

A Study of Predisposing Factors of Persistent Postural Perceptual Dizziness (PPPD) in Eastern Indian Population

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ABSTRACT

Objective: To study patients with PPPD during the study period and to identify the predisposing factors giving rise to this condition

Methodology: Patients attending the Neurology outpatient department at Aarogyam Neuroclinic, Durgapur, West Bengal from January 2021 to October 15, 2021 fulfilling the Modified Barany society criteria for PPPD were included in the study. All these patients were examined in detail and all necessary investigations were done to rule out other differential diagnosis.

Results: Total of 60 patients satisfied the diagnostic criteria of PPPD during the study period .Out of 60 patients, 40 (66.67%) were male and 20(33.33%) were female. Most common Age groups were 40-49 years(31.66%),30-39 years(25%) and 60-69(18.33%).A study of the risk factors showed Anxiety disorders(43.33%), Migraine(31.66%), Combination of Migraine and Anxiety disorder(23.33%), Pheripheral vertigo related conditions(23.33%), Insomnia(16.66%), Fibromyalgia(10%) and depression(10%). In pheripheral vertigo related disorders- 8 had benign positional postural vertigo,2 had vestibular neuritis, 1 had meniers disease and 2 unclassified disorder. 24(40%) patients had degenerative cervical or Lumbar pain related to degenerative spine diseases.

Conclusion: It is a common disorder seen in the age group 30-50 years. Most common predisposing causes are Anxiety disorder ,Migraine, combination of both and peripheral vertigo related disorders. Many of the patients have associated pain disorders like fibromyalgia and spine diseases.

KEYWORDS: Aarogyam, Neuroclinic, Durgapur, Population, psychological distress.

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INTRODUCTION

PPPD (Persistent Paroxysmal Perceptual Dizziness) is a very common and important cause of dizziness in clinics and is particularly common in middle age.(1,2)

PPPD is a chronic disorder which has dizziness and no spinning vertigo induced by self-movement, challenging visual environments, and upright posture as the most important clinical features. (3,4)

PPPD has been included in the 11th revision of the International Classification of Diseases, and is described as a persistent chronic vestibular syndrome typically preceded by acute vestibular disorders (5).

The core symptoms of these disease are dizziness, unsteadiness, and/or non spinning vertigo that are worsened by an upright posture (standing or walking), active or passive motion, and exposure to moving visual stimuli or complex visual patterns (5).

It is considered a functional disorder rather than a vestibular disorder caused by changes in the functioning of spatial orientation systems to allow visual or somatosensory/proprioceptive stimuli over vestibular inputs (6)

In 2015 a consensus document on the diagnostic criteria was formed by Bárány Society for the International

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Classification of Vestibular Disorders (ICVD). The details of the diagnostic criteria have been listed in the Table 1 (7–9).

PPPD is a relatively new diagnosis and to date it is still not clear what makes few person prone to suffer from it following known triggering events like acute, episodic, or chronic vestibular syndromes, other neurological or medical illnesses, or psychological distress.

Several publications have pointed out that acute anxiety and body vigilance predicted chronic dizziness after acute vestibulopathies (10–14).

This study was done as there was a paucity of Indian data on this less identified clinical condition. This study would help us understand the predisposing factors and the comorbidities of PPPD in a much better way

Table 1-Modified Barany Criteria for diagnosis OF PPPD

Criteria*	Description	Qualifiers
A	One or more symptoms of dizziness, unsteadiness, or non-spinning vertigo are present on most days for 3 months or more	<ol style="list-style-type: none"> 1. Symptoms last for prolonged (hours long) periods of time but may wax and wane in severity 2. Symptoms need not be present continuously throughout the entire day
B	Persistent symptoms occur without specific provocation, but are exacerbated by three factors:	<ol style="list-style-type: none"> 1. Upright posture, 2. Active or passive motion without regard to direction or position, or 3. Exposure to moving visual stimuli or complex visual patterns
C	The disorder is precipitated by conditions that cause vertigo, unsteadiness, dizziness, or problems with balance including acute, episodic, or chronic vestibular syndromes, other neurological or medical illnesses, or psychological distress	<ol style="list-style-type: none"> 1. When the precipitant is an acute or episodic condition, symptoms settle into the pattern of criterion A as the precipitant resolves, but they may occur intermittently at first, and then consolidate into a persistent course 2. When the precipitant is a chronic syndrome, symptoms may develop slowly at first and worsen gradually
D	Symptoms cause significant distress or functional impairment	
E	Symptoms are not better accounted for by another disease or disorder	

**All five criteria A–E must be fulfilled to make the diagnosis of PPPD.*

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RESULTS

Total of 60 patients satisfied the diagnostic criteria of PPPD during the study period .Out of 60 patients, 40 (66.67%) were male and 20(33.33%) were female. Most common Age groups were 40-49 years(31.66%),30-39 years(25%) and 60-69(18.33%).

