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Risk of Falls in Patients with Vestibular Migranean

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Abstract

Introduction: *Migraine is a common and disabling primary headache, which can be associated with vestibular symptoms such as dizziness. This symptom is due to vasoconstriction caused by migraine in areas of the vestibule responsible for balance. When this system is affected, it can generate imbalance and risk of falls.*

Objective: *To investigate the occurrence of the risk of falls in patients with vestibular migraine.*

Methods: *Descriptive observational, cross-sectional study, with a convenience sample including individuals of both sexes, diagnosed with migraine and complaints of dizziness, aged between 20 and 59 years. A questionnaire was used to characterize dizziness, and the Berg Balance Scale clinical test to assess the risk of falls, all participants answered.*

Results: *In the study, 38 participants were included, with a mean age of 40,2 (±11,9) years, of these 33 (86.8%) are female. There was a higher occurrence in the item low risk of falls 36 (94.7%). The most frequent type of dizziness was of the rotational type, with a time between 1 to 10 years and of moderate intensity. Sensation of instability, gait imbalance, pressure on the head, and vision darkening were the most frequent symptoms.*

Conclusion: *The data from the present study showed that individuals with vestibular migraine have a low risk of falls, however the progression of this risk should not be ignored.*

Keywords: *Risk of falls; Migraine; Dizziness; Vestibular diseases; Headache*

Introduction

Migraine is considered a common and disabling primary headache, which, for more than 72 hours, can be characterized as a migratory state. Vestibular symptoms such as intolerance to head movement, loss of balance and ataxia may be associated with migraine.[2]

When promoting vasoconstriction, migraine leads the nervous tissue to suffering, as there is a shortage of blood supply to the vestibule areas, the main responsible for the balance, thus justifying the symptoms of dizziness.[3] The imbalance in these patients can result in falls, which is associated with the second leading cause of deaths from unintentional or accidental injury in the world.[4]

In the scientific community there is a consensus in relating migraine with vestibular disorders, which influence the imbalance, however, few studies describe the characteristics of dizziness in individuals with migraine, associating them with the risk of falls.[5] As far as the objective of this study was exposed, to investigate the occurrence of the risk of falls in patients with vestibular migraine.

Materials and Methods

This is a descriptive, cross-sectional study configuring a convenience sample, with patients diagnosed with vestibular migraine. All participants signed an informed consent form, the study was approved by the research ethics committee of the University of the State of Bahia, nº 3,415,152 and the steps of the study

were guided by resolution 466/12 of the National Health Council.

All patients registered in the database of the University Pharmacy of the State University of Bahia diagnosed with migraine and with dizziness complaints registered in the medical records were invited to participate in the study. Of total of 100 medical records analyzed, 38 individuals had ideal characteristics for the study.

The sample consisted of patients with a medical diagnosis of migraine, who complained of dizziness, aged between 20 and 59 years, 33 females and 5 males. Patients with orthoses and / or lower limb prostheses were excluded.

Participants initially answered a questionnaire about their main complaint and symptoms; characteristics, intensity, occurrence and duration of crises; health in general in order to infer correlations with the topic to be researched.

Afterwards, the clinical test called Berg Balance Scale (BBS) was performed, which evaluates the functional balance, for the realization the following materials were used: stopwatch, measuring tape, chair with arm and small ladder. The test assesses 14 situations of daily life activity such as sitting, standing, walking on steps, among others. Each test has 5 alternatives ranging from 0 to 4 points. Scores from 41 to 56 indicate low risk of falls, 21 to 40 moderate risk, and below 20 high risk.[6]

For the characterization of categorical variables, absolute values and proportions were used and for the numerical variables mean and standard deviation or median and the interquartile range when depending on the behavior of the variable. Before the analyzes, tests were performed (symmetry and kurtosis) and the normality of the data was confirmed by the Shapiro-Wilk test. The Statistical Package for the Social Sciences (SPSS) software for Windows ®, version 21 (IBM Corp., Armonk, NY, USA) was used. Statistical significance $p < 0.05$.

Results

Of the total of 38 patients analyzed, the mean age was 40,2 (±11,9) years, regarding the distribution of sex 33 (86.8%) females with prevalence of physical activity 21 (55.2%) as observed in Table 01.

Table1. *Sociodemographic characteristics of the participants (N = 38)*

Variables		N (%)
Sex	Female	33 (86.8%)
	Male	05 (13.1%)
Age range	18-29	09 (23.6%)
	30-39	07 (18.4%)
	40-49	12 (31.5%)
	50-59	10 (26.3%)
Performed physical activity		21 (55.2%)

Regarding the risk of falls, it was observed that 36 (94.7%) of the total participants had a low risk of falls, while 2 (5.2%) moderate risk, as shown in Table 02.

Table2. *Distribution of the Berg Balance Scale score for risk of falls in patients with vestibular migraine.*

	N (%)
Low risk (41 - 56 points)	36 (94.7%)
Moderate risk (21-40 points)	02 (05.2%)
High risk (<20 points)	00 (00.0%)

Regarding the characterization of dizziness, in 20 (52.6%) individuals the dizziness occurred sporadically, of the rotational type 20 (52.6%), in 12 (31.5%) the dizziness time was concentrated between 1 to 10 years, with moderate intensity 12 (31.5%), the symptoms that most affected patients during the crises were a feeling of instability 32 (84.2%), followed by gait imbalance 29 (76.3%), pressure on the head 29 (76.3%) and blurred vision 28 (73.6%), as shown in Table 3.

Table3. *Characterization of dizziness clinical data*

Variables		N (%)
Dizziness time	Up to 1 year	12 (31.5%)
	More than 1 - 10 years	15 (39.4%)
	More than 10 years	08 (21.0%)
	No reply	03 (07.8%)
Type	Roundabout	20 (52.6%)
Intensity	Moderate	12 (31.5%)
Occurrence	Sporadic	20 (52.6%)
	Frequent	12 (31.5%)
Sensation / Symptoms	Of instability	32 (84.2%)
	Gait imbalance	29 (76.3%)
	Head pressure	29 (76.3%)
	Vision dimming	28 (73.6%)
Comorbidities	Anxiety	23 (60.5%)

Discussion

When describing the risk of falls through Berg Balance Scale, we point out some caveats in view that despite the occurrence for the risk of falls being concentrated in the low risk item, it can mean the possibility of falls. The relationship between risk of falls for individuals with vestibular migraine may be associated with the symptoms of dizziness, which includes, in addition to imbalance, loss of confidence and anxiety.[7] A study showed that individuals with migraine have imbalance even in a low or moderate risk situation, which can lead to falls.[5] On the other hand, the constant practice of physical activity provides improvements in body balance.[8]

There is a high prevalence of vestibular migraine in female patients with an average age close to 45 years old.[9] Some reasons why women suffer more from dizziness are menopause, cardiovascular and metabolic diseases.[10,11,12] It is also suggested that there is a greater motivation in women to seek health treatments.[13] We emphasize that the mentioned group had a low risk of falls and that more than 50% of this group practiced physical activity. Physical exercises can contribute to postural control in this group, and studies relate this issue to future research that includes variables such as falls and fear of falls.[8]

A limitation of the study refers to the characterization of the sample, since the fact of not having proof through examinations regarding the specific complaint of dizziness, may have biased the study. It is suggested that more studies be carried out with a larger number of subjects.

Conclusion

The data from the present study showed that individuals with vestibular migraine have a low risk of falls, however the progression of this risk should not be ignored.

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