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Persistent Postural Perceptual Dizziness In The Neurology Clinic

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Abstract

Aim

To determine the proportion of referrals to a General Neurology New Patient Clinic which meet the diagnostic criteria of Persistent Postural Perceptual Dizziness (PPPD) and to gauge patient-perceived response to treatment.

Methods

Referral letters, n=1315, to a General Neurology New Patient Clinic from 2021-2023 were screened for terms 'dizziness', 'vertigo', 'unsteadiness' and 'vestibular'. A chart review was performed to establish study outcomes.

Results

202 (15.4%) patients were referred with 'dizziness', 'vertigo' or 'unsteadiness', 22 (11%) of which fulfilled the diagnostic criteria. Venlafaxine was offered in 10 (45.5%) patients and conferred ≥50% benefit in 8 (80%). Vestibular physiotherapy improved symptoms by ≥25% in all 7 (100%) patients with access to the intervention. Cognitive behavioural therapy and effective communication of the diagnosis alleviated symptoms by 50% in 3 (14%) patients respectively.

Discussion

PPPD is increasingly recognised in patients with chronic vestibular symptoms and can cause significant functional morbidity. Venlafaxine may independently improve symptoms[1].

Introduction

The Bárány Society recently introduced specific diagnostic criteria to define Persistent Postural Perceptual Dizziness (PPPD)[1], a condition previously described as phobic postural vertigo and chronic subjective dizziness. All criteria must be fulfilled to diagnose PPPD. Symptoms may include dizziness, unsteadiness or non-spinning vertigo that persist for minimum of three months[1]. The condition may initially be triggered by an acute or chronic

peripheral vestibular, neurological, traumatic or psychological event[1]. Although symptoms are persistent, the intensity may fluctuate as a result of common exacerbating factors such as maintaining an upright posture, being subjected to active or passive motion (irrespective of direction) and exposure to complex or kinetic visual stimuli[1]. PPPD is a clinical diagnosis; vestibular diagnostic tests and neuroimaging are typically negative. Although the exact pathophysiological mechanisms of this syndrome has yet to be confirmed, PPPD is not a diagnosis of exclusion[2] as the diagnosis is hugely reliant on an accurate and comprehensive clinical history. This condition should be considered in patients with chronic vestibular symptoms and can cause significant psychological and functional morbidity. As PPPD is a recently introduced diagnosis and may be significantly under-diagnosed, the main aim of our chart review was to determine the proportion of referrals to a General Neurology Clinic which met all the diagnostic criteria of PPPD. Once recognised, PPPD can be managed with specialised physical therapy (vestibular physiotherapy), serotonergic medications and cognitive-behavioural therapy (CBT) [1]. Therefore, we also assessed patient-perceived response to treatment.

Methods

In this retrospective review, 1315 referral letters to a General Neurology Clinic from January 2021- January 2023 were filtered for terms 'dizziness', 'vertigo', 'unsteadiness' and 'vestibular'. A total of 202 (15.4%) patients were identified following the initial screen. A chart review was performed to establish the group that met the diagnostic criteria for PPPD. Outpatient follow-up correspondences at six months were then reviewed to establish patient-perceived response to treatment options offered. Data were recorded and anonymised. The information gathered included patient demographics, prior access to vestibular physiotherapy, symptom duration, initial diagnosis prior to referral to neurology and self-reported treatment outcomes.

Results

A total of 22 (11% of 202) patients presenting with dizziness, vertigo or unsteadiness fulfilled the diagnostic criteria of PPPD. The median age was 47.8 (range 23 – 67) . There were 10 (45.5%) males. Only one patient (4%) had been seen by a vestibular physiotherapist prior to referral to neurology. Median duration of symptoms was 33.5 months (range 12 – 72 months). Prior to attending neurology, 6 (27%) patients were given an initial diagnosis of benign paroxysmal positional vertigo (BPPV) by their referring doctor while the remaining 16 (73%) were referred to exclude various central nervous system aetiologies such as basilar

migraine n=7 (31%), stroke n=3 (14%), cerebral intra-parenchymal injury secondary to trauma n=3 (14%) and central nervous system inflammation n=3 (14%).

