Original article:

Proportion of patients referred to ENT clinic, having Otologic cause of Vertigo

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Abstract:

Background:- Giddiness affects a large percentage of population at any time. It also forms a large part of patient group attended by neurologists, cardiologists and also commonly referred to otolaryngology clinics. Among otologic causes, those commonly regarded are BPPV, Ménière's disease, Labyrinthitis, Tumours of VIIIth nerve, Vestibular neuronitis, Cochlear otosclerosis,

Objective:- Study the proportion of vertigo patients referred to ENT OPD, study the proportion of patients of vertigo referred to ENT OPD, having otologic cause of vertigo & to study common causes of otologic cause of vertigo

Method:- It is prospective and retrospective study over 2 months to rule out the percentage of patients referred to ENT OPD having common otologic causes of vertigo .A data was recorded for 185 subjects above the age of 15 yrs, complaining for vertigo, presenting to ENT OPD of a tertiary care centre from January 2016 to August 2017. A thorough detailed history would be taken from all patients. Otology and oto-neurological examination would be thoroughly done. CT Scan/ MRI would be kept reserved only for those patients in whom there is a suspicion of CP angle tumor. Based on these batteries of tests a diagnosis of otologic cause of vertigo would be made. All the finding would be recorded in a Data sheet.

Results:- The result it was found that 32% of the patients (total 59) who complained of vertigo had an otologic cause for it. From the tests conducted, BPPV occurred as the most common cause (63%). Others were Menier'sdisease(30%), Vestibular neuronitis(3.5%) and Labyrinthine causes(3.5%). Moreover, majority of the patients did not suffer from hearing loss and tinnitus.

Patients also were found to have a perception of rotation more often than that of imbalance. The maximum affected age group was from 41 to 60 yrs and frequency of females was reported to be higher than males.

Conclusion: The result of this study will bring to focus the causes of vertigo that are from otologic disease. Besides it is also aimed to determine the prevalence of vertigo in routine ENT OPD at the present tertiary care centre. This information can also be used for awareness amongst physicians and the general practicioners around this hospital for referring vertigo cases to ENT OPD. This study would also demonstrate effective team approach with contribution from audiologist for all these tests.

Keywords: Meniere's disease, Vestibular Schwannoma, Benign Paroxysmal Positional Vertigo, Vestibular Neuritis

INTRODUCTION:

Giddiness affects a large percentage of population at any time. The incidence of vertigo in general population is about 20 to 30 %. [1]. Almost 1% of population seeks medical advice of general practitioner for symptom of dizziness. It also forms a large part of patient group attended by neurologists, cardiologists and also commonly referred to otolaryngology clinics.[2,3] Reports from western literature suggest almost 30% of patients in otology led vertigo clinics have an otological cause for their dizzy symptoms. [4]. Diagnosis in a patient with vertigo is very difficult. The general practitioner needs to judge as to which cases need referral to specialist and also to refer to which appropriate specialist.

Often the symptoms and signs are vague, non-specific and hard to define, which presents a significant challenge to the attending specialist.[5] .According to studies, following are the causes of vertigo – Otologic40-50% ; Neurological 10-30% ; General Medicinal 10-30% ; Psychiatric/undiagnosed 15-50%. Multidisciplinary vertigo clinic in hospital report the incidence of otologic cause of vertigo to be as high as 65%. By the age of 80, two-thirds of women and one-third of men will have experienced episodes of vertigo.

Among otologic causes, those commonly regarded were Meniere's disease, Vestibular Schwannoma, Benign Paroxysmal Positional Vertigo, Vestibular Neuritis, Sudden Deafness, and Traumatic vertigo.[6] Each has a different approach to treatment and so the exact diagnosis is very essential. Besides, there is a definite dearth of Indian study and data in this regard. The epidemiology of vertigo and vestibular disorders is still an underdeveloped field. Recent studies have underscored the impact of vertigo at the population level, but its determinants and outcome are not well known yet. [7] The present study intends to find some Indian data in its regard as to what percentage of patients referred to our tertiary care ENT centre with history of vertigo actually have an otologic cause.

MATERIAL AND METHODS:

For the patients who formed part of the prospective study group, a thorough history was taken in regards to the type, character and duration of vertigo. Detailed history would include the onset, duration, frequency, precipitating and reliving factors. They were asked if the vertigo was of rotatory type or it was just a feeling of imbalance or if they had black outs on standing from lying position. Presence and association of vomiting along with vertigo was sought for. A proper otological history was taken in the form of ear discharge, ear fullness, hearing loss tinnitus.

A proper general examination was done to rule out any evident systemic cause. BP of all patients was checked in lying position. Otology and oto-neurological examination was done. Otological examination included otoscopy and tuning fork test. Oto-neurological assessment included check for presence of spontaneous nystagmus. Rombergs tests and tests to rule out cerebellar signs were done in all patients. Fistula test and facial nerve were also evaluated. All patients except those who were too old and weak, were told to perform the Unterberger test and the movements and angulations was be recorded.

