

Epidemiology of vestibular neuritis in vertigo presenting at tertiary care health care facility in Pakistan

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ABSTRACT

Objective: To determine the frequency of vestibular neuronitis in vertigo patients at a tertiary public health care facility in Karachi Pakistan.

Methodology: It is an epidemiological study conducted at Ear Nose Throat, Head & Neck Surgery Department Jinnah Postgraduate Medical Centre (JPMC), a tertiary care hospital in Karachi, Pakistan. The study duration was from Jan 2007 to Dec 2009. The exclusion criteria included hypertension, diabetes mellitus, hearing loss, other cranial nerves deficits, multidirectional non fatiguing nystagmus, long term medication, Truncal ataxia, inflamed tympanic membrane, mastoid tenderness, high grade fever, and nuchal rigidity. Diagnosis of Vestibular Neuronitis (VN) was made on clinical findings. Patients with sudden onset of vertigo with nausea or vomiting, Clinical signs of unsteadiness, Spontaneous and horizontal nystagmus, Absence of other neurological signs and normal otoscopy and normal hearing were included in the study.

Results: Four hundred fifty seven patients reported with vertigo. One hundred sixty five were diagnosed as VN and were enrolled for the study. It was found that patients of VN were increasing yearly; younger male population was found to suffer more than others. Highest incidence was between the age group 16 to 30 years. More patients reported during the months of July – August and March – April every year during the change of season i.e. summer to winter or winter to summer.

Conclusion: Vestibular Neuronitis was found more in males than females. Younger population was found to suffer more. Peak incidence was noted during the months of July – August every year. Incidence of VN in younger males and during July – August needs more investigation.

KEY WORDS: Vertigo, Vestibular Neuronitis, Acute peripheral vestibulopathy, Vestibular neuropathy.

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INTRODUCTION

Vestibular Neuronitis is defined as acute sustained specific peripheral vestibular system involvement with vertigo and secondary nausea and vomiting. It is not clearly inflammatory in nature and etiology remains unknown. Neurologists often refer it as vestibular neuropathy.¹ Viral or post viral involvement is yet to be documented. Acute vertigo is preceded by or associated with a viral illness in less than half of patients. Since VN has a benign outcome, pathological confirmation of viral process is rare.² Yet VN appears to be a sudden disruption of afferent neuronal input

from one of the two vestibular apparatuses. This imbalance in vestibular neurologic input to the central nervous system (CNS) causes symptoms of vertigo.

VN typically begins over a period of few hours, peaks in the first day and then improves within days. Most patients recover completely within few weeks. Even patients have recurrent vertiginous episodes following rapid head movements to years after onset. Acute spontaneous vertigo results from an imbalance in tonic vestibular activity. The patient has an intense sensation of rotation that is aggravated by head motion and change of position. It is difficult to stand and to walk, and there is tendency to veer toward the affected side. "Autonomic symptoms including malaise, pallor, sweating, and nausea vomiting are nearly always present. Patient with an acute vestibular lesion can stand, although they veer towards the side of lesion. By contrast, patients with vertigo of central origin are often unable to stand without support. Associated neurological signs such as dysarthria, in coordination, numbness or weakness suggest a central origin".³

The symptoms which should be absent are Multidirectional, non-fatiguing nystagmus, hearing loss, other cranial nerve deficits, Truncal ataxia, Inflamed tympanic membrane, Mastoid tenderness High grade fever and Nuchal rigidity.

Lab studies generally do not help to determine the etiology or type of vertigo. Electro Nystagmography, if available, can document the unilateral vestibular loss, but is rarely necessary. Hall pike maneuver should be performed on all patients with vertigo for observation of nystagmus on the basis of the appearance of the nystagmus, a positive head-thrust, and a negative neurologic examination, one can usually be confident in the diagnosis of a unilateral peripheral vestibulo pathy. There is only one study⁴ on the mentioned objective and this need to be explored further. A study is needed to determine the frequency of VN in vertigo patients reporting for treatment at a tertiary public health care facility. Further demographic break up of VN is also lacking in the literature.

METHODOLOGY

It is an epidemiological study conducted at Ear Nose Throat, Head & Neck Surgery Department JPMC, Karachi Pakistan. The study duration was from Jan 2007 to Dec 2009.

Patients who reported with vertigo were included in the study. Diagnosis was made on clinical findings like sudden onset of vertigo with nausea or vom-

iting, clinical signs of unsteadiness, Spontaneous and horizontal nystagmus, Absence of other neurological signs, Normal Otoscopy and Normal hearing.

Patients suffering with hypertension, diabetes mellitus, any chronic ailment, on long term medication, multidirectional, non-fatiguing nystagmus, hearing loss, other cranial nerve deficits, Truncal ataxia, Inflamed tympanic membrane, Mastoid tenderness High grade fever and Nuchal rigidity were excluded from study.

