

Vertigo: A Spectrum of Cases

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Abstract

Background: Dizziness, including vertigo and disequilibrium, is a common clinical problem affecting approximately one third of the population in one form or another at some time in their life. The patient often finds it difficult to choose the specialty he should consult for his troublesome disability. Epidemiology of vertigo is still an under-explored territory. Broad based demographic studies have always shown that vestibular disorders are under-diagnosed and undertreated.

Methods: This study was conducted to evaluate cases of dizziness in Vertigo Clinic. All the patients in ENT OPD were screened for symptom of dizziness. Thorough otoneurological examination was done in all cases. Specialized tests of vestibulometry, radio-imaging investigations, biochemical parameters and consultations with other specialists were done in needy cases. The results were analyzed with special attention to the causes of otologic and non-otologic dizziness.

Result: Out of entire ENT outpatients, 2.21% presented with dizziness. Females were more affected. The symptom was more common in elderly. Majority of patients had identifiable cardiogenic or otogenic causes. Uncontrolled hypertension and BPPV were the commonest causes in Cardiogenic and otogenic dizziness respectively.

Conclusion: Peripheral vertigo can easily be diagnosed and differentiated from other causes if studied in details. Management of patients with dizziness can be effectively done through Vertigo Clinic.

Keywords: Dizziness; Giddiness; Vertigo Clinic; Otologic; BPPV

Abbreviations

ENT: Ear Nose Throat; OPD: Out Patient Department; CT: Computerized Tomography; MRI: Magnetic Resonance Imaging; BPPV: Benign Paroxysmal Positional Vertigo; TIA: Transient Ischemic Attack

Introduction

Dizziness is one of the most common complaints among patients presenting to primary health-care physicians, neurologists, cardiologists and otolaryngologists. 'Dizziness' and 'Giddiness' are common terms used by the patients to describe their condition when they feel unsteady, off balance, rocking, swimming, walking on cotton wool, clumsy on their feet or dizzy in their head. These symptoms are nonspecific and cover broad differential diagnosis which includes disorders like light headedness, disequilibrium, ataxia, syncope and the true vertigo. They do not include the obligatory illusion of movement of either themselves or their surroundings, which is necessary to establish that they have true vertigo [1].

The term 'Vertigo' has been derived from Latin words 'Vertere' meaning 'to turn' and 'igo' meaning 'condition of turning about'. Vertigo can be defined as a sense of feeling the environment moving when actually it does not. It is an illusion of either oneself or the environment rotating [2]. It is debilitating to the patients and frustrating for the clinicians. Due to the multi-causative etiology of vertigo all patients reporting to various specialties like general medicine, cardiology, neurology, neurosurgery, psychiatry etc are not evaluated at one single platform. Consequently, a basic limitation exists in evaluating the magnitude of the problem at large. There are few reports in the world literature and very less in Indian literature on etiology and prevalence generated from retrospective analysis of known cases of vertigo seen in the specialized vertigo clinics which are run by handful at tertiary level. A study was therefore conducted with the aim to give a general overview of the approach to dizziness and to assess the importance of Vertigo clinic.

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Table 1:

Subjects	Patients with vertigo (n=234)	Percentage with respect to cases of vertigo	Percentage with respect to total number of patients (n=10555)
Male	99	42.30%	0.94%
Female	135	57.70%	1.27%
Total	234		2.21%

Prevalence among patients with true vertigo.

Table 2:

Age group (years)	Number of vertigo patients			Percentage of vertigo patients	
	Male	Female	Total	Male	Female
10–19	-	2	2	-	0.85%
20–29	10	7	17	4.27%	2.99%
30–39	21	29	50	8.97%	12.39%
40–49	23	35	58	9.83%	14.96%
50–59	13	21	34	5.55%	8.97%
60–69	23	33	56	9.83%	14.10%
70–79	9	8	17	3.85%	3.42%
Total	99	135	234	42.30%	57.70%

Age distribution.

