

**AETIOPATHOLOGICAL AND CLINICAL SPECTRUM OF VERTIGO CASES
PRESENTING AT VERTIGO CLINIC AT TERTIARY CARE LEVEL HOSPITAL IN
WESTERN RAJASTHAN**

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Introduction-

Vertigo refers to erroneous perception of movement of either one's own body, such as swaying or rotation, or of the surrounding, or both, and is often characterized by dizziness. Vertigo has a multi-causative etiology. Central conditions that cause vertigo include vestibular migraine (VM), posterior circulation ischemia (PCI), tumours and multiple sclerosis, etc; and the potential causes of peripheral vertigo are benign paroxysmal positional vertigo (BPPV), Meniere's disease, vestibular neuronitis, etc. Moreover, there are also psychogenic factors involved.

Aim and objectives-

To find spectrum of vertigo cases presenting to vertigo clinic in terms of aetiology, socio-demographic, clinical characteristics.

Materials and Methods-

The present study was conducted at Medicine department S.N. Medical College Jodhpur on 50 vertigo patients.

Results and Observations-

The preponderance of vertigo seen in females as compared to males On basis of etiology we found that peripheral cause of vertigo is most common seen in 60% patients, followed by central cause seen in 24% patients, followed by other causes (Anaemia, Anxiety and Cervical spondylitis) and idiopathic category. Among peripheral cause of vertigo BPPV was most common etiology followed by Labyrinthitis and Vestibular Neuritis. Among central cause of vertigo, migraine was most common followed by Posterior circulation stroke and Multiple Sclerosis.

Conclusion-

The prevalence of vertigo was higher in females and it affects all age group .

Peripheral causes of vertigo were more common than central cause. The maximum number of vertigo patients complaint with feeling of blackouts and ringing, buzzing during the attack.

Keywords: Vertigo, vestibular migraine (VM), posterior circulation ischemia (PCI), multiple sclerosis(MS), benign paroxysmal positional vertigo (BPPV).

Introduction

Vertigo refers to faulty perception of movement of either one's own body, such as rotation, or of the surrounding, or both, and is often distinguished by dizziness.¹⁻³ which is associated with secondary symptoms such as postural instability, sweating, nausea, and vomiting.⁴ It is among one of the most common cause for a physician visit having high burden with relative under-reporting because of its nature and unpredictability of attacks.⁵⁻⁸

Vertigo is seen to be associated with multiple causes. The most common cause of vertigo is vestibular disorders which includes benign paroxysmal positional vertigo (BPPV), Ménière's disease (MD), vestibular neuritis (VN), migraine, labyrinthitis, and cervical migraine and anxiety disorders.^{2,9} Peripheral vestibular diseases were reported to constitute a majority of cases of vertigo in a study conducted in Africa.¹⁰ BPPV has been reported as the most common cause of vertigo in India.¹¹

The clinical spectrum seen in various patients are different depending on the underlying cause. BPPV is characterized by vertigo of sudden onset, lasting for approximately one minute and usually induced by changes of the head or body position. However attacks may last up to several hours in Ménière's disease.¹¹ The prevalence of vertigo increases with increasing age and higher frequency is seen in women.¹²⁻¹⁵

As the vertigo is subjective in nature therefore clinicians have to follow a multidimensional approach for management . The assessment of vertigo includes detailed history, vestibular assessment by use of otolaryngological diagnostic tests.³ With a fluctuating episodic pattern of symptoms, vertigo treatment aims to minimize or eliminate the number and severity of acute attacks, reduce tinnitus, and prevent impaired vestibular functions.

Aim and Objectives

Find aetiology of vertigo and clinical spectrum of cases with tests in Vertigo lab MDM Hospital Jodhpur.

Material and methods

The Cross sectional Study was done at department of Medicine, Mathuradas Mathur Hospital attached to Dr. S. N. Medical College, Jodhpur, Rajasthan, India from June 2020 to December 2022 on 50 vertigo patients.

Inclusion Criteria:

1. Patients attending the Medicine, ENT, Neurology OPD with chief complaint of Vertigo and suitable for vertigo clinic tests
2. Age group 18 to 70 years old and both gender.

