Studying the NT-proBNP as a Biochemical for Diagnosing and Predicting Early Heart Failure in Primary Hypertension Patients Classified by the ACC/AHA Categories of Hypertension in 2017

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BACKGROUND: Hypertension is still considered a major global public health concern. Unlike previous classification, the new ACC/AHA (2017) categorized 130-139/80-89 mmHg as stage 1 hypertension because at this stage, risks of cardiovascular diseases can occur such as heart failure. Conventional methods (echocardiography, electrocardiography, and X-rays) are supplementary to diagnosing heart failure; however, they mostly rely on the subjective judgments of the physicians and are not for screening. Nowadays, NT-proBNP as a biomarker is really important for early detection of heart failure. METHODS: 97 patients with primary hypertension were involved in a cross-sectional survey, having their blood undertaken for laboratory testings of NT-proBNP. RESULTS: Mean NT-proBNP concentration in primary hypertension patients significantly increased by age, and 2/3 of stage I Hypertension patients had elevated NT-proBNP. In addition, NT-proBNP concentration was closely linked to the systolic blood pressure ($r = 0.929$; $p < 0.001$), and increased by the severity of heart failure in NYHA class ($p < 0.01$). NT-proBNP levels were positively correlated with left ventricular hypertrophy by the Sokolow-Lyon index and left ventricle max index ($p < 0.001$); but negatively correlated with EF ($r = - 0,945$; $p < 0.01$). CONCLUSIONS: NT-ProBNP should be tested on a regular basis in primary hypertension patients by 2017 ACC/AHA categories in order to early diagnose and predict heart failure for prompt treatment. Key words: NT-proBNP, heart failure, hypertension.

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