Materials and Methods

The study was conducted in Department of ENT and Head & Neck Surgery, in a tertiary care hospital of Indian Armed Forces. All the patients presenting in ENT outpatient department with sense of imbalance were screened. The patients were soldiers, ex-servicemen and the dependants of the soldiers and ex-servicemen.

Patients with dizziness were further evaluated in Vertigo Clinic. Detailed history was taken. Thorough clinical and otoneurological examination was done. Bithermal Caloric test was done in all cases except patients with tympanic membrane perforation and in patients having spontaneous nystagmus. Pure tone audiometry was done in all patients presenting with vertigo associated with hearing loss. Further audio-vestibular examination which included impedance audiometry, tone decay test, test for recruitment, brain stem evoked response audiometry, electrocochleography and electronystagmography were performed wherever indicated. Imaging studies such CT scan and MRI were undertaken as indicated. Relevant blood tests including haemogram, biochemical parameters, glucose tolerance test, renal and hepatic function tests etc were carried out as and when required. Wherever needed, opinions of consultants of relevant departments like medicine, neurology, neurosurgery, cardiology, ophthalmology and psychiatry were obtained.

Results and Discussion

Total number of patients attending ENT outpatient

Table 3:

Etiology	Number	Percentage of prevalence	
		Percentage with respect to cases of vertigo (n=234)	Percentage with respect to total number of patients (n= 0555)
Otologic	98	41.88%	0.93%
Cardiovascular	100	42.74%	0.95%
Neurologic	26	11.11%	0.25%
Psychogenic	4	1.71%	0.04%
Metabolic	2	0.85%	0.02%
others	4	1.71%	0.04%

Etiologic spectrum.

department was 10555 out of which 234 patients presented with dizziness. Prevalence of dizziness observed was 2.21% with female preponderance (Table 1). Dizziness was more common in patients in 5th decade followed by 7th and 4th decade (Table 2).

Cardiovascular causes being 42.74% were the most common cause of dizziness. Otologic causes of rotatory vertigo being 41.88%, came a close second. Neurologic causes constituted 11.11% of all vertigo patients. Other cause included psychogenic (1.71%), metabolic (0.85%) and miscellaneous (1.71%) (Table 3).

Benign Paroxysmal Positional Vertigo was the commonest otologic cause found in this study. It was seen more in females. Meniere's disease and vestibular neuronitis were the other common causes. Some cases remained undiagnosed inspite of thorough evaluation (Table 4).

Among the non-otologic etiology, cardiovascular causes were the commonest with hypertension forming the maximum number of cases (32.48% of all vertigo patients). In neurologic causes migrainous vertigo was the commonest entity followed by cervical spondylosis (Table 5).

Vertigo is often an untreated symptom and is frequently associated with serious handicap and considerable psychological morbidity [3]. Though a variety of etiology has been studied and described, the exact cause often remains elusive.

Approximately one quarter of people experience dizziness at some time in their life and in 80% of cases this is severe enough to see a doctor [4]. It usually begins in the fourth decade and attains highest prevalence in the sixth to seventh decade [5]. In this study, the highest prevalence was found in the fifth decade and lowest in the second decade. The overall prevalence in the dependant population of our hospital was found to be 2.21%.

Women (57.7%) were found to be affected more commonly than the men (42.30%), the ratio being 4:3 approximately. Katsarkas in 1994, in a study on dizziness in the elderly reported a prevalence of 63% in women as compared to 37% in men [6]. In another population based study on incidence of benign paroxysmal positional vertigo, 64% of affected patients were women [7].

It is important to ascertain whether patient has presented with

Table 4:

Disease	Number of patients	Percentage with respect to otologic diseases
BPPV	43	43.88%
Meniere's disease	19	19.39%
Meniere's syndrome	5	5.10%
Vestibular neuronitis	13	13.26%
Labyrinthitis	3	3.06%
Chronic otitis media	7	7.14%
Miscellaneous / undiagnosed	8	8.16%
Total	98	

Common otologic causes.

