Acta Biomedica Scientia

e - ISSN - 2348 - 2168
Print ISSN - 2348 - 215X

www.mcmed.us/journal/abs

Research Article

MANAGEMENT OF DIZZINESS IN OLDER PATIENTS BY GENERAL PRACTITIONERS: INSIGHTS ON FALL RISK INCREASING DRUG USAGE

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ABSTRACT

Dizziness poses a significant challenge for general practitioners (GPs), particularly when managing older patients, where data on effective management strategies are lacking. Additionally, it remains unclear whether GPs actively address the use of Fall Risk Increasing Drugs (FRIDs) in the management of dizziness among older patients. This study aimed to investigate the management of dizziness by GPs in older patients and their approach to FRID usage.Over a 12-month period, electronic medical records of 5624 older patients aged 65 or above experiencing dizziness were analyzed. Patients were identified using codes from the International Classification of Primary Care. The study categorized GPs' usual care strategies into wait-and-see approaches, education and advice provision, additional testing, medication adjustment, and referral. Results revealed that additional testing was conducted in 27.8% of cases, with 21.0% of patients referred for further evaluation. Notably, at least 88.2% of patients were prescribed FRIDs. However, only 12.7% of patients had their FRID prescriptions adjusted by GPs during the observation period. The study highlights the diverse approaches employed by GPs in managing dizziness among older adults, with a notably high referral rate observed. Despite the prevalent use of FRIDs among these patients, there were limited evaluations and adjustments made by GPs. Addressing FRID usage through adjustments may hold potential in reducing dizziness and associated impairments among older patients.

Keywords:- Dizziness, Older adults, General practitioners, Fall Risk Increasing Drugs (FRIDs), Management

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Home page: **www.mcmed.us/journal/abs**		**Quick Response code**
Received: 04.07.2023	**Revised**:17.07.2023	**Accepted**:03.08.2023

INTRODUCTION

The complaint of dizziness can occur in conjunction with harmless or very serious conditions, so it can be a challenging condition for general practitioners (GPs). A dizziness can be characterized by giddy feelings, faint sensations, lightheadedness, instability, unsteadiness, a tendency to fall, or the sensation that everything is going black.

The causes of dizziness range from peripheral to central (neurological), and from general to medical. According to several authors, dizziness might be a multifaceted geriatric syndrome in older individuals. [2–6] Geriatric syndromes are defined as specific symptoms resulting from multiple underlying factors. For GPs, managing dizziness in older patients is crucial. Only a few studies have been conducted in primary care regarding dizziness management, and they did not include older patients. [8–12] Because it is assumed that medication contributes to dizziness in as much as 25% of older patients, patients with dizziness should undergo a medication review.

It is unknown whether GPs consider medication as a possible contributing factor to dizziness in older patients. Dizziness-causing drugs [14,15] have striking similarities to drugs that increase fall risk (FRIDs). [16]

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Falls are more likely to occur with dizziness[17] and FRIDs alter postural control.(18) In this sense, FRIDs could serve as a proxy for potentially dizziness-causing medications.As a result of their recommendation, Harun and Agrawal have recommended to reconsider using FRIDs when evaluating and treating dizzy patients[19]. This study aims to gain more insight into the management of dizziness in older adults, with a focus on the evaluation and adjustment of FRID.

MATERIALS AND METHODS

Patient identification

The target population was identified via an electronic search strategy: patients with dizziness who visited their GP. In the database, ICPC codes N17 "vertigo/dizziness" and H82 "vertiginous syndrome" were searched. A patient's anonymized record was used to extract the following information: patient characteristics, characteristics of the consultation for dizziness, characteristics of the prescribed drugs, and symptoms, physical examination, diagnostic evaluation, and treatment information.

Examining electronic medical records in full text

A medical student (T.H.) and a medical doctor (M.S.) reviewed patient consultations in full text. In order to improve the reliability of the data extraction, they discussed a random selection of 10% of the data. For several reasons, the review excluded patients with a consultation mentioning dizziness but not being dizzy; (2) GPs consulted by a third party; (3) coded the first three dizziness consultations to minimize influence from multiple consultations. ICPC codes were considered final diagnoses in cases of multiple consultations.Then recorded the both codes in the GP's last chronological consultation. There were four types of treatment: waiting and seeing, advice and education, additional testing, medication adjustment, and referral. In addition to multiple treatment modalities being administered during one consultation, multiple treatment modalities were administered during multiple consultations as well. Category medication adjustments were used only to reduce the dosage of FRIDs, discontinue FRIDs, or prescribe anti-vertigo and anti-emetics. Psychotropic drugs, cardiovascular drugs, and other drugs were included in the list of FRIDs[16].