Dix Halpike test was done in all patients to rule out BPPV as the cause of vertigo. Patients were subjected to caloric test. Caloric test would consist of evaluation of vestibular sensation by stimulating alternately with warm and cold water.

Pure tone audiometry was also done in all these patients. If Meniere’s disease was detected, the patients were subjected for glycerol test..

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Radiological investigation in from of CT Scan/ MRI was kept reserved for patients in whom there is a suspicion of CP angle tumor of vertebro-basilar insufficiency. Based on these batteries of tests it was diagnosed whether the vertigo was of otologic cause or otherwise. Those patients who had an otologic cause of vertigo were given specific treatment for the condition. Those, in whom no otologic cause detected, were referred to Medicine OPD to rule out systemic cause or central cause.

The retrospective data was collected from the vertigo data book maintained in the ENT OPD. All the required data as per the Performa was collected from the OPD record book.

The final data was entered in a data sheet and then the data was analyzed. The Performa to collect the data is as under.

RESULT:

From the OPD records book the data of total patients attending ENT OPD was calculated over a period for which retrospective and prospective data of vertigo was collected. A total of 19017 patients attended ENT OPD over 22 months from December 2016 to September 2017. Out of this 236 patients presented with vertigo. [Fig 1]

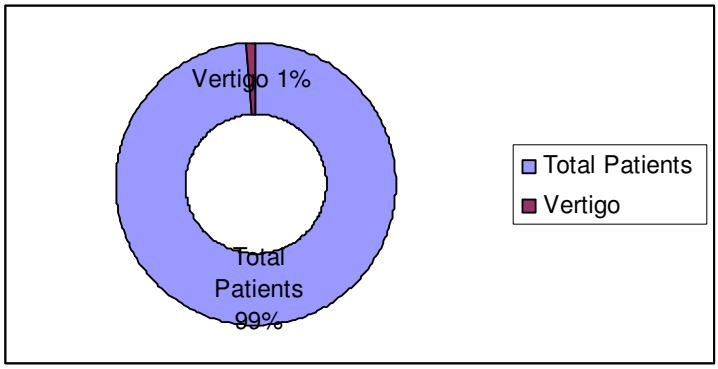

Fig 1: Proportion of patients with vertigo in ENT OPD

98 out of 236 patients with vertigo were males and 138/236 patients were females. [Table 1]

MALE	FEMALE
98	138

Table 1: Gender distribution of patients with vertigo

The patients were divided according to age in four groups. Those less than 25, between 26-40, between 41-60 and the elderly group more than 60. The distribution of vertigo patients according to age is as in figure 2. It was observed that majority of patients were between 40 -60 .

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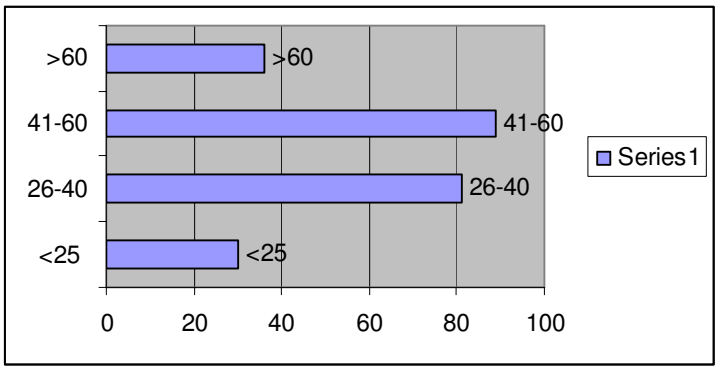

Fig. 2: Age distribution of patients of vertigo

Based of the examination and investigation it was observed that 76 out of all 236 patients had clear cut diagnosis of otological cause of vertigo. Rest 160 patients needed more investigation to reach to a conclusive diagnosis and were considered as non otologic cause of vertigo. [Fig 3]

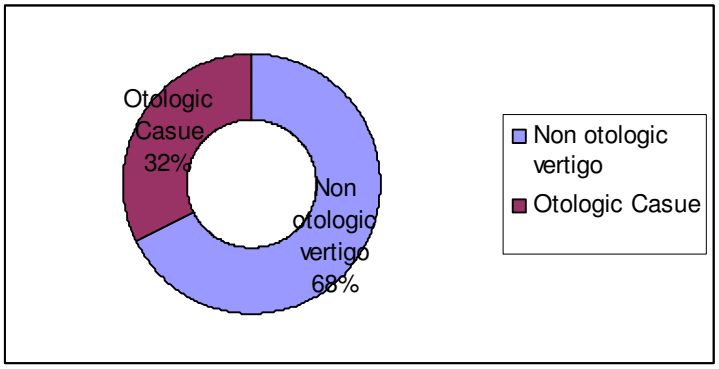

Fig 3: Otologic and non- otologic vertigo proportion.