Exclusion Criteria:

1. Insufficient language skills or severe orthopedic or neurological diseases affecting balance.
2. Patients suffering from Head injury and cardiac disease with vertigo.
3. Patient has seizures with dizziness.

Methodology-

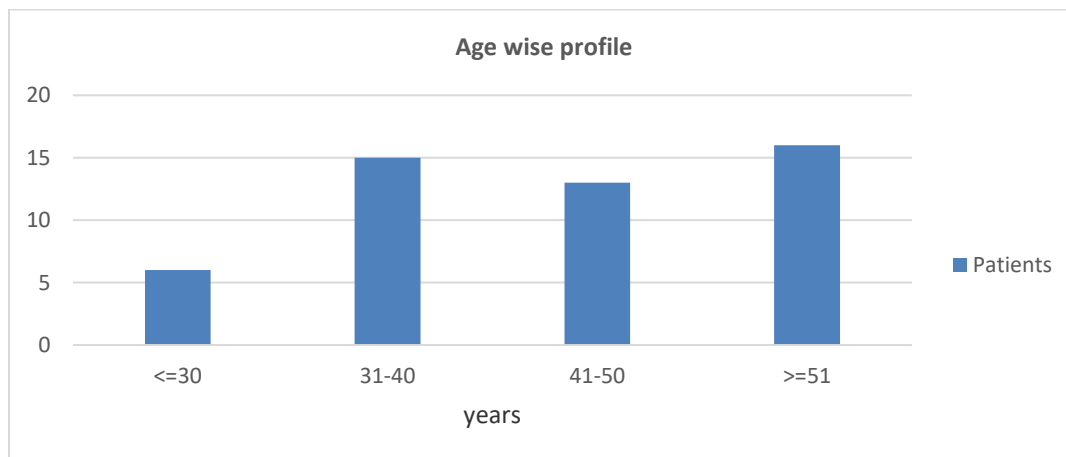
After ethical clearance from institutional ethical committee, bed head tickets of all vertigo patients was reviewed. Detailed history was taken. Thorough clinical and otoneurological examination was done.

Cranicorpography (Romberg test, Tandom walking test) , Dyanamic visual acuity, Subjectivevertica, Stabilometry and video nystamgmography was done in all cases. Imaging studies such CT scan and MRI was 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

Table-1 Age distribution of the cases

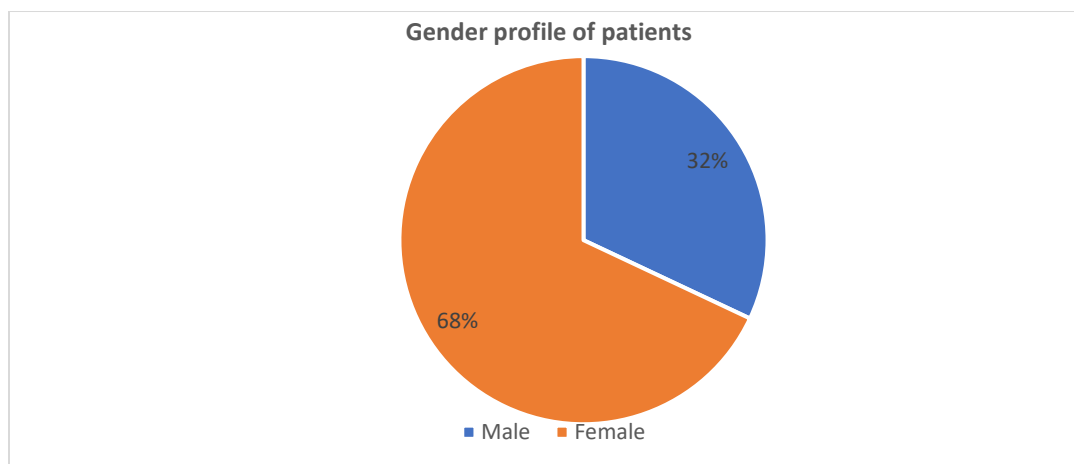
Age Groups	≤30 years	31-40 years	41-50 years	≥51 years	Total
Patients	6	15	13	16	50
%	12	30	26	32	100



