JOURNAL OF VESTIBULAR RESEARCH 2014;24(2,3):160.

THE BEDSIDE MINIMAL ICE TEST IN MIGRAINOUS PATIENTS WITHOUT VERTIGO COMPLAINS (P-D-11)

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Introduction: Dizziness and headache are prevalent complains in any medical facility. Since 1906, when Robert Bárány introduced the ice water induced nystagmus to investigate the vestibular function, different authors tried to establish which would be the best water amount and temperature for this test. The Minimal Ice Test (MIT), described by Linthicum in 1964, and reviewed by Nelson in 1969 among others, proved to be effective. Numerous studies have identified an association between headache disorders and vestibular symptoms, such as dizziness, vertigo, andmotion sensitivity. In this study we evaluated the MIT in 30 vertigo-free migraineurs as compared with controls.

Objective: To test the hypothesis that vertigo-free migraine patients present vestibular dysfunctions as detected by the MIT.

Patients and Methods: Thirty migraine patients according to the ICHD 3rd edition; 25 women, 19 to 62 y-o (median 39.3 years) without vertigo complain, and 30 sex and age paired controls participated in the study. Subjects were first examined to rule out the presence of spontaneous nystagmus and the external ear canals (EEC) were inspected to both dispel any cerumen obstruction and to evince the canal shape trough the tympanic membrane. A paper cup was half filled with water and three ice cubes, which usually maintain the temperature between 1◦ to 3◦C throughout the period of testing. A 1 mL syringe was filled with 0.2

mL ice water for instillation into the EEC. A stop watch was used to time the duration of nystagmus. The use of infrared Frenzel goggles was essential for better detection of the small nystagmus beats throughout thetest. Subjects were in the supine position with the head bended 30◦ forward. The head was rotated to the side so that the ice water was instilled in a single plunge and trickled by gravity to the eardrum. The subjects were left in this position for ten seconds and then turned straight ahead. While observing for nystagmus, continuous questioning kept the persons alert. If no nystagmus was observed after instillation, the procedure was repeated five minutes later with 0.4 mL. After the end of nystagmus, a five minutes interval was used before the same procedure was performed on the other side.

This study was approved by the local Ethics Committee.

Results: From 60 individuals (120 ears), all but one presented nystagmus in response to 0.2 mL MIT. One responded with 0.4 mL bilaterally. Among the patients the nystagmus duration ranged from 16 to 218 seconds – Right ear: 16 to 158 seconds (mean: 106.2 ± 39.4 seconds); Left Ear: 17 to 218 seconds (mean: 121.2 ± 45.8 seconds). The unilateral weakness average between R-L ears in the patients group was 20.97 ± 15.9%. In the control group the nystagmus duration ranged from 55 to 165 seconds. Right Ear: 55 to 156 seconds (mean: 108.5 ± 26.3 seconds); Left Ear: 75 to 165 seconds (mean: 119.7± 27.8 seconds). The unilateral weakness average between R-L ears in the control group was 18 ± 11.5%. (Fig. 1). Differences between patients and controls were not statictically significant at the p level 0.05.

Conclusion: Although not statistically significant, the migraine patients consistently showed unilateral vestibular weakness average when compared with healthy controls. Further studies are necessary to

determine if this asymmetry points to a migrainous subclinical vestibular system dysfunction.