

## Comparison of algorithms of left ventricular diastole function assessment in hypertensive individuals with preserved ejection fraction

S. Zhemanyuk<sup>1</sup>, V. Syvolap<sup>1</sup>

<sup>1</sup>Zaporizhzhia State Medical and Pharmaceutical University, Department of Propaedeutics of Internal Medicine, Radiation Diagnostics and Radiation Therapy, Zaporizhzhia, Ukraine

**Funding Acknowledgements:** None.

The aim of the study was to compare two echo-algorithms of the assessment of the left ventricular diastole function (2016 the American Society of Echocardiography/the European Association of Cardiovascular Imaging and the 2024 British Society of Echocardiography guidelines) in routine clinical practice.

**Methods:** We retrospectively enrolled 142 adult hypertensive patients with cardiovascular disease of different aetiologies who underwent transthoracic echocardiography examination (2D imaging, Doppler) for routine clinical indications. It was measured echocardiography parameters for diastolic function evaluation as transmitral Doppler E wave, mitral annular Tissue Doppler Imaging e' septal and e' lateral, average E/e', left atrium volume index, the velocity of tricuspid regurgitation.

**Results:** Overall, a total of 90 subjects were finally included (mean age 61.8 years (95% CI 59.1 to 64.5), 44.4% women) who had preserved left ventricular (LV) ejection fraction ( $\geq 50\%$ ). By applying the 2024 recommendations, 11% of individuals fulfilled the criteria for impaired diastolic function with elevated filling pressure, 83 % of subjects were diagnosed with normal diastolic function, and only 4.4% had impaired diastolic function with normal filling pressures. Meanwhile, according to the 2016 recommendations, 12 % were diagnosed with diastolic dysfunction, 54% had a normal diastolic function and 34% subjects had indeterminate diastolic function, and required additional examination.

**Conclusions:** This study demonstrates that a low number of individuals with impaired diastolic function with normal filling pressures was classified based on British recommendation 2024, however, a high number of patients with indeterminate diastolic function was diagnosed through guideline 2016. The new echocardiographic approach for estimating the left ventricular diastole function presented in 2024 could have higher clinical utility, especially in resource-limited settings for routine examination of hypertensive patients.