The table shows that most of the cases are above age of 30 years

Table-2 Gender wise distribution the cases

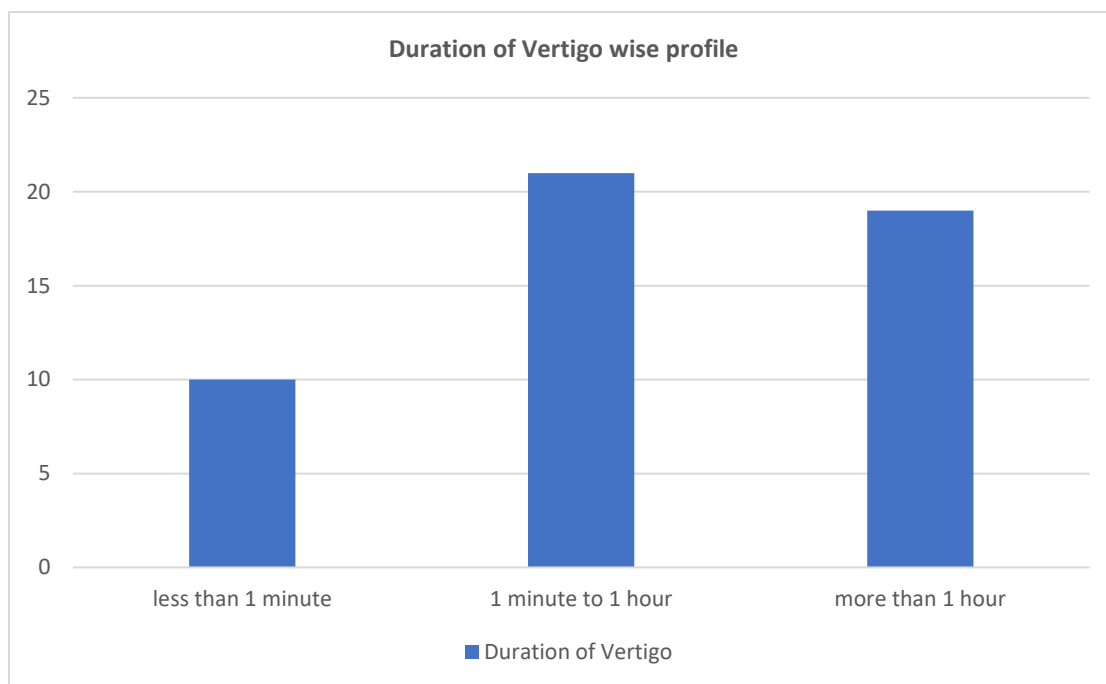
	Male	Female	Total
Patients	16	34	50
%	32	68	100



The table shows that female cases are more than males

Table-3 Duration of Vertigo profile

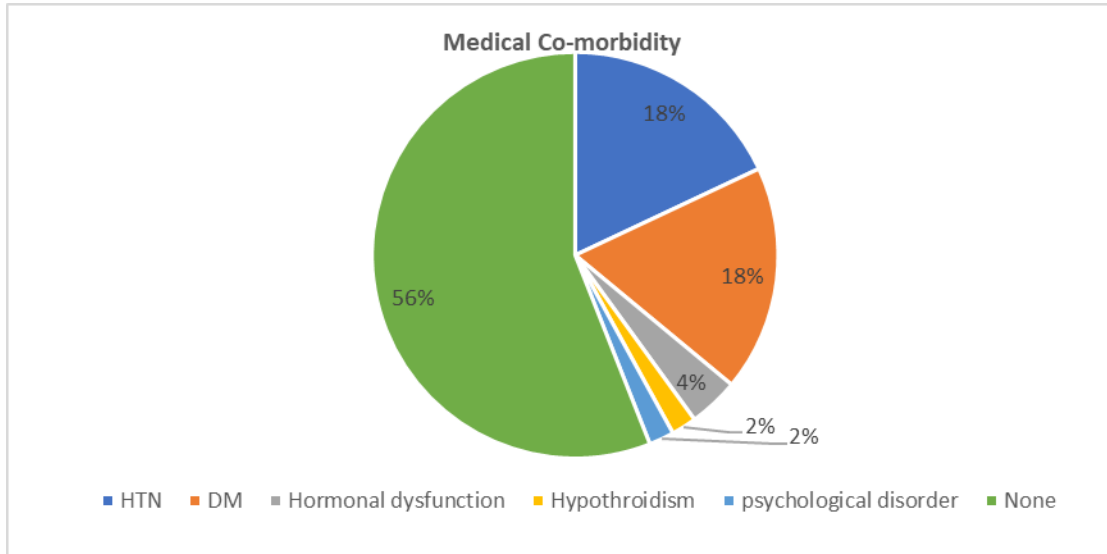
	less than 1 minute	1 minute to 1 hour	more than 1 hour
patients	10	21	19
%	20	42	38