STATISTICS

The study population was described and treatment modalities were categorised using descriptive analyses. The mid-time population was used to calculate prevalence rates based on practice list sizes. Chi-square tests and logistic regression analyses were used to compare age groups.

RESULTS AND DISCUSSION

The study included 5624 older dizzy patients who were all over the age of 51, and who were all suffering from dizziness. The study included 5624 older dizzy patients. It was estimated that the median age of the population was about 76 years of age. Most of the patients were female. The prevalence of dizziness was 12.8% over a 12-month period. As people grew older, dizziness prevalence increased significantly. In the dizziness episode, 2888 patients sought treatment more than three times. In 95.7% of cases, the follow-up could extend beyond a month after the initial consultation. Diagnosis of dizziness was most commonly associated with symptoms, cardiovascular conditions, and peripheral vestibular disorders.

Table 1: 5624 dizzy older patients based on their characteristics

Characteristics	**N (%)**
Female	3784
age years, mean (range)	78.0
65–74	2360
75–84	2172
≥85	1092
Diagnosis Symptom diagnoses	 1802
Cardiovascular condition	1026
Peripheral vestibular disease	588
Infections	270
Psychiatric condition	146
Musculoskeletal condition	84
Neurological conditionb	74
An endocrine or metabolic disorder	64
Medical agents with adverse effects	58
Other	1336
No diagnosis recorded	220

Table 2: Management of 2812 older dizzy patients

Management	**N(%)**
No treatment	
Total	1598
Advice and education	174
Exercises for vestibular training	10
Exercises to improve breathing	1418
Education or advice in other areas	1572
Total	
Tests added	
Analyses of blood	1244
Analyses of urine	178
An electrocardiogram	130
Monitoring of blood pressure 24 hours a day	82
Other	68
Total	1510
Medication prescription and medication adjustment	
Prescription of antiemetics	166
Prescription of antivertigo drugs	286
in dizziness caused by M´enie`re's disease	14
in other dizziness of vestibular origin	104
in other types of dizziness	168
Adjustment of FRIDs	660
dose reduction	262
discontinuation	438
Total	1052
Referral	
Neurologist	272
Cardiologist	220
Physical therapist	130
Internist	116
Otolaryngologist	74
Geriatrician	50
Ophthalmologist	38
Psychotherapist	32
Other	224
Total	1066

An overview of treatment modalities is provided in table 2. Most GPs used an educate-and-advise strategy rather than waiting and seeing what happened. 1510 patients underwent additional tests, most often blood analyses. In 1052 patients, medication was prescribed and adjusted. A total of 1066 patients sought medical attention from specialists. The majority of patients were referred to neurologists, cardiologists, or physiotherapists. Table 3 shows the frequency of FRID medication adjustments and the use of FRIDs. An average of 4.1 FRIDs were prescribed. At least 88.2% of patients received FRID prescriptions. 660 patients had their FRIDs adjusted. A GP reduced the dose of FRID by an average of 222 patients and discontinued it by an average of 398 patients. A GP reduced the FRID dose for 40 patients and discontinued a FRID for 40 patients. FRID dose reductions were significantly associated with age. The purpose of this study was to gain insight into how older adults manage dizziness. Wait-and-see (28.4%) and education and advice (28.0%) were the most common treatments. 26.8% of the sample underwent additional testing. GPs adjusted FRID prescriptions for 11.7% of patients. Age was associated with a significant reduction in FRID doses. Dizzy older patients were referred to specialized care by 19.0% of GPs. There was a 11.8% prevalence of dizziness. Circulatory conditions and peripheral vestibular disorders were the most common causes. In 32% of patients, the GP diagnosed a symptom. 3.9% of patients had no diagnosis recorded by their GP.

Table 3: FRID use, adjustments, and new prescriptions of 5624 older dizzy patients

Drug group	Use of FRIDs n (%)a	Dose reductions n (%)b	Discontinuation n (%) b	Newly prescribed n (%)b
Cardiovascular FRIDs Diuretics	2398	54	112	
b-Blockers	2288	70	48	
Calcium channel blockers	1308	38	66	
Angiotensin converting enzyme inhibitors	1428	34	38	
Angiotensin receptor blockers	1240	26	18	
Nitrates	686	6	8	
Antiarrhythmic agents	122	2	0	
Digoxin	194	0	0	
Psychotropic FRIDs Antivertigo drugs	478	0	14	286
Analgesics (opioids)	1048	26	46	
Anxiolytics and hypnotics	1630	10	16	
Antidepressants	778	8	16	
Neuroleptics	182	4	6	
a-blockers and anticholinergics	660	2	28	
Hypoglycaemics	1016	6	6	
Antihistamines	584	2	2	
b-Blocker eye drops	196	0	0	
Other FRIDs	942	6	54	
No FRID use	718	na	na	na
Total medication adjustments	na	262	438	(280)e

