factors associated with central vertigo in this study are diabetes mellitus, hypertension, posterior circulation stroke, central nervous demyelination and neuro degenerative disorder.

CONCLUSION:

Electrophysiological evaluation of neuro cardiac axis using cVEMP, EEG and ECG is useful in the diagnosis and management of central vertigo.

REFERENCES:

1. Vestibular evoked myogenic potentials in central neurological disorders – Clinical Neurophysiology: official journal of the international federation of clinical neurophysiology 127(1). Jan 2015.
2. Quantified EEG in patients with vertigo of central or peripheral origin – Lea Pollak, Juna Schiffer pages 35-41, published online 07-jul-2009.
3. Cardiovascular changes in patients presenting with vertigo – David D. M Rosario et al.