

Symptoms of vertigo in general practice: a prospective study of diagnosis

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SUMMARY

Background: There is little published evidence of the general practice experience of the diagnostic outcomes when symptoms of vertigo present. What research there is has been dominated by specialist centres. This gives a skewed view of the prevalence of the causes of such symptoms.

Aim: To describe the likely diagnosis of symptoms of vertigo.

Design of study: Prospective cohort study.

Method: Thirteen GPs were recruited and trained to clinically assess and follow up all patients presenting with symptoms of vertigo over a six-month period. Age-sex data were simultaneously gathered on those who consulted with non-vertiginous dizziness.

Results: The main diagnoses assigned by the GPs in 70 patients were benign positional vertigo, acute vestibular neuronitis and Ménière's disease, which together accounted for 93% (95% confidence interval = 71% to 100%) of patients' symptoms. Ninety-one per cent of patients were managed in general practice and 60% received a prescription for a vestibular sedative.

Conclusion: This study suggests that presentations of symptoms of vertigo can be clinically diagnosed in most cases. The diagnoses recorded by GPs differ in proportion to those in specialist centres, with a larger number of patients suffering from benign positional vertigo and acute vestibular neuronitis in general practice, in contrast with specialist centres, which see more patients with Ménière's disease.

Keywords: vertigo; dizziness; diagnosis.

Introduction

VERTIGO is defined as an illusion or hallucination of movement, usually rotational, either of oneself or the environment.^{1,2} Symptoms of vertigo account for 10.7 visits per 1000 person years in general practice morbidity statistics,³ with less than 15% of those suffering from vertigo being referred.⁴ Vertigo is often treated as a subgroup of dizziness in research^{1,4-12} and termed as such by the patient. There is little published of the general practitioner's (GP's) experience of this symptom, or of conclusions as to what are the diagnoses when the presenting complaint is vertigo, even in research from specialist centres. Some information on the diagnoses occur in papers that include the study of vertigo, but whose aims were examining dizziness outcomes or symptomatology.^{8,13-16} These suggest the most common conditions to be acute vestibular neuronitis (ranging from 10% to 44% of diagnoses), Ménière's disease (ranging from 17% to 43%), and benign positional vertigo (ranging from 10% to 27%). Research of this symptom is also hindered by a lack of clarity of nomenclature; for example, the diagnosis of acute vestibular neuronitis is also termed 'acute/viral labyrinthitis', 'epidemic vertigo' and 'vestibular neuritis'.^{9,17} The aim of this study is to quantify the likely diagnoses when a patient presents with vertigo.

Method

Uniform terminology and definitions for the various causes were first prepared from a literature search. The only validated questionnaire for measuring vertigo was not appropriate for this study, as it focused on severity of symptoms and psychological associations.¹⁸ A clinical assessment sheet based on the GP examination was devised, whereby items from the history and examination were chosen on the basis of helpfulness towards a clinical diagnosis guided by a number of previous studies.^{5,7,13,17,19,20} The assessment sheets were piloted among five GPs for a two-week period, and required little change. The data collected in the pilot study were added to the final data.

Sixteen GPs in Donegal were asked to collect data for six months, from October 1999 until March 2000 and all initially agreed to participate. They were requested to attend a two-hour training session to standardise their clinical evaluation of symptoms of vertigo. The session included the evidence base of assessment and management. The GPs were taught the Hallpike manoeuvre,^{21,22} Rinne's test and Weber's test, and the assessment sheets were explained.

As vertigo usually presents as dizziness, doctors were asked to record all patients actively complaining of dizziness whom they personally attended during the period of study. Where symptoms of vertigo were absent, dizziness was classified according to whether unsteadiness, pre-syncope,

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HOW THIS FITS IN*What do we know?*

Information exists on the causes a doctor should consider when symptoms of vertigo present in general practice but their relative frequency is not published.

What does this paper add?