All the cases who were diagnosed to be due to otologic cause of vertigo were further sub-divide as per the exact diagnosis. Table 2 shows the details of the classification.

Distribution Based On Cause of Vertigo

Otological diagnosis	NO. OF PATIENTTS
BPPV	46
MENIERE'S DISEASE	22
VESTIBULAR NEURONITIS	3
LABYRINTHINE CAUSES	5
NON-ENT CASES	160

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Table 2: Diagnosis of vertigo

Fig 4 shows the percentage wise distribution of otologic causes of vertigo. BPPV formed 60% of all otologic causes of vertigo; Meniere's was 39%; Vestibular neuronitis 4% and Labyrinthitis formed 7% of all causes of otologic causes of vertigo.

Otological diagnosis	Percentage
BPPV	60%
MENIERE'S DISEASE	39%
VESTIBULAR NEURONITIS	4%
LABYRINTHINE CAUSES	7%

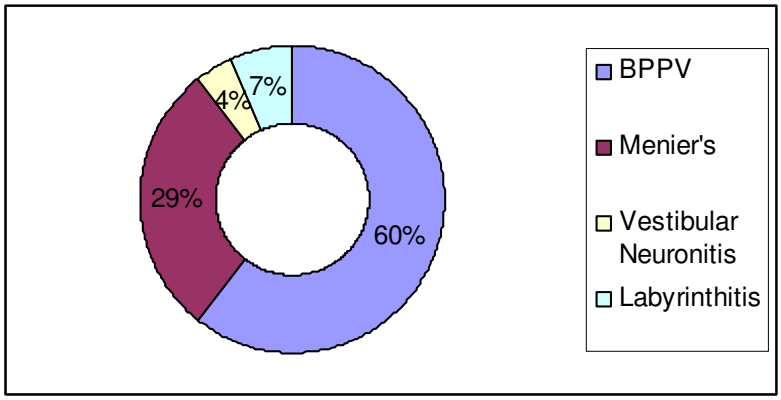

Fig 4: Percentage of Otologic Causes of Vertigo

DISCUSSION:

Diagnosis of cause of vertigo remains a daunting task for most doctors. A detailed history with a systematic approach is the most important component in evaluating patients with dizziness. Causes of vertigo are most commonly otological, followed by central, somato-sensory and visual.[16,17]

The study reveled that more than 1% of patients coming to ENT OPD are of vertigo.Though we did not find a study which studies the prevalence of vertigo in patient of ENT OPD our results are comparable to that of Slone PD who had studied the prevalence of dizziness in primary care. He found that In the United States (US), the

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annual recorded incidence in primary care is 1.7%. [18]. Similarly the Fourth National Morbidity Survey in UK by Cormick et al indicates a prevalence rate of 93 per 10,000 person-years at risk which is comparable to present prevalence of 1% patients in OPD[19]. Corroborating this to general population study by Yardely et al in 1998, who studied the prevalence of dizziness in general population reported that up to 23% of UK population at any given time have vertigo[20]. Interestingly a recent study by Lin HW et al who studied the prevalence of vertigo in elderly population reports that approximately one in five elderly persons experiences annual problems with dizziness or balance.[21]. In this regards this data is of immense importance as this seems to be give the scenario in Indian set up.

Our data suggests that 32% of patients had otologic cause of vertigo. This data is comparable with similar study done by Wells MD and Yande RD in 1987 where they reported the same to be 30%.[4]. Study by AK Arya in 1984 had 41 out of total 91 patients having single labyrinthine cause of vertigo.[22] . Study by Slone et al in 1994 too has otologic causes to be 30%. [3]

In present study more patient's of vertigo were women (138/2436) compared to men (98/236). This trend is supported by study by study by Yardley et al who too said that more women report vertigo compared to males[20].

In present study of the patients having otologic causes of vertigo 60% patients had BPPV, 29 % had Meniere's disease, 7% had Labyrinthitis and 4% had vestibular Neuronitis. Study by Kentala E said that the six most common otologic cause of vertigo were Meniere's disease, Vestibular Schwannoma, Benign Paroxysmal Positional Vertigo, Vestibular Neuritis, Sudden Deafness, and Traumatic Vertigo[6]. Numerous studies quote BPPV to be the commonest cause of vertigo and this deserves special mention attention as it is very characteristic and highly treatable.[1, 17, 23, 24]

Study by Arya et al had 40% patients to be of Meniere's and 22% patents to be of BPPV, 2% labyrinthitis. [22]

In the present study all patients who were diagnosed with BPPV were subjected to particle repositioning maneuver in the form of Epley's maneuver and majority of patients reported improvement in symptoms. Those who met the criteria of Meniere's were subjected to intratympanic gentamycin and majority of these patients also reported improvement in intensity of vertigo, though tinnitus did not improve.