Table 5:

Category	Etiology	Number of patients	Percentage	Prevalence
Cardiovascular	Hypertension	76	32.48%	0.72%
	Anemia	21	8.97%	0.20%
	Ischemic heart disease	3	1.28%	0.03%
Neurologic	Migraine	13	5.55%	0.12%
	Cervical spondylosis	5	2.14%	0.05%
	Cerebellar tumour	3	1.28%	0.03%
	Seizures	3	1.28%	0.03%
	Cerebellar infarction	2	0.85%	0.02%
Metabolic	Diabetes mellitus	2	0.85%	0.02%
Miscellaneous	Psychogenic	4	1.70%	0.04%
	undiagnosed	4	1.70%	0.04%

Non-otologic causes of vertigo.

single episode of vertigo, recurrent episodic vertigo or chronic dizziness. Vestibular neuronitis, acute labyrinthitis and brain stem stroke present with acute severe rotatory vertigo which is inevitably prolonged and is associated with autonomic symptoms. Identification of trigger factor is critically important for diagnosis in cases with recurrent vertigo or dizziness. Certain triggering by head movements, e.g. looking up, lying down or turning over in bed is highly suggestive of BPPV. One should not think of cervical or vertebrobasilar vertigo before excluding BPPV [8]. Triggering by loud sound or Valsalva maneuver suggests labyrinthine fistula. Migraine associated vertigo may be triggered by anything that triggers migrainous headache.

Careful history taking to include associated symptoms is equally important for diagnosis in cases with recurrent vertigo or dizziness. Aura, aural fullness, tinnitus and hearing loss suggest Meniere's disease. Brain stem symptoms indicate TIA whereas palpitation, breathlessness, syncope etc suggest cardiac arrhythmia.

In cases of chronic dizziness the clinician should also keep in mind the possibilities of general medical disorders, concomitant visual handicaps, associated neurological disorders, excessive use of psychotropic and antivertiginous medication.

Due to multi-causative etiology of vertigo, the patients report to various specialists. They do not usually get evaluated at one platform. Most published studies have, in fact, analyzed the prevalence of otologic vertigo based on known cases of vertigo who have already undergone evaluation in specialized vertigo clinics. Their data, therefore tend to be biased in favour of otologic vertigo.

In a study conducted by Raman Abrol et al [9] in the year 2001, cardiovascular diseases were the leading cause of vertigo. Out of 71

cases of vertigo, they attributed 32 cases (45%) to cardiovascular diseases, of which hypertension alone accounted for 23 cases (32%). Overall prevalence of vertigo due to cardiovascular diseases in the general population was found to be 0.32%. Neurologic etiology was found in 19.7% cases, common being cervical spondylitis (15.5%) and migraine (2.8%). Only 11.4% cases of vertigo were attributed to otologic causes of which BPPV formed 7% and Meniere's disease 7.2%. Among the metabolic disorders associated with vertigo, diabetes mellitus was found to be the leading cause, accounting for 5 cases (7%).

In our study also, cardiovascular diseases were the commonest cause of vertigo (42.74%) as in the study by Abrol et al. This was followed closely by the otologic causes contributing 41.88%. Diabetes mellitus was the only metabolic disorder found to cause vertigo accounting for 0.85% cases. The analysis of otologic causes of vertigo showed benign paroxysmal positional vertigo to be the commonest disorder constituting 43.88% of the total otologic causes which matched with the findings of Neuhauser et al [10].

Meniere's disease and vestibular neuronitis were the other common otologic causes. Four patients had strong psychiatric element of depression. Only four cases remained undiagnosed after thorough evaluation in our vertigo clinic.

Conclusion

In a survey of 10555 patients attending ENT OPD, 234 patients had vertigo. The most common cause was cardiovascular causes followed by otologic and neurologic causes. Peripheral vertigo can easily be diagnosed and differentiated from other causes if studied in detail. This study conducted also emphasizes the importance of

Vertigo Clinic.

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