Weaknesses and strengths

In general practice, few studies have investigated the management of dizziness in older patients[8–10]. This is the first study to examine the adjustment for older dizzy patients of FRIDs. Dutch patients are all registered with a general practitioner. GPs provide care and act as gatekeepers to specialized care. Therefore, the data presented here are representative of general practice's older dizzy patients. Using electronic medical records (EMRs), we identified a large sample of older dizzy patients. It is important to note, however, that the quality of the data depends on how accurately GPs register patients. The data for this study comes from general practices, where GPs are trained annually in registering and coding medical information.

Relationship between findings and other studies

Only a few studies have examined how dizziness is managed by general practitioners.[8–11] Wait-and-see was frequently used with dizzy patients of any age.[9] Older dizzy patients tended to be observed, reassuranced, and advised to change their behavior according to Sloane et al. [9] Among younger and older adults, 60–90% of the patients were prescribed drugs[8–10], which is much more frequent than our sample. This study reported a high referral rate to specialized care (19.0%); international studies reported referral rates of 4–16% [8–10] In Dutch studies, referral rates ranged from 3.2 to 4.5%. A complex mix of patient, physician, and health care system factors influences GPs' referral decisions [20-24] Since Dutch health care has not changed, doctor perceptions of patient expectations and patient reassurance might have affected referral rates. Neither the effectiveness nor the cost-effectiveness of the referrals are known. FRIDs are used and adjusted in older dizzy patients for the first time. Our study sample used FRIDs quite frequently, on average 3.1 prescriptions per patient. According to studies of older patients with fall histories and frail elderly patients, prescriptions for FRIDs were similar. [16,25] 11.7% of patients had their

FRID discontinued or reduced by their GP. 19.0% to 28.4% of patients in our sample used another management strategy. FRID adjustment was the least common management strategy. GPs rarely considered drug use as a significant contributor to falls when relating FRIDs to falls in a qualitative study. [26] If a patient had fallen or presented with dizziness, GPs considered the drug prescribed. It was perceived as uncomfortable and challenging to be unable to predict drug treatment outcomes; the GPs suggested not changing prescriptions instead. [26] Four main barriers are described: ignorance, inertia, lack of skills, and feasibility concerns. [27] It is evident that adjusting medication seems to be quite a challenge. Since 87.2% of patients in this sample had FRIDs prescribed, there is room for improvement. FRIDs can be adjusted to reduce dizziness in older patients, and medication reviews and evaluations are simple and effective management strategies. When the cause of dizziness has not yet been determined, FRIDs can also be adjusted. There is a higher incidence of dizziness among older adults than previously reported. Based on a highly comparable sample, Maarsingh et al. found 8.3% prevalence of dizziness, while this study found 11.8%.[28] Similarly, Sloane et al. found that 7.0% of patients over the age of 85 experienced dizziness.[8] Prescriptions of drugs have increased, resulting in a higher rate of adverse drug reactions. There may have been an increase in dizziness among older patients due to adverse drug reactions, which cause dizziness.[13] However, in general practice-based registration networks, from which the study is derived, GPs are trained to code and register medical records annually. In this study, GPs registered at a higher rate. The burden of dizziness on society, health care systems, and individuals will increase if dizziness prevalence rises in older adults. GPs recorded symptoms or no diagnosis 35.9% of the time. In a similar study, GPs recorded an unidentified cause of dizziness in 40.0% of patients in a similar study. [28] This high rate may reflect difficulties in determining the cause of dizziness.

CONCLUSION

FRID adjustments were carried out the least compared with other management strategies. FRIDs should always be evaluated for older dizzy patients and adjusted if necessary. If discontinuing FRIDs does not pose any health risks, or if it cannot be discontinued, reducing their dose is the best option. Dizziness referral rates were higher than in previous studies. Referrals for dizziness should be cost-effective as well as effective in achieving their objectives.

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Cite this article:
Dr Vasu Rusum. (2023). Management of Dizziness in Older Patients by General Practitioners: Insights on Fall Risk Increasing Drug Usage. *Acta Biomedica Scientia*, 10(2), 26-31.