

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

Sefa Tatar<sup>1</sup>, Alpay Aribas<sup>2</sup>, Hakan Akilli<sup>1</sup>, Nazire Akilli<sup>3</sup>, Abdullah Icli<sup>4</sup>, and Ahmet Sertdemir<sup>1</sup>

<sup>1</sup>Necmettin Erbakan University, Meram Faculty of Medicine

<sup>2</sup>Necmettin Erbakan University, Meram School of Medicine

<sup>3</sup>Affiliation not available

<sup>4</sup>Necmettin Erbakan Universitesi Meram Tip Fakultesi Hastanesi

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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. Fiftyeight 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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