

sec respectively 0.12 ± 0.03 m/sec. E/e' ratio was 12 ± 3 group I and 8 ± 4 for group II.

Conclusions: 1. Most frequently form of left ventricle remodelling was concentric hypertrophy 68% followed by eccentric hypertrophy 32%.

2. Distribution by gender was same for women and men.

3. Myocardial systolic wall stress was highest in concentric hypertrophy = 2292 ± 560.8 dyne/cm² surface square area.

4. Mitral diastolic flow of diastolic dysfunction type I was associated mostly with concentric hypertrophy.

5. Concentric hypertrophy was associated the lowest systolic tissue velocities which suggest that it may be the beginning of the systolic left ventricle dysfunction, undetectable by 2D echocardiographic techniques.

6. The highest values of E/e' ratio presented in patients with concentric hypertrophy suggest that the left ventricle filling pressure are increased in this group of patients.

HEART RATE VARIABILITY, LARGE VESSEL REMODELLING AND METABOLIC PARAMETERS IN STAGE 1 HYPERTENSION ACCORDING TO THE ACC/AHA 2017 GUIDELINES

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Objective: Controversial definition of arterial hypertension (AH) by the ACC/AHA 2017 Guidelines renewed interest in the earlier stages of blood pressure (BP) elevation.

The aim: to investigate the features of the heart rate variability (HRV), large vessel remodelling (VR) and metabolic parameters in subjects with stage 1 AH according to the new American guidelines ($130\text{--}139$ / or $80\text{--}89$ mmHg).

Design and method: We investigated 148 untreated subjects with the following BP levels (mmHg): < 120 / and < 80 (group 1; n = 33), $120\text{--}129$ / and < 80 (group 2; n = 27), $130\text{--}139$ / or $80\text{--}89$ (group 3; n = 60), ≥ 140 / or ≥ 90 mmHg (group 4; n = 28). HRV indices were assessed by 24-hour Holter monitoring data, large vessel remodelling parameters - on the basis of applanation tonometry (Sphygmocor) and carotid echo-tracking (Artlab) data. The results are presented as mean \pm standard deviation.

Results: In comparison to group 1, group 2 had lower levels the high-density lipoproteins levels (61.7 ± 15.6 and 51.7 ± 11.6 mg/dl, respectively, $p = 0.009$), increased diameter of carotid artery (6.8 ± 0.4 and 7.5 ± 0.5 mm, respectively, $p = 0.034$) and similar pattern of HRV parameters. Group 3, compared to groups 1 and 2, had significantly higher glucose and uric acid levels ($p = 0.045$ and $p = 0.017$, respectively), and also increased carotid-femoral pulse wave velocity, compared to groups 1 (7.8 ± 1.2 and 7.2 ± 0.9 m/s, respectively, $p = 0.025$). These alterations were associated with an increase in the high-frequency component of HRV (HF, $p = 0.013$ and r-MSSD, $p = 0.022$) and greater distensibility of the carotid vascular wall ($p = 0.004$), which were not observed in the group 4.

Conclusions: Subjects with blood pressure of $130\text{--}139$ / or $80\text{--}89$ mmHg are characterized by distinct metabolic abnormalities, initial signs of vascular remodelling and alterations of HRV, which might predispose to further progression of BP elevation and development of target organ damage.