This table shows that duration in most patients were between 1 min to 1 hour

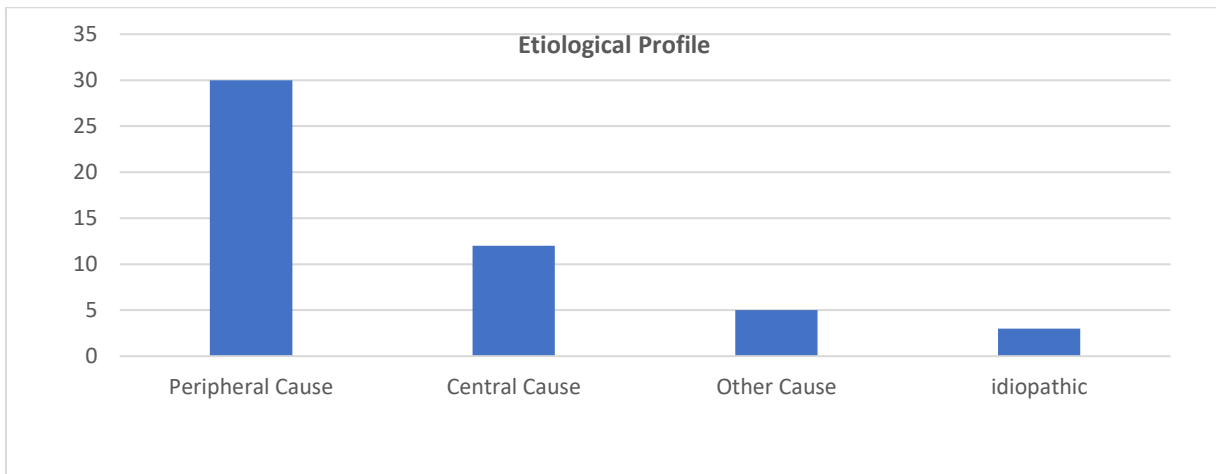
Table-4 Medical Co-Morbidity profile of Vertigo Patients

Medical Co-morbidity	Patients	%
HTN	9	18
DM	9	18
Hormonal dysfunction	2	4
Hypothyroidism	1	2
psychological disorder	1	2
None	28	56



This table shows that most of the cases were without any comorbidity and patients with Diabetes and Hypertension were 18%

Table-5 Causes of Vertigo (N = 50)