A study of the risk factors showed Anxiety disorders(43.33%), Migraine(31.66%), Combination of Migraine and Anxiety disorder(23.33%), Pheripheral vertigo related conditions(23.33%), Insomnia (16.66%), Fibromyalgia(10%) and depression(10%).

In pheripheral vertigo related disorders- 8 had benign positional postural vertigo,2 had vestibular neuritis ,1 had meniers disease and 2 uncalssified disorder.24(40%)

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patients had degenerative cervical or Lumbar pain related to degenerative spine diseases.

Table 2

Age Group	Percentage of study population (%)
<20 yrs	1.6
20-29 yrs	3.3
30-39 yrs	25
40-49 yrs	31.6
50-59 yrs	15
60-69 yrs	18.3
>70 yrs	5

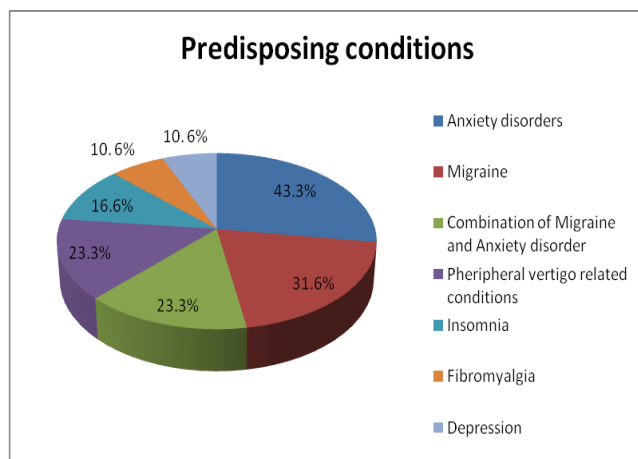


Figure 1

DISCUSSION

The central symptoms of PPPD are dizziness, unsteadiness, and certain types of non-spinning vertigo [15, 16]. The dizziness of PPPD is a non motion symptom [17] that people may elaborate as cloudiness, fuzziness, fullness, heaviness, or lightness in the head, or a feeling that their environmental orientation is not sharp or visual focus is not clear.

Unsteadiness is usually described as a sensation of imbalance or wobbling when upright, or a feeling of swaying from side to side when walking without a directional preponderance [17]. Non-spinning vertigo includes a feelings of swaying, rocking, bouncing, or bobbing that subjects may elaborate as motion inside their heads, involving their entire heads or bodies, or occurring in the environment.(17)

There are no epidemiological studies for this disease entity. Clinical epidemiologic data from tertiary care centers dealing with patients suffering from dizziness has shown a prevalence of 15–20% among all patients with vestibular dysfunction .This makes this condition the most common disorder among young adults and second most common among all adults, with Benign Positional Paroxysmal Vertigo being the leading cause. The diagnosis of this condition is mostly delayed and the average duration for a tertiary centre referral is 4.5 years and a small part of this

patients suffer for decades before the proper diagnosis and treatment is initiated [13, 19].

Disability related to the disorder varies widely in between the patients. A few patients have minimal effect in in daily functioning while some are severely affected and unable to do day to day activities . The average age of presentation of PPPD was in the mid-40 s, with a range from adolescence age to late adulthood [19,20,21]. Few clinical reports have shown a female preponderance. [20, 21].

In our study we had majority of patients as males (66.6%) unlike to reports mentioned in the literature. The most common age group suffering with PPPD was 30-50 years.(56.6%).90% of the study population was in the age group from 30-70 years showing that it was less common in the young and the old.

Most common predisposing condition was anxiety disorder in 43 % and migraine in 31.6% .Vestibular disorders predisposing to PPPD was seen in 23% of the patients. Compared to the literature the proportion of patients suffering with depression(10%) and vestibular disorders was less in our study. Insomnia was commonly seen (16%). Fibromyagia was seen to be associated in 10 % of the study population. This is an interesting finding showing that fibromyalgia has connections with PPPD apart from the known associations with psychiatric disorders and migraine. 40 % of the patients had non inflammatory spinal pain due to spondylosis or disc related pathologies. The mechanism of this association is not very clear.

Overall this disorder is not identified properly due to lack of awareness which gives rise to unnecessary delay in treatment and suffering as well as avoidable expensive investigations. This disorder needs a different approach to its management with an tide presents, physiotherapy and cognitive behavioural therapy (CBT) playing a major role.

CONCLUSION

It is a common disorder seen in the age group 30-50 years. Most common predisposing causes are Anxiety disorder, Migraine, combination of both and peripheral vertigo related disorders. Many of the patients have associated pain disorders like fibromyalgia and spine diseases.

