

Is Diastolic Global Longitudinal Strain Rate Associated with Mortality and Re-hospitalization in Patients with Heart Failure?

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Abstract

Background: The aim of the present study was to investigate the association between diastolic global longitudinal strain (GLS) rate and mortality, re-hospitalization as well as hospitalization period in heart failure (HF) patients. Methods: Clinical, laboratory and echocardiographic parameters within the first 24 hours for 116 patients with ejection fraction (EF) [?] 40% and Class 3 to Class 4 symptoms of New York Heart Association who were hospitalized in the cardiology clinic of our hospital were reviewed. Fifty-eight individuals without any diagnosis for cardiac failure were included as the control group. Echocardiographic measurements, tissue Doppler and diastolic strain rate (SR) were reviewed. The N-terminal pro-brain natriuretic peptide (ProBNP) level was analysed in addition to standard biochemical and hematological parameters. Results: The diastolic E strain rate and E/E'SR was statistically significant in patients with mortality within one month ($p < 0.05$). These two parameters were statistically significant also in patients with one-month mortality ($p < 0.005$). When looked under the guidance of these findings, E strain rate and E / E 'SR are a predictive parameter for one month mortality in HF patients. Conclusion: The E strain rate and E/E'SR are superior parameters than other tissue doppler parameters to predict the prognosis and the mortality in patients with heart failure. E/E'SR is a superior indicator for diastolic function of the left ventricle when compared to other tissue doppler parameters.

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