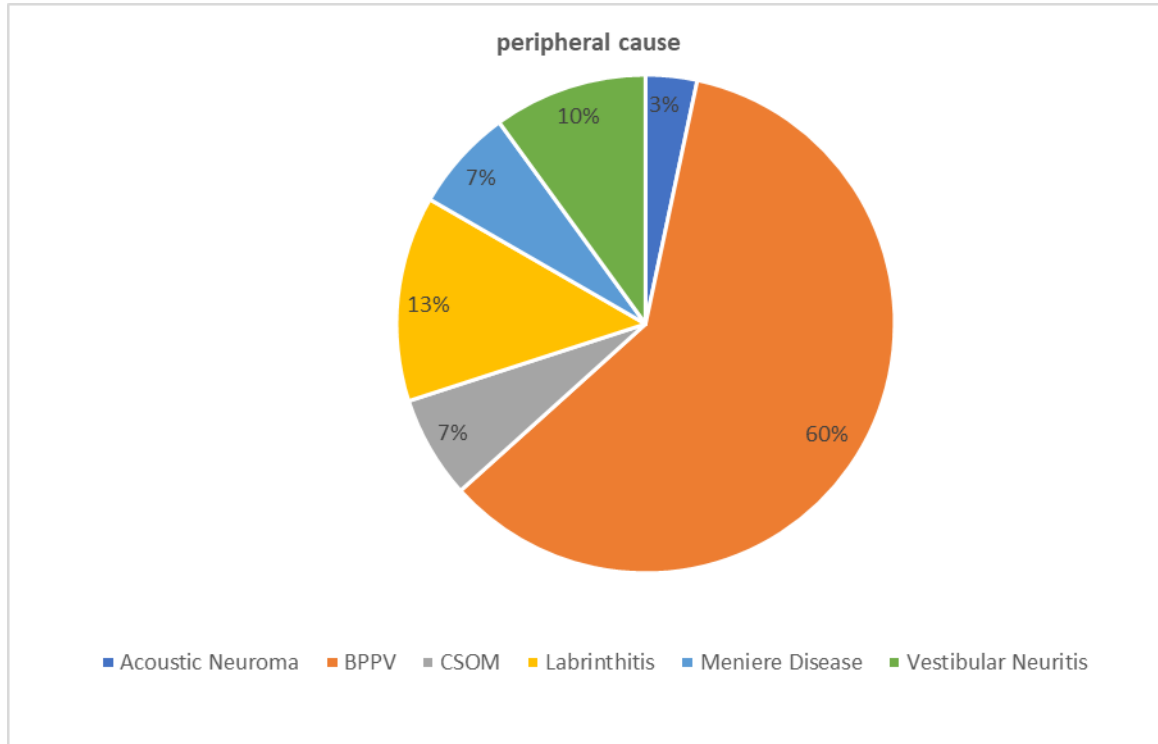


The table shows that 60% cases are with peripheral cause

Table-6 Peripheral Cause (n = 30)

Cause	Cases	%
Acoustic Neuroma	1	3.33
BPPV	18	60.00
CSOM	2	6.67

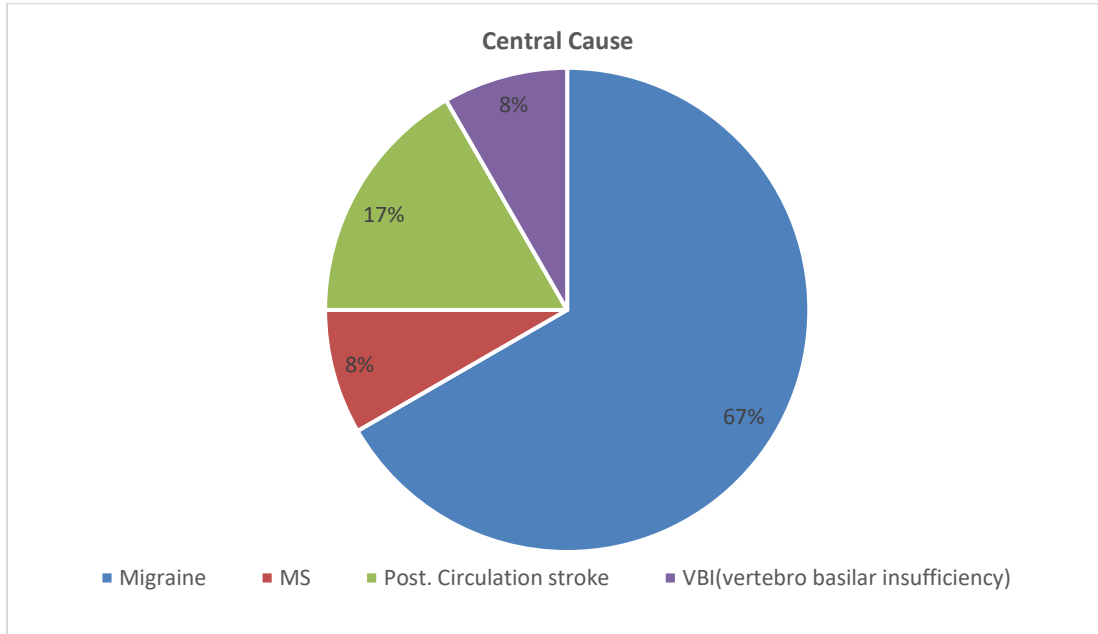
Labyrinthitis	4	13.33
Meniere Disease	2	6.67
Vestibular Neuritis	3	10.00



This table shows that most common cause is BPPV

Table-7 Central Cause (n = 12)

