FASTING CORTISOL PLASMA LEVEL AND VARIABILITY OF HEMODYNAMIC STATE IN HYPERTENSIVE PATIENTS

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Objective. The aim of study was to investigate the relationship between cortisol plasma concentration and some characteristics of cardiac remodeling and hemodynamics in patients with essential arterial hypertension (AH).

Design and method. 81 patients with AH (32 males, 51±9 years old) were enrolled in the study. Mean office blood pressure (BP) of the examined patients was 148±15/94±6 mm Hg. The fasting plasma cortisol concentration was determined by immunoassay. Cardiac remodeling and peculiarities of hemodynamics were assessed by echocardiography and 24-hours BP monitoring. Data are presented as mean ± standard deviation and correlation coefficient.

Results. The fasting cortisol plasma level varied significantly among hypertensives (377.9±190.6 nmol/l) and correlated with few parameters of hemodynamics such as diurnal systolic BP variability (r=0.25, p=0.02) and diurnal heart rate variability (r=0.26, p=0.02). Moreover, there were positive correlation of cortisol with relative thickness of left ventricular wall (r=0.36, p=0.001) and negative correlations with end diastolic diameter of left ventricle (r=-0.34, p=0.002), stroke volume (r=-0.27, p=0.02)and cardiac output (r=-0.33, p=0.004).

Conclusions. High fasting plasma cortisol level is associated with tendency of hemodynamic to be more variable and myocardial remodeling to be more concentric in hypertensive patients.