Thus this study shows that otologic causes do form a large subset of patients with vertigo and the most common of the otologic causes can be managed by ENT surgeons with good symptomatic improvement amongst the patient.

CONCLUSION:

The present study shows that vertigo patients form a sizable number of patients in a ENT OPD of a tertiary care hospital. It also demonstrates that otological disorder does form a large subgroup (32%) of patients with vertigo referred to ENT OPD. In addition to this the most common of otologic cause of vertigo can be managed with good benefit to the patient. Thus otology based vertigo clinic should form the first referral centre of patients of vertigo from the general practitioners.

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REFERENCES:

1) Karatas M. Central vertigo and dizziness: epidemiology, differential diagnosis, and common causes. Neurologist 2008;14:355-64
2) Jayarajan V. Rajendrakumar D. A survery of dizziness management in General Practice. J LaryngolOtol 2003; 117: 599-604
3) Sloane PD, Dallara J, Roach C, Bailey KE, Mitchell M, McNutt R,Management of dizziness in primary care. J Am Board FamPract 1994;7:1-8
4) Wells MD, Yande RD. Vertigo in a district NHS hospital J LaryngolOtol 1987; 101:1235-41
5) Hanley K, O'Dowd T, Considine N. A systematic review of vertigo in primary care. Br J Gen Pract 2001;51:666-71.
6) Kentala E. Characteristics of six otologic diseases involving vertigo. Am J Otol. 1996 Nov;17(6):883-92.
7) Neuhauser HK., Epidemiology of vertigo. CurrOpin Neurol. 2007 Feb;20(1):40-6.
8) Hanley K, O'Dowd T, Considine N. A systematic review of vertigo in primary care. Br J Gen Pract 2001;51:666-71
9) Post RE, Dickerson LM. Dizziness: a diagnostic approach. AmFam Physician 2010;82:361-8, 369
10) Guilemany JM, Martinez P, Prades E, Sanudo I, De Espana R, Cuchi A. Clinical and epidemiological study of vertigo at an outpatient clinic. Actaotolaryngol 2004:124:49-52
11) Nedzelski J, Barber H, McIlmoyL. Diagnoses in a dizziness unit J. Otolaryngol 1986;15:101-4
12) Bird JC, Beynon GJ, Prevost AT, Baguley DM. An analysis of referral patterns for dizziness in the primary care setting. Br J Gen Pract 1998; 48:1828-32
13) Bath AP, Walsh RM, Ranalli P, Tyndel F, Bance ML, Mai R et al. Experience froma multidisciplinary "dizzy" clinic. Am J Otol 2000; 21:92-7
14) NeuhauserHK.Epidemiology of vertigo. CurrOpin Neurol. 2007 Feb;20(1):40-6.
15) Erbek SH, Erbek SS, Yilmaz I, Topal O, Ozgirgin N, Ozluoglu LN, Alehan F. Vertigo in childhood: a clinical experience.Int J PediatrOtorhinolaryngol. 2006 Sep;70(9):1547-54. Epub 2006 May 24.
16) Newman-Toker DE, Hsieh YH, Camargo CA Jr, Pelletier AJ, Butchy GT, Edlow JA. Spectrum of dizziness visits to US emergency departments: cross-sectional analysis from a nationally representative sample. Mayo ClinProc 2008;83:765-75
17) Kroenke K, Hoffman RM, Einstadter D. How common are various causes of dizziness? A critical review. South Med J 2000;93:160-7; quiz 168
18) Sloane PD. Dizziness in primary care: results from the National Ambulatory Medical Care Survey. J FamPract 1989; 29: 33-38.
19) Cormick A, Fleming D, Charlton J. Morbidity statistics from general practice: fourth national study 1991-1992. London: HMSO,1995.
20) Yardley L. Owen N, Nazareth I, Luxon L. Prevalance and presentation of dizziness in a general community sample of working age people. Br J Gen Pract 1998;48:1131-5
21) AK Arya, DA Nunea. What proportion of patients referred to an otolaryngology vertigo clinic have an otological cause for their symptoms. The Journ of laryngol and otology 2008;122:145-149

22) Lin HW, Bhattacharyya N. Balance disorders in the elderly: epidemiology and functional impact.Laryngoscope. 2012 Aug;122(8):1858-61.
23) Halmagyi GM. Diagnosis and management of vertigo. Clin Med 2005;5:159-65
24) Kentala E, RauchSD. A practical assessment algorithm for diagnosis of dizziness. Otolaryngol Head Neck Surg 2003;128:54-9

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