Cause	Cases	%
Migraine	8	66.67
MS (Multiple Sclerosis)	1	8.33
Post. Circulation stroke	2	16.67
VBI (Vertebro Basilar Insufficiency)	1	8.33



This table shows that Migraine is commonest central cause of vertigo

Table-8 Other Cause (n = 5)

Cause	Cases	%
Anaemia	1	20
Anxiety	2	40
Cervical Spondylitis	2	40

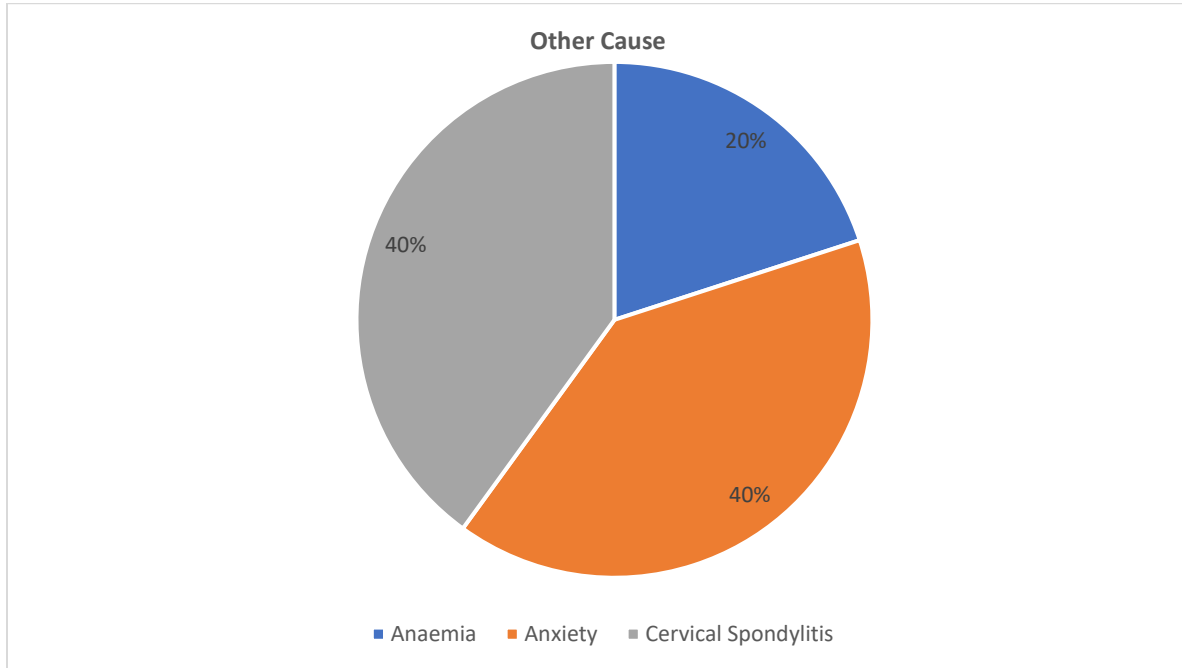
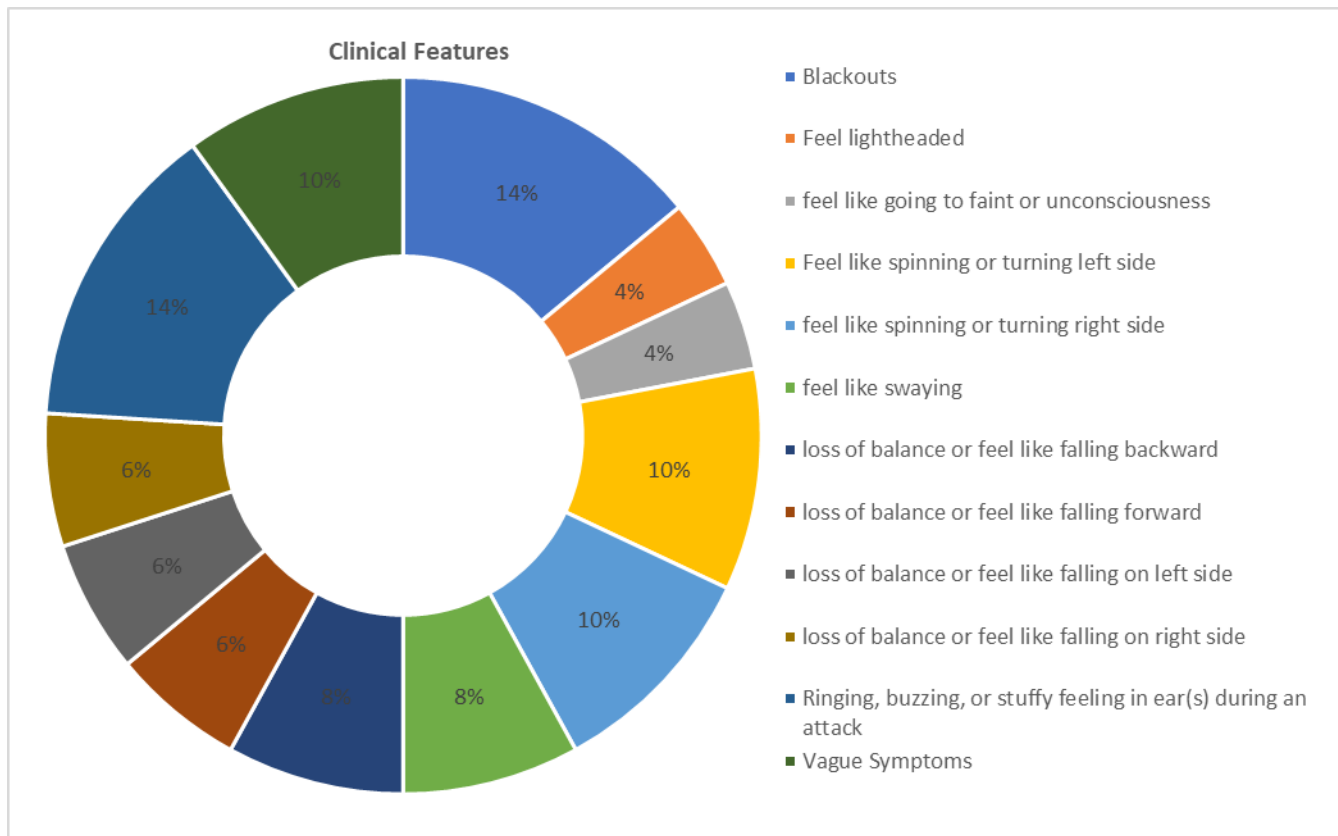


