

AUTONOMIC EVALUATION IN EPISODIC MIGRAINE WITH A COMPREHENSIVE ASSESSMENT

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Introduction. Evidence suggests that migraine patients experience a certain degree of autonomic nervous system (ANS) dysfunction both during attacks and interictal period. The study aims to evaluate the autonomic function in migraine patients compared to healthy controls.

Methods. Patients affected by episodic migraine (EM) were selected for an autonomic evaluation during the interictal phase. In addition, healthy subjects (HS) with similar age and sex distribution were selected for comparison. The subjects did not suffer from conditions (and were not on any therapy) influencing the ANS. Systolic and diastolic blood pressure (SBP and DBP) and heart rate (HR) were recorded using an automatic sphygmomanometer, while live HR variations were evaluated with an ECG chest band. The Composite Autonomic Symptom Score (COMPASS-31) was administered to investigate autonomic symptoms. The following autonomic function tests (AFT) was administered: Standing Up Test (SUT–10min), Isometric Handgrip Test (IHT–3min), Mental Arithmetic Test (MAT–2min), Cold Pressor Test (CPT–90sec), and Hyperventilation Test (HVT–60sec) assessing BP and HR variations from baseline. Moreover, respiratory sinus arrhythmia (RSA) during Deep Breath Test (DBT–1min) was evaluated.

Results. 20EM (17F) and 18HS (12F) have been included. SBP variation at CPT was slightly higher in EM than in HS (2.7 ±5.6 vs -0.8 ±4.7, p-value 0.043). HVT revealed a significantly lower HR variation in EM patients compared to HS (4.4 ±6.4 vs 14.3 ±9.8, p-value 0.001). The other AFTs did not reveal significant differences. Conversely, at the COMPASS-31 EM subjects reported a higher autonomic burden compared to HS (24.9 ±16.9 vs 11.2 ±8.3, p-value 0.008).

Conclusions. Sympathetic pressor response at CPT was greater in EM compared to HS, suggesting a potentially higher sensitivity to external stimuli. Hyperventilation produced a lower HR variation in EM subjects, implying that vagal withdrawal is more evident in HS. Despite a significant autonomic burden at COMPASS-31, no other AFT showed alterations in EM. The present data suggest mild interictal alterations in cardiovascular regulation, but further studies during the ictal phase are requested to appreciate any other autonomic alteration in migraine subjects.