This prospective general practice study ranks the commonest clinical diagnoses in consultations where vertigo is the complaint.



or light-headedness was predominant and these patients had simple age, sex, and type of dizziness data recorded. These patients were not followed up; these data were used to seek a demographic difference between patients with true vertigo and those with other dizziness.

True vertigo was identified by the validated question 'When you have dizzy spells, do you just feel light-headed or do you see the world spin around you as if you had just got off a playground roundabout?'²³ and included all patients with any symptoms of vertigo. Excluded were visitors/temporary patients who would not be in the vicinity for a month after the initial presentation and those who withheld consent. After obtaining consent, the consultation was then documented according to the clinical assessment sheet, including the recording of a diagnosis if one was made. Follow-up consisted of direct telephone contact with each participating doctor to see if there was any change in diagnosis as known to the GP, a month after each patient's first consultation. Contact also occurred on a fortnightly basis over the study period, to clarify any queries.

Data were entered onto separate Microsoft Excel spreadsheets for non-vertiginous dizziness and vertigo, and converted to JMP statistical software for analysis. In calculating the confidence intervals on the rates of the conditions, they are assumed to have a Poisson distribution and are taken from a Poisson count table.²⁴ Contingency tables were used for comparing the categorical variables of the presentations, tested with Pearson χ^2 tests of significance. Ethical approval was granted by the Irish College of General Practitioners research ethics committee.

Results

Of the GPs approached, one declined to participate prior to the training session, and two more dropped out afterwards. Another GP collected data for three months only and his data are included. Of the final five male and eight female participants, only one doctor had less than ten years' experience in general practice. Nine of the 13 were in group practice and six were in rural general practice.

Over the six-month study period, data on 100 non-vertiginous dizzy patients and on 72 with true vertigo, were returned; all patients seen consented to inclusion. One return was incomplete and another had been filled for a visitor, leaving data suitable for analysis on 170 patients. The average age of attenders with dizziness was 52 years (95% confidence interval [CI] = 53.5 to 60.5) and 60.5% of these

were female. Patients with symptoms of vertigo did not significantly differ in age (*t*-test, $P = 0.96$) or sex (χ^2 , $P = 0.83$) when compared with those suffering from other forms of dizziness. The types of dizziness found are shown in Table 1.

In the 70 presentations of vertigo, GPs were able to assign a clinical diagnosis to all but one patient at first presentation. One hundred per cent follow-up of patients with symptoms of vertigo was achieved after a month. The initial diagnosis was confirmed in 63 of the 70 patients after a month. One patient had died of unrelated causes, and in six cases the GP felt that a different diagnosis was more appropriate. Table 2 indicates the confirmed diagnoses. The majority were diagnosed as having benign positional vertigo (30 patients) or acute vestibular neuronitis (28 patients). The next most common diagnosis was Ménière's disease, which was found in seven patients. Less frequent diagnoses included vascular incidents, such as stroke (one patient) and transient ischaemic attack (one patient), and one patient's symptoms were owing to multiple sclerosis.

Sixty per cent of patients had previously suffered symptoms of vertigo. This was reported in all patients with a diagnosis of Ménière's disease, in 16 of those with benign positional vertigo, in 15 patients with acute vestibular neuronitis, and in all patients with another diagnosis.

Most patients (91%) were managed in general practice. Of the six patients referred to specialist services, three had the diagnosis as suspected by the GP confirmed and three had their diagnosis changed. The latter were cases of Ménière's disease refuted by the ear, nose and throat department, but without specific tests; in at least one instance the GP persisted in believing the diagnosis to be Ménière's disease.

Forty per cent of patients did not receive a prescription for their presentation; vestibular sedatives were used in the remainder, in particular for those with a diagnosis of acute vestibular neuronitis or Ménière's disease.

Table 1. Breakdown by symptom category of 170 patients who presented with dizziness.

