Incidence and probability of heart failure with preserved ejection fraction among high risk hypertensive patients.

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Background: Diagnosis of heart failure with preserved ejection fraction (HFpEF) is still challenging in clinical practice. We aimed to assess HFpEF probability and incidence in high risk patients with hypertension using different diagnostic algorithms.

Methods: Study included 39 high risk hypertensive patients with at least one symptom or sign of HF and left ventricular ejection fraction (EF) =50% (71.4% female, 70±11 years (M±SD), obesity 48.6%, diabetes mellitus 40%, atrial fibrillation 28.6%, chronic kidney disease 43%, estimated glomerular filtration rate (eGFR) 65 [48.3;72.8] ml/min/1.73 m², NT-proBNP level 120 [50; 195] pg/ml). Patients with significant valvular heart disease, acute coronary syndrome, acute infections, pulmonary embolism, neoplasm, eGFR <30 ml/min/1.73 m², body mass index >40 kg/m² were not included.

HFpEF was assessed by 2016 ESC Heart Failure (HF) Guidelines and recently proposed ESC HFA-PEF2 and H2FPEF scores. Stress-echo with passive leg raising was used to detect impaired LV diastolic function reserve and the increase in LV filling pressure.

Results: The most common HF symptoms and signs were: dyspnea at exertion 90%, fatigue 67.4%, tachycardia at rest 35%, peripheral edema 32%. 43% of patients had increased NT-proBNP = 125 pg/ml.

In 41% of cases that fulfilled criteria for HFpEF diagnosis according to 2016 ESC HF Guidelines, with median NT-proBNP level of 220 [150;562] pg/ml, only structural heart abnormalities, only diastolic dysfunction and both were identified in 31.2, 0 and 68.8% cases, respectively.

Low (<2 points), intermediate (2-5 points) and high probability (>5 points) of HFpEF was identified in 8.6, 65.7 and 25.7% of patients according to H2FPEF score.

Using ESC HFA-PEF2 score HF was not detected in 8.6% of cases (<2 points), 57% of patients had intermediate risk of HF and required for stress echocardiography (2-4 points), and 34.4% of patients had confirmed HF (> 5 points). In intermediate risk patients echo-stress test additionally confirmed HFpEF in 25% cases. Thus, HFpEF was verified in 48.5 % of patients by HFA-PEF2 score.

There was no agreement in verification of low HF probability between ESC HFA-PEF2 score and H2FPEF score in same patients, it was accounted for 37.1% and 15.4% of intermediate and high HF probability groups. Among patients with HFpEF diagnosed by 2016 ESC HF Guidelines, ESC HFA-PEF2 score identified 68.7% of patients with high HFpEF probability, H2FPEF score – 50% of patients. Results of 3 diagnostic algorithms were consistent in 22.8% patients.

Conclusion: HFpEF was diagnosed in 41% of patients using 2016 ESC HF Guidelines, in 48.5 % of cases by ESC HFA-PEF2 score and its high probability in 25.7 % by H2FPEF score. Disagreement between different HFpEF diagnostic algorithms was found with the consistency of the results only in 22.8% patients. According to this, additional analyses and future researches are needed to verify reasons of this heterogeneous data.