Table-9 Clinical Features (N =50)

Features	Cases	%
Blackouts	7	14
Feel lightheaded	2	4
feel like going to faint or unconsciousness	2	4
Feel like spinning or turning left side	5	10
feel like spinning or turning right side	5	10
feel like swaying	4	8
loss of balance or feel like falling backward	4	8
loss of balance or feel like falling forward	3	6
loss of balance or feel like falling on left side	3	6
loss of balance or feel like falling on right side	3	6
Ringing, buzzing, or stuffy feeling in ear(s) during an attack	7	14
Vague Symptoms	5	10



Discussion

In present study maximum patients having age more than 50 years (Table-1). McNally and Stuart¹⁶ (1942) in their study found that vertigo begins in the fourth decade and attains its highest prevalence in the sixth decade which is consistent with our findings.

In present study the preponderance of vertigo seen in females as compared to males. Out of 50 patients, 16 (32%) patients belonged to male gender and 34 (68%) patients belonged to female gender (Table-2). Similarly Staibano et al.¹⁷ in their study also found higher incidence of vertigo in females. They found that 66.4% of 292 patients were female and rest are males. Similarly Yin et al.¹⁸ in their clinical epidemiologic study of vertigo found that 59.28% of 2,169 patients were female. Similarly Bittar et al.¹⁹

analyzed the prevalence of dizziness in the city of Sao Paulo and revealed that the 53% of 1,960 patients were women.

When we analyze data on basis of duration of migraine the present study found that 20% (N=10) cases of vertigo having duration of complaint lasting less than 1 minutes, in 42% (N=21) cases of vertigo having duration of complaint lasting more than 1 minutes but less than 1 hour, and in 38% (N=19) cases of vertigo having duration of complaint lasting more than 1 hour (Table-3). Ronald H. Labuguen et al.²⁰ showed vertigo of several seconds to a few minutes occurs in Benign paroxysmal positional vertigo; vertigo of Days occurs in Early acute vestibular neuronitis, stroke; migraine .