Type of dizziness	Number of patients	Percentage (95% CI)
Light-headedness	52	30.5 (23–40)
Pre-syncope	11	6.5 (3–12)
Disequilibrium	25	14.7 (9–22)
Vertigo (any) ^a	70	41.2 (32–51)
Unable to specify	12	7.1 (4–12)

^aIf patients reported any vertigo they were included in the vertigo group, otherwise they were assigned according to predominant symptom.

Table 2. Clinical diagnoses assigned to 70 patients one month after presenting with vertigo.

Clinical diagnosis	Number of patients	Percentage (95% CI)
Benign positional vertigo	30	42.2 (28.6–61.4)
Acute vestibular neuronitis	28	40.8 (27.1–57.1)
Ménière's disease	7	10 (4.2–20)
Vascular origin	2	3 (0–10)
Neurological origin	1	1.5 (0–8.6)
Psychological origin	1	1.5 (0–8.6)
Unable to specify	1	1.5 (0–8.6)

Discussion

Summary of main findings

This study shows that diagnoses can be described for a symptom that has previously been described as vague.^{10,25} It is possible to subclassify dizziness, and to assign a clinical diagnosis to most cases of vertigo within the GP surgery. Nearly all of the cases of vertigo and most of those of general dizziness could be further defined, even though the doctors were permitted to use an 'unable to specify' category. This study supports the contention that, when symptoms of vertigo present in general practice, the most common cause is benign positional vertigo, with the next most common cause being acute vestibular neuronitis. Ménière's disease occurred in this study in 10% of cases. Symptoms or signs of involvement of the nervous system should always be sought when vertigo presents, keeping in mind the small but important number of cases of vascular or neurological causes. Also rare causes can occur.²⁶ None of the GPs had used the Hallpike test clinically prior to this study. That it was used on 61% of those who attended with vertigo indicates that the GPs found it easy to introduce into daily practice. In this study the positive predictive value of a positive Hallpike test was 83.3%; the negative predictive value was 52% for the diagnosis of BPV.

Strengths and limitations of this study

A limitation of any study on vertigo is the lack of a gold standard against which to confirm the GP's impression, as there are no confirming investigations for the two most common diagnoses. Yet GPs have been shown to be as good as specialists at predicting the diagnosis from a study of clinical examination of obstructive airways disease,²⁷ and they are experienced in dealing with vertigo. A diagnostic bias might have occurred towards the conditions discussed in the training received by the GPs, but the content of this training was based on a previous systematic review.²⁶ Some may consider a one-month follow-up period to be short, but the natural history of the principal diagnoses is that they settle quickly.^{22,28,29} The aim of the regular direct contact by the researcher (KH) with the GPs was to avoid missing cases. The participating doctors affirmed that all cases with symptoms of vertigo were returned but some admitted that non-vertiginous dizziness might have been underreported. As the study period was in the winter months, when the prevalence of acute vestibular neuronitis can peak, the number of cases of this presentation may be overrepresented. Strengths of this work include the emphasis on uniform use of diagnostic terms and that the study is prospective.

Relationship to existing literature

The diagnoses in this study differ in their proportions from those in studies from a hospital setting, especially in the frequency of Ménière's disease, which accounts for an average of a third of cases in specialist clinics.^{13,15,30} Only one previous study has been published that focuses on the symptom of vertigo in a general practice population.³¹

Implications for future research

Further study of the natural history of vertigo in general prac-

tice, with a longer follow-up period, is needed. Several authors suggest that there is scope for better management of dizziness in the community.^{4,32} A number of treatments, such as manoeuvres or exercises,³³⁻³⁵ or surgery for intractable cases,³⁶ have recently emerged for benign positional vertigo. The diagnosis of this condition would be made easier by clarification of the Hallpike test. Concern has been expressed about the long-term use of vestibular sedatives in vertigo^{18,37,38} and research is required into alternative treatments and methods of rehabilitation.

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