

42. Global Longitudinal Strain Predicts Cardiovascular Events of Acute Heart Failure With Preserved Ejection Fraction in the Asian Population: Does Gender Matter?

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Background: Left ventricle global longitudinal strain (GLS) was shown to be a good predictor of cardiovascular outcomes in the different phenotypes of heart failure. However, the influence of gender on the predictive value of GLS in the Asian population of acute heart failure with preserved ejection fraction remained to be elucidated. We assessed the association of GLS and cardiovascular outcomes in different gender.

Methods: Subjects who presented to Taipei Veteran General Hospital between 2018 to 2020 with acute decompensated heart failure and preserved left ventricular ejection fraction were eligible for this study. GLS was measured with 2D speckle tracking analysis software (AutoStrain, TomTec) and GLS less than 16% was abnormal. Cox proportional hazards models assessed the association between abnormal GLS and outcomes.

Results: Among a total of 566 subjects (82.34 ± 13.91 years), 291 (51.4%) men and 275 (48.5%) women were enrolled. Women had higher GLS at pre-discharge than men. Improvement of GLS at 6 months after discharge was more frequently observed in women than men (60.5% versus 42.4%, $p = 0.027$). In Cox proportional hazards models, abnormal GLS was an independent predictor of 1-year rehospitalization of heart failure [hazard ratio and 95% confidence interval: 2.20 (1.11 – 4.37)] after adjusting age, gender, left ventricle ejection fraction, coronary artery disease, pulmonary artery pressure, hypertension and diabetes mellitus. In addition, GLS was an independent predictor of rehospitalization in women [hazard ratio and 95% confidence interval: 2.76 (1.07 - 7.15)] but not in men [hazard ratio and 95% confidence interval: 1.45 (0.38 – 5.54)]

Conclusions: In the Asian population with AHF and preserved ejection fraction, GLS was an independent predictor of short-term heart failure rehospitalization. The predictive value was higher in women than in men.

Clinical Implications: predict the prognosis of acute heart failure with preserved ejection fraction in the Asian population more precisely according to the finding of the difference of the predictive value of GLS between gender. In addition, the finding implied that the different phenotypes of heart failure between gender could be the cause of differences in predictive value.