BIBLIOGRAPHY

- I. Strupp M, Glaser M, Karch C, Rettinger N, Dieterich M, Brandt T. The most common form of dizziness in middle age: phobic postural vertigo. *Der Nervenarzt* 2003;74: 911–914.
- II. Dieterich M, Staab J, Brandt T. Functional (Psychogenic) Dizziness. In: *Handbook of Clinical Neurology*. Philadelphia: Elsevier; 2016:447–468.
- III. Staab JP, Eckhardt-Henn A, Horii A, et al. Diagnostic criteria for persistent postural perceptual dizziness (PPPD): consensus document of the Committee for the Clas sification

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- of Vestibular Disorders of the Bárány Society. *J Vestib Res* 2017;27: 191–208.
- IV. Dieterich M, Staab JP. Functional dizziness: from phobic postural vertigo and chronic subjective dizziness to persistent postural-perceptual dizziness. *Curr Opin Neurol* 2017;30:107–113.
- V. Staab JP, Eckhardt-Henn A, Horii A, Jacob R, Strupp M, Brandt T, et al. Diagnostic criteria for persistent postural-perceptual dizziness (PPPD): consensus document of the committee for the classification of vestibular disorders of the Barany Society. *J Vest Res.* (2017) 6:191– 208. doi: 10.3233/VES-170622
- VI. Staab JP. Persistent postural-perceptual dizziness. *Semin Neurol.* (2020) 40:130–7. doi: 10.1055/s-0039-3402736
- VII. Staab JP, Eckhardt-Henn A, Horii A, Jacob R, Strupp M, Brandt T, et al. Diagnostic criteria for persistent postural-perceptual dizziness (PPPD): consensus document of the committee for the Classification of Vestibular Disorders of the Bárány Society. *J Vestib Res.* (2017) 27:191– 208. doi: 10.3233/VES-170622
- VIII. World Health Organization. International Classification of Diseases, 11th Edition Beta Version Draft (ICD-11 Beta), Definition of Persistent Postural Perceptual Dizziness. Available online at: <https://icd.who.int/dev11/l-m/en#/http%3a%2f%2fid.who.int%2fid%2fentity%2f2005792829>
- IX. Trindade A, Goebel JA. Persistent postural-perceptual dizziness (PPPD) – a systematic review of the literature for the balance specialist. *Otol Neurotol.* (2018) 39:1291–303. doi: 10.1097/MAO.0000000000002010
- X. Godemann F, Siefert K, Hantschke-Brüggemann M, Neu P, Seidl R, Ströhle A. What accounts for vertigo one year after neuritis vestibularis - anxiety or a dysfunctional vestibular organ? *J Psychiatr Res.* (2005) 39:529–34. doi: 10.1016/j.jpsychires.2004.0065
- XI. Heinrichs N, Edler C, Eskens S, Mielczarek MM, Moschner C. Predicting continued dizziness after an acute peripheral vestibular disorder. *Psychosom Med.* (2007) 69:700–7. doi: 12.1097/PSY.0b013e318151a4dd
- XII. Cousins S, Kaski D, Cutfield N, Arshad Q, Ahmad H, Gresty MA, et al. Predictors of clinical recovery from vestibular neuritis: a prospective study. *Ann Clin Transl Neurol.* (2017) 4:340–6. doi: 10.1002/acn3.386
- XIII. Best C, Tschan R, Eckhardt-Henn A, Dieterich M. Who is at risk for ongoing dizziness and psychological strain after a vestibular disorder? *Neuroscience.* (2009) 164:1579–87. doi: 10.1016/j.neuroscience.2009.09.034
- XIV. Staab JP. Persistent postural-perceptual dizziness. *Semin Neurol.* (2020) 40:130–7. doi: 10.1055/s-0039-3402736
- XV. A. Bisdorff, M. von Brevern, T. Lempert and D.E. Newman-Toker, Classification of vestibular symptoms: Towards an international classification of vestibular disorders, *J Vestib Res* 19 (2009), 1–13.
- XVI. T. Brandt and M. Dieterich, Phobischer Attacken Schwankschwindel, ein neues Syndrom? *Munch Med Wschr* 28 (1986), 247–250
- XVII. J.P. Staab, Chronic subjective dizziness, Continuum: Life long Learning in Neurology (Minneapolis) 18 (2012), 1118–1141
- XVIII. T. Brandt and M. Dieterich, Phobischer Attacken Schwankschwindel, ein neues Syndrom? *Munch Med Wschr* 28 (1986), 247–250
- XIX. [19] J.P. Staab and M.J. Ruckenstein, Expanding the differential diagnosis of dizziness, *Arch Otolaryngol Head Neck Surg* 133 (2007), 170–176.
- XX. R.S.M. Bittar and E.M.D. von Sothen Lins, Clinical characteristics of patients with persistent postural perceptual dizziness, *Braz J Otorhinolaryngology* 81 (2015), 276–282
- XXI. Yan, L. Cui, T. Yu, H. Liang, Y. Wang and C. Chen C, Analysis of the characteristics of persistent postural perceptual dizziness: A clinical-based study in China, *Int J Audiol* 56 (2016), 1–5.