



Management and referral strategies of patients with motion sickness in primary care

Manejo y estrategias de remisión de pacientes con mareo en atención primaria

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Abstract

Introduction: Dizziness is a common problem in primary care; the symptoms pose a diagnostic challenge, as there are many potential causes.

Objective: To determine the management of patients with symptoms of dizziness in primary care.

Methods: A retrospective cross-sectional study was conducted on managing 503 patients who visited their general practitioner complaining of dizziness.

Results: The number of visits ranged from one to more than 15, with 53% (n=269) attending once, 22% (n=113) twice, and 24% (n=121) visiting on three or more occasions.

Conclusions: More than one in six patients who visited their primary care physician for dizziness did not meet the patient management criteria.

Keywords: dizziness, vertigo, primary care, management, general medicine source: DeCS

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Resumen

Introducción: El mareo es un problema frecuente en atención primaria, Los síntomas plantean un desafío diagnóstico, ya que existen muchas causas potenciales.

Objetivo: Determinar el manejo de los pacientes con síntomas de mareo en atención primaria.

Método: Se realizó un estudio transversal retrospectivo del manejo de 503

pacientes que visitaron a su médico general quejándose de mareos

Resultados: El número de visitas varió de uno a más de 15, con un 53% (n =269) asistiendo una vez, 22% (n = 113) dos veces, y 24% (n =121) visitando en tres o más ocasiones.

Conclusiones: Más de uno de cada seis pacientes que visitaron a su médico de cabecera por mareos no cumplieron con los criterios de manejo del paciente.



Palabras clave: mareo, vértigo, atención primaria, manejo, medicina general
fuente: DeCS

Introduction

Dizziness or vertigo is a frequent problem in primary care, representing 2% of consultations. Its prevalence increases with age and can reach 30% in those over 65⁽¹⁾. In many cases, symptoms resolve spontaneously, with low mortality and morbidity. However, dizziness is also associated with absence from work and high anxiety levels, so the social and medical costs of persistent symptoms should be considered⁽²⁾.

Symptoms of dizziness pose a diagnostic challenge, as many potential causes exist. In addition, unraveling a history is often tricky, as descriptions are often subjective and nonspecific. It has been suggested that observation and medication are the main management strategies and that most episodes can be adequately managed within primary care⁽³⁾. In addition to carrying out these strategies, the general practitioner's role is to identify at the earliest stage those requiring referral to a specialist to optimize the use of resources in general practice and at the hospital level. This is particularly relevant given recent advances in treating chronic balance disorders⁽⁴⁾.

Currently, guidance for general practitioners is limited. Many user reviews are available, but these are often aimed at aiding diagnosis rather than providing guidance on when and where to refer patients⁽⁵⁾.

This research aimed to examine current practices in managing motion sickness compared to local criteria and to analyze what factors influence GP management decisions. This will indicate areas where research should be directed and where GP training needs to be improved.

Method

A retrospective cross-sectional study of the management of 503 patients who visited their general practitioner (GP) complaining of dizziness between August 2020 and July 2021 in 3 primary care practices in the city of Ambato was conducted.

The first stage of this research was to develop criteria against which current practice could

be reviewed. Currently, such guidelines do not exist, so MEDLINE was systematically searched to highlight reviews.

The criteria indicated that any suspected severe cardiac or neurological disorder should be referred immediately. Alternatively, a routine referral was indicated if there were three or more acute attacks or disabling symptoms that lasted more than six weeks and resisted treatment. Once the decision to refer was made, the decision of where to refer and which specialty was addressed separately. This was driven by information about associated symptoms, past medical history, and the nature of the symptoms. For example, symptoms described as rotary in nature or with associated tinnitus should be referred to Otolaryngology. The clinical findings were not used in the standard as they are not universally used in general practice, and clinical test results are often variable and often normal.

Computer searches were conducted in three of these practices that were willing to participate in identifying patients who had seen their GP complaining of symptoms related to dizziness from August 2020 to July 2021. Among these, a stratified sample with coverage of 85%, 45%, and 30% across the three practices was studied more thoroughly. In addition, subjects were excluded if they had seen their primary care physician for the same problem in the past 12 months so that episodes could be studied from baseline. In each case, written notes were consulted in addition to computer records.

