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# Sensory organization test and motor control test in patients with migraine and vestibular migraine

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**Introduction**
Individuals with migraine have a high prevalence of vestibular symptoms, such as dizziness and balance deficits. The presence of aura and high frequency of attacks are associated with an increased risk of these symptoms. Vestibular migraine is a subtype of migraine described in the appendix of the International Classification of Headache Disorders (ICHD-III) along with the Committee for Classification of Vestibular Disorders of the Bárány Society. However, evidence is still lacking regarding how the balance of individuals with vestibular migraine is affected when compared to individuals with non-vestibular migraine.

**Objective**
To evaluate balance through Dynamic Computerized Posturography, with the Sensory Organization Test (SOT) and the Motor Control Test (MCT) in migraine subgroups: migraine and vestibular migraine.

**Methods**
Ninety women aged between 18 and 55 years were evaluated, divided by ICHD diagnostic criteria, into two groups: (1) migraine (GM); (2) vestibular migraine (GMV). The Dynamic Computerized Posturography exam was performed with the EquiTest - NeuroCom® software equipment, using the variables SOT and MCT. Clinical characteristics of migraine, presence of vestibular symptoms and number of falls in the last year were also evaluated. For the statistical analysis, mean and standard deviation were used in the comparison between groups, considering a significance of a = 0.05. The migraine and vestibular migraine groups were compared on the SOT for final score and on the MCT for latency during each of the test conditions using multivariate analysis of variance (MANOVA).

**Results**
The GM had the highest composite score on the SOT (M=74.0±9.7; MV=68.1±8.8; p=0.004), the highest score on the visual SOT (M=79.5±17, 9; MV=70.8±16.5); p=0.01] and in vestibular SOT (M=64.4±14.1; MV=54.4±14.4; p=0.02) than the GMV. In addition, all patients in the GMV reported vestibular symptoms, while in the GM, only 48.7% (p<0.001). There was no significant difference between the groups in the MCT (p=0.9).

**Conclusion**
Individuals with vestibular migraine showed worse performance on the SOT indicating a greater impairment of sensory systems and a worse clinical presentation of balance when compared to the migraine group.

**Keywords**: Migraine disorders, Postural balance, Sensory processing.

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