RESULTS

A total numbers of four hundred fifty seven patients reported with vertigo during study period. One hundred sixty five (36%) were diagnosed as VN, these were included in study. Forty seven patients (39 male, 08 female) were seen in 2007 (male: female 5:1), while during 2008, fifty two patients (41 male, 11 female) male: female rates 3.8:1 were seen. During 2009 sixty six patients (46 males, 20 females were seen giving, male: female rates of 2.3:1). Total males were 126 and females were 39 during study period hence a male dominance male: female 3.2:1.

Minimum age of patient was 12 years and maximum age was 52 years. Group wise age is mentioned in Fig-1. Maximum numbers of patients (n=90, 54.6%) were from age group 16-30 years. Minimum numbers of patients (n=03, 1.8%) were from age group below 15 years.

A seasonal distribution of vestibular Neuronitis was also observed. It was maximum in July-August every year during the study period (n= 83, 50%) and then during March-April every year (n=41, 25%). While lowest during January & February every year (n=02, 1.6%). (Fig-2)

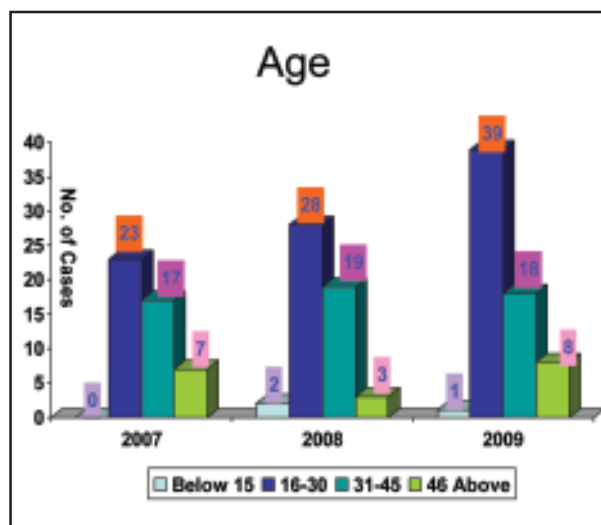


Fig-1: Age of patients.

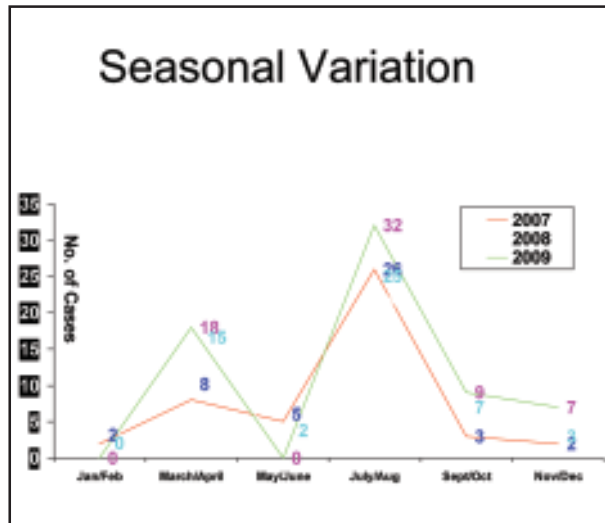


Fig-2: Seasonal variation of vestibular neuronitis.

DISCUSSION

The results in our study are new findings on this aspect of VN in vertigo patients. There is one study, which has mentioned age and gender but seasonal variation is not there.⁴ Further break up of data indicated that both gender were involved equally. Age group 40 to 50 years were found more involved. While in our study we have found young male age group 16-30 years. This constituted 54.6% of VN patients enrolled in the study.

Another study from Japan on patients reporting with vertigo and dizziness has mentioned the seasonal incidence.⁵ This has mentioned maximum number of vertigo and dizziness during March, August and December. Among all these of vertigo/dizziness only 10% were diagnosed as VN, while majority 47.1% were of unknown origin. There is peak incidence in July August (during summer) in our study while this Japanese study has peak incidence during winter. Among the patients diagnosed as VN there is male dominance, which match with our study findings. There is another epidemiological study⁶ carried out in Karachi and Kirkcald simultaneously on vertigo.

This study has mentioned the break up of vertigo patients in both centers. The number of Acoustic Neuroma and VN was similar at both sites among vertigo patients. Though the percentage of VN patients in this series is not mentioned, it seems after analyzing the study that they are least. Male and younger age group are dominant in our and this study.

This needs to be explored further keeping in view the atmospheric environmental, geographical and scenario in Pakistan and Japan. Another study done in Spain on etio-pathogenesis of VN has mentioned age group 40-50 years with equal gender involvement.⁷ Seasonal variation in south East Asia in VN and age, gender findings mentioned in results are new epidemiological findings compared to Japanese and Spanish studies done so far.

CONCLUSION

Vestibular Neuritis (VN) was found in one hundred sixty five patients out of four hundred fifty seven (36%) who reported with vertigo. VN occurred more in males than females. Younger population age group 16-30 years (54.6%) was found to suffer more. Peak incidence was noted during July August. Incidence of VN in younger males and during July August needs more investigations

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