Symptom and management information was retrieved from GP records and analyzed where appropriate using Statistical Package for the Social Sciences (SPSS). A multiple logistic regression model was obtained using a backward selection procedure to assess how strongly each predictor was associated with the decision to refer. The statistical significance of each predictor was obtained using the likelihood ratio test, comparing the goodness-of-fit of the selected model with that omitting the predictor. Odds ratios were calculated from the model to describe the odds of being derived relative to a reference category. Ninety-five percent confidence intervals were obtained for the estimated



odds ratios to indicate their sampling-related uncertainty. Bilateral tests and the 5% statistical significance level were used.

Results

In total, 503 patients in the age range of 3 to 99 years were studied, with a median of 58 years. The number of visits ranged from one to more than 15, with 53% (n =269) attending once, 22% (n = 113) twice, and 24% (n =121) visiting on three or more occasions.

Symptoms of dizziness were most often diagnosed by the primary care physician as cardiac, ENT or neurological in origin, and these categories were sufficiently represented to be used in the subsequent analysis.

Patients received treatment in 62% of cases (n =312), almost exclusively by prescription of a medication (n =308, 99%). The rest were treated with physiotherapy or counseling. Referral to a specialist was made in 78 (16%) of the presenting patients. The most common

referral route was to an otolaryngologist (n =28, 36%). Referrals were also made to neurology (n =14, 18%), geriatrics (n =12, 15%), cardiology (n = 11, 14%), general medicine (n =5.6%), and ad hoc referrals to rheumatology, psychiatry, and obstetrics and gynecology.

Logistic regression was used to identify factors associated with the primary care physician's decision to refer a patient to a specialist (Table 1). Referral rates were not associated with the patient's age, sex, or primary care physician. However, the odds of being referred were significantly positively associated with the number of visits; duration of history; the presence of associated cardiac (e.g., chest pain), otolaryngologic (e.g., tinnitus), or neurologic (e.g., facial numbness) symptoms; and the presence of symptoms whose nature was specifically described (e.g., vertigo).

Table 1. Factors associated with the decision to refer: results of logistic regression analysis.

Variable	Value of p	Odds Ratio	95% confidence interval
Number of visits	<0.001		
1		1	
		3.3	1.5-7.4
		11.9	5.6-25.2
Duration of the history	0.004		
Less than two weeks		1	
2-52 weeks		1.6	0,5-4,7
More than 52 weeks		5.7	2.1-15.9
No informed		0.8	0,3-1,8
Description of symptoms	0.004		
Vertigo		1	
Dizziness		1.2	0,4-3,2
Fainting (episode syncopal)		3.3	1.3-8.5
Instability		1.6	0,5-5,3
unspecified		0.5	0,2-1,0
Associated symptoms	<0.001		
Cardiac		4.7	1.2-18.4
Otorhinolaryngology		3.1	1.2-7.6
Neurological		4.0	1.8-8.8
Another		0.3	0,05-2,0

Source: statistical analysis, p ≤ 0.05, the odds of referral for those patients on at least their third visit were estimated to be 11.9 times greater than the odds for those on their first visit. The 95%



confidence interval does not include 1, indicating that this sample-based result is unlikely to have arisen by chance. In 21% of patients, the length of history was not reported.

Referrals were audited according to the appropriateness of the decision to refer, the appropriateness of the timing of the referral, and the appropriateness of the location to which the referral was sent. Overall, 17% of the cases did not meet the criteria.

The criteria specified that suspected serious cardiac or neurologic disorders should be referred immediately; otherwise, referral should be for recurrent or persistent symptoms that do not improve with treatment. GPs rarely failed to refer urgent cases (n=2) but failed criteria by not referring patients with persistent conditions (n=44). Subreferral was significantly more common for those at least 60 years of age ($\chi^2 = 4.04$; $df = 1$; $P < 0.05$).