When we analyze data on basis of comorbidity we found that majority of patients (N=28) in present study have no medical comorbidity . HTN and DM were the most frequent comorbidity seen , followed by Hormonal dysfunction, followed by hypothyroidism and psychological disorder (Table-4). Similarly Mohan Kameswaran et al.²¹ in their study found that out of 1520 patients 202 patients have comorbidities, 55.4% had cardiovascular disease and 38.6% had diabetes mellitus, 5.9% have Hormonal dysfunction and 0.5% have psychological disorder.

On analysing data on basis of etiology we found that peripheral cause of vertigo is most common seen in 60% (N=30) patients, followed by central cause seen in 24% (N=12) patients, followed by other causes (Anaemia-1 case, Anxiety-2 cases and Cervical spondylitis-2 cases) and 3 cases of idiopathic category (Table-5). Similarly Mohan Kameswaran et al.²¹ in their study found that out peripheral cause of vertigo is most common seen in 74.3% cases , followed by other causes seen in 18.1% patients (Anaemia, Anxiety and Cervical spondylitis) and 12.36% cases of idiopathic category and followed by central cause seen in 7.63% patients.

In present study among peripheral cause of vertigo BPPV was most common etiology seen in 60% (N=30) vertigo patients, followed by Labyrinthitis which is seen in 13.33% (N=4) cases, followed by Vestibular Neuritis which seen in 10% (N=3) cases . Meniere Disease and CSOM each seen in 2 cases (Table-6). Similarly Mohan Kameswaran et al.²¹ in their study found that BPPV was most common etiology seen in 67.5% among peripheral causes of Vertigo, followed by Labyrinthitis seen in 15.68% cases, followed by seen in Vestibular Neuritis seen in 8.06% cases . In their study Meniere Disease seen in 4.96% cases which is consistent with present study results. Baydan et al.²² in their study they found that that 68.04% of 444 patients suffered from peripheral vestibular disorders including BPPV, Meniere's disease, vestibular neuritis and vestibular hypofunction and the most common peripheral disorder was BPPV which is consistent with our results.

After BPPV, Labyrinthitis and vestibular neuritis was the second most common diagnosis of the patients visiting our Hospital with vertigo/dizziness. In present study, the third peripheral cause of vertigo was Meniere's disease . In the literature, Meniere's disease is among the top four causes of vertigo. The diagnosis and management of Meniere's disease is difficult and controversial.^{23,24}

In present study among the 24% cases of central cause of vertigo, migraine was most common etiology seen in 8 vertigo patients, followed by Posterior circulation stroke seen in 2 cases, followed by

seen in Multiple Sclerosis(MS) and vertebro-basilar insufficiency (VBI)seen in 1 case each (Table-7).Similarly Mohan Kameswaran et al.²¹ in their study found that migraine was most common etiology seen in among central causes of Vertigo, followed by Cerebro-vascular accident (CVA) and MS which is similar to our results. Similarly Baydan et al.²² in their study found that Central vertigo was found in 11.65% of 557 patients, 15.38% of whom were diagnosed with vestibular migraine and 13.84% were diagnosed with vertebro-basilar insufficiency which is similar to our results.

Vestibular migraine (VM) is common but underdiagnosed in the general population because of diagnostic difficulties and has a considerable healthcare burden .

In present study maximum number of patients presented with feeling of blackouts or present with feeling of ringing, buzzing, or stuffy feeling in ear(s) during an attack during attack of vertigo.20% patients feel like spinning or turning left side or right side,26% patients have feeling of loss of balance and 10% patients have vague symptoms(Table-9).Similarly Mohan Kameswaran et al.²¹ in their study found that two-thirds of the patients presented with either “feeling like falling on right side” and/or “feeling like spinning or turning right side” as the two most common vertigo symptoms which is similar to clinical features seen in our patients.

Conclusion- The prevalence of vertigo was higher in females and it affects all age group . Peripheral causes of vertigo were more common than central cause. The maximum number of vertigo patients complaint with feeling of blackouts and ringing, buzzing during the attack.

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