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**Dysfunction of the autonomic nervous system in hypertensive patients**Csapo K<sup>1</sup>, Bajko Z<sup>2</sup>, Szekeres Cs<sup>2</sup>, Molnar S<sup>1</sup>, Magyar MT<sup>1</sup>, Soltesz P<sup>3</sup>, Csiba L<sup>1</sup><sup>1</sup>Neurology Department, University of Debrecen, Hungary<sup>2</sup>Neurology Department, University of Tirgu Mures, Romania<sup>3</sup>3rd Internal Medicine Department, University of Debrecen, Hungary

The dysregulation of the autonomic nervous system plays an important role in the development of hypertension. The heart rate variability and baroreflex sensitivity are established methods for the evaluation of the cardiac autonomic activity and provide the assessment of the sympathetic and vagal activity. Our purpose is to measure the cardiac parameters of the autonomic nervous system in hypertensive patients and the efficacy of the antihypertensive treatment by non-invasive technique. We established a complex non-invasive system for the simultaneous measurement and comparison of cardiac/cerebral/peripheral hemodynamics.

Hypertensive patients are examined with transcranial Doppler and impedance cardiograph during tilt-table test. Intima-media thickness, flow-mediated dilatation in brachial artery, augmentation index and pulse wave velocity are also measured. The measurement is repeated after antihypertensive treatment. Heart rate variability is calculated with spectral analysis, the baroreflex sensitivity is obtained by the sequence technique.

At baseline 28 healthy persons (age: 48,29±8,14 yrs, m/f rate: 1) and 28 hypertensive patients (age: 46,11±6,54 yrs, m/f rate: 1,1) were enrolled. The number of the baroreflex sequences was significantly higher (66,9 vs 51,1; p=0,031), the baroreflex effectiveness index was significantly lower (67,3 v 58; p=0,027) in the hypertensive group. Also significantly lower heart rate variability was measured in the low frequency range (213 ms<sup>2</sup> vs 468,2 ms<sup>2</sup>, p=0,018) in the hypertensive group.

The decreased baroreflex sensitivity and heart rate variability proved the autonomic dysfunction, the lower sympathetic activity indicated long-standing systemic hypertension in the hypertensive group. The results of the 6-month long antihypertensive therapy will be summarized.

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**Mitral Valve Doppler embolic signals are predictive of cerebral embolism in Patent Foramen Ovale-Migraine patients**de Campora P<sup>1</sup>, Malferrari G<sup>3</sup>, Iannuzzo M<sup>2</sup>, Ragozzino L<sup>1</sup>, Russo L<sup>4</sup>, Martino V<sup>1</sup>, Sangiuolo R<sup>1</sup><sup>1</sup>Department of Cardiology, Ospedale Fatebenefratelli, Italy<sup>2</sup>Department of Epidemiology and Biostatistical, Ospedale Fatebenefratelli, Italy; <sup>3</sup>Stroke-Unit Arcispedale S.Maria Nuova, Reggio Emilia, Italy; <sup>4</sup>Department of Medicine, Ospedale Fatebenefratelli Napoli, Italy

Patent Foramen Ovale (PFO) has been associated with cardio-embolic stroke and migraine. PFO prevalence is found in up to 50% of patients less than 55 years of age who have suffered ischemic strokes.

**Objectives:** To identify mitral valve embolic signals predictive of possible cerebral embolism in PFO-Auramigrain patients by non-invasive trans-thoracic echocardiography (TTE).

**Methods:** 50 patients (34 women, 16 men) suffering of Aura-Migrain (MA+) and 50 out-patients (MA-) age and sex matched as a control group (34 women, 16 men) underwent TTE. Mitral Valve Doppler Embolic Signals (MVES) were assessed by transthoracic bidimensional color-doppler echocardiography. Cardiac chambers volumes and left ventricular ejection fraction showed normal values according with the age of patients.

**Results:** 28 patients of MA+ group were MVES positive (56 %). MVES positivity was observed in 6 patients of control group (12 %). The 28 patients MVES+ had TEE to investigate PFO or different cardio-embolic sources. TEE detected PFO in 24 patients (85.7 %) MVES+, different cardio-embolic sources in 4 (14.28 %). Control group MVES + patients had PFO (100 %) diagnosed by TEE. MVES show a statistically significant relation (p < 0.001) with MA+ condition. Patients suffering of migraine with aura have an odds ratio of 9,33 for MVES + in comparison with control subjects. In accordance with published data, a strong association was found between embolic phenomenon and PFO size.

**Conclusions:** The purpose of this study was to identify cerebral embolisms by non-invasive diagnostic tool, assessed in Aura migraine patients by mitral valve Doppler embolic signals at the TTE.