Following review and diagnosis of PPPD, venlafaxine pharmacotherapy was offered to n=10 (45.5%) and conferred ≥50% subjective improvement of symptoms to n=8 (80%) patients. All patients were referred to vestibular physiotherapy, and physiotherapy improved symptoms in all 7(100%) of patients who had received intervention. Cognitive behavioural therapy (CBT) and effective communication of the diagnosis of PPPD alone alleviated symptoms by 50% in 3 (14%) patients respectively.

Treatment	Number (%)
Venlafaxine	n= 10 (45.5%)
≥50% Improvement	8 (80%)
25% Improvement	1 (10%)
No response	1 (10%)
Vestibular Physiotherapy	n= 7 (31%)
≥25% Improvement	7 (100%)
Cognitive Behavioural Therapy	n= 3 (14%)
≥50% Improvement	3 (100%)
Effective Communication	22 (100%)
≥50% Improvement	3 (14%)

Table 1 (Appendix) : Patient-perceived response to treatment

No.	Bárány Society diagnostic criteria for persistent postural-perceptual dizziness
1	One or more symptoms of dizziness, unsteadiness or non-spinning vertigo on most days for at least 3 months. -Symptoms last for prolonged (hours-long) periods of time, but may wax and wane in severity. -Symptoms need not be present continuously throughout the entire day.

2	Persistent symptoms occur without specific provocation, but are exacerbated by three factors: upright posture, active or passive motion without regard to direction or position, and exposure to moving visual stimuli or complex visual patterns.
3	The disorder is triggered by events that cause vertigo, unsteadiness, dizziness, or problems with balance, including acute, episodic or chronic vestibular syndromes, other neurological or medical illnesses, and psychological distress. -When triggered by an acute or episodic precipitant, symptoms settle into the pattern of criterion '1' as the precipitant resolves, but may occur intermittently at first, and then consolidate into a persistent course. - When triggered by a chronic precipitant, symptoms may develop slowly at first and worsen gradually.
4	Symptoms cause significant distress or functional impairment.
5	Symptoms are not better accounted for by another disease or disorder.

Table 2 (Appendix) Bárány Society diagnostic criteria for PPPD. All must be fulfilled to diagnose PPPD.[1]

Discussion

The incidence of PPPD is 1.67% (22 new cases from 1315 referrals) during a two-year period. In tertiary dizziness centres, whereby chronic subjective dizziness or phobic postural vertigo, two older terminologies of PPPD, accounted for 15%–20% of all patient presentations[3]. Vestibular physiotherapy, although effective, may be of limited accessibility as there was only one person who had access prior to referral. The median duration of symptoms of 33.5 months (range 12 – 72 months) from our cohort support the chronic nature of this disorder which may substantially affect quality of life. All 22 patients which fulfilled the diagnostic criteria of PPPD were initially given alternative diagnoses by their referring physicians, for example BPPV n=6 (27%) and central nervous system dysfunction n=16 (73%). This may not necessarily only indicate that PPPD is under-recognized but may reinforce the notion that it can co-exist with other peripheral vestibular or neurological conditions[2]. Venlafaxine pharmacotherapy, prescribed as an initial dose of 37.5mg daily, with subsequent dose increases, was found to be effective. Limitations include not specifically outlining co-morbidities of each of the confirmed cases of PPPD. We did not record the degree of functional limitation – anecdotally a significant number had limited their work/study due to their symptoms. A retrospective chart review may not be the most reliable way to apply all

the diagnostic criteria of PPPD and hence accurately estimate the incidence of this condition as some patients with PPPD may have been referred with other terms beyond 'dizziness', 'vertigo', 'unsteadiness' and 'vestibular'.

In conclusion, PPPD should be considered in patients with chronic vestibular symptoms as early recognition and treatment can improve quality of life.

Declarations of Conflicts of Interest:

None declared.

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