Discussion

The subject and symptom characteristics recorded here are in general agreement with previous studies in the primary care setting⁽⁶⁾. On average, 2.2% of patients in the three practices studied visited their primary care physician for dizziness in one year, representing 0.7% of all consultations. Furthermore, 84% of patients were managed within primary care, reflecting the high rate of spontaneous resolution of such symptoms partly. These findings are in good agreement with other studies⁽⁷⁾. By extrapolating the data presented here, one would expect 359 referrals to specialists per year per 100 000 patients.

The factors influencing a primary care physician's referral decision are not surprising but worth noting. First, the decision to refer is significantly influenced by the length of time and number of visits made by the patient. As expected, the presence of symptoms over a long period increased the likelihood of referral. The number of visits reflects, in part, the severity or chronicity of a condition but also indicates the degree to which a patient will complain, which will vary considerably. Significant under-reporting of symptoms of dizziness has been described^(8,9), suggesting that several patients are reluctant to bother their physician and may still experience symptoms. Therefore, GPs consider the

degree of disability associated with presenting symptoms, regardless of the number of visits made. In addition, referrals were higher when the symptoms' specific nature was recorded and associated cardiac, ENT or neurologic symptoms were present.

This suggests that GPs are less likely to refer when symptoms are ambiguous or unknown and reflects the complexity of dizziness problems. While good coverage and sample size were obtained, the drawback of a retrospective study such as this is that the data collected may be incomplete. In part, this may be because only positive outcomes are usually recorded. Alternatively, elements of the background history may not have been discussed at the consultation. It is widely recognized that history is critical to making a diagnosis in a dizzy patient; therefore, additional training may be indicated⁽¹⁰⁾.

The most important element of managing balance disorders is the referral of those who require urgent further investigation for a suspected cardiac or neurological problem. The results show that general practitioners adequately refer these patients. Furthermore, referral to the most appropriate specialist was made in most cases. However, of all referrals, this was deemed unnecessary in more than a quarter of cases. While this is of concern, there were insufficient numbers to analyze the possible reasons for this. This problem could be more easily investigated in the future by an audit of each relevant specialty at the point of receipt of referral^(11,12).

The most notable area where the criteria failed was when GPs attempted to manage patients within primary care where referral or prior referral would have been more appropriate. In practice, therefore, there are many patients with significant balance problems, persisting perhaps unnecessarily. This results in a drain on primary care resources, given the number of visits involved. In addition, the social costs of inadequate treatment must be considered, as dizziness is known to be associated with absence from work and high anxiety levels^(13,14). Clearly, the question of how long watchful waiting should continue before a referral is open to debate.

The criteria used here aim to balance excluding conditions that will resolve spontaneously and avoiding unnecessary waiting for patients requiring specialized treatment. The main concern is the much higher proportion of cases in which no referral is made, although hospital services may be overwhelmed if all of these were indeed referred. Failure to refer was significantly more frequent in elderly patients^(15,16). Given that dizziness and imbalance are important risk factors for falls, sixteen management in the elderly is an important issue. Recent work has shown that cardiac problems predominantly cause symptoms of dizziness in the elderly and, therefore, referral to rule out serious pathology may be warranted. However, it has been suggested that referral to a hospital is rarely indicated in the elderly^(17,18). If so, this would indicate the need for community-based treatment programs. This could incorporate balance training, fall prevention measures and confidence-building exercises.

The involvement of physiotherapy and occupational therapy would be important. If referrals were to increase in line with the results, longer waiting times could be expected. This may be mitigated by an expected reduction in unnecessary referrals, although more work is needed to analyze the associated factors. If more optimal management strategies were implemented for the elderly, as suggested above, an increase in referrals would not be predicted. In general, improving management strategies leads to correct and faster diagnosis and treatment and consequent improvement in patient care^(19,20).

Conclusions

More than one in six patients who visited their primary care physician for dizziness did not meet the patient management criteria. In particular, a significant proportion of patients with dizziness were not referred when the criteria recommended it, which was more common in the elderly. This indicates the need for further training. GPs appropriately and immediately refer to urgent cases of dizziness in which a cardiac or neurological etiology is suspected. In addition, no trends

toward over- or under-referral to any specialty were observed

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