

INTISARI

Hubungan antara Waktu Iskemia dengan Global Longitudinal Strain (GLS) Ventrikel Kiri pada Pasien Infark Miokardium Akut dengan Elevasi Segmen ST yang Berhasil Dilakukan Reperfusi

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Latar Belakang: Infark miokardium akut dengan elevasi segmen ST (IMA-EST) merupakan manifestasi PJK yang paling sering. Lamanya waktu iskemia miokardium akibat oklusi koroner akan menentukan kejadian remodeling dan luas infark. *Echocardiography speckle tracking* (EST) melalui parameter strain longitudinal merupakan salah satu teknik yang mampu menilai deformasi miokardium, memprediksi remodeling ventrikel dan luas infark. Tujuan penelitian ini untuk mencari hubungan antara waktu iskemia dengan GLS ventrikel kiri.

Metode : Penelitian ini berupa studi observasional analitik dengan metode potong lintang. Subjek penelitian adalah pasien IMA-EST yang berhasil dilakukan reperfusi serta memenuhi kriteria inklusi dan eksklusi. Ekokardiografi transthoraks dilakukan dalam kurun 12 jam pasca reperfusi dan dianalisis secara *offline*. Uji normalitas dilakukan untuk menentukan jenis uji korelasi yang digunakan. Pengaruh faktor perancu dianalisis secara bivariat dan multivariat. Nilai $p < 0,05$ dikatakan bermakna secara statistik.

Hasil : Dari total 43 subjek penelitian didapatkan data waktu iskemia dan GLS. Dari uji normalitas didapatkan sebaran data kedua variabel tidak normal. Dilakukan uji korelasi *Spearman* untuk menilai hubungan kedua variabel dan didapatkan adanya hubungan negatif antara waktu iskemia dan GLS ($r = -0,546$; $p = 0.000$). Analisis bivariat dan multivariat dilakukan untuk menilai pengaruh faktor perancu. Dari uji multivariat didapatkan waktu iskemia menjadi faktor independen yang mempengaruhi nilai GLS ($p = 0,002$).

Simpulan : Terdapat hubungan negatif antara waktu iskemia dengan GLS ventrikel kiri pada pasien IMA-EST yang berhasil dilakukan reperfusi ($r = -0,546$; $p = 0.000$).

Kata kunci : Infark miokardium akut, luas infark, *global longitudinal strain*

Abstract

Relationship Between Time of Ischemia and Global Longitudinal Strain (GLS) of Left Ventricle in Patients with ST-Segment Elevation Myocardial Infarction (STEMI) who were Successfully Reperfused

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Background: Coronary heart disease (CHD) is a problem that contributes to morbidity and mortality. Acute myocardial infarction with ST-Segment Elevation Myocardial Infarction (STEMI) is the most common manifestation of CHD. Cardiac muscle damage caused by STEMI is dynamic. The longer coronary is occluded, the area of infarction will be the greater then cause biomechanical changes in the myocardium. Speckle Tracking Echocardiography (STE) through longitudinal strain parameter is a technique of assessing myocardial deformation and predicting the infarct area immediately after reperfusion therapy.

Method: This study was an analytic observational study with a cross-sectional method. Subjects were STEMI patients who were successfully reperfused and fulfilled the inclusion and exclusion criterias. Transthoracic echocardiography was performed within 12 hours after reperfusion. Strain analysis was done offline at the work station. A normality test was performed to determine the type of correlation test used. The influence of confounding factors were analyzed by bivariate and multivariate. A value of $p < 0.05$ was said to be statistically significant.

Results: There were 43 subjects, ischemia time and GLS were obtained. A normality test using Shapiro Wilk revealed that data distribution of the two variables were abnormal. The Spearman correlation test was used to assess the relationship between the two variables and found a negative correlation between the time of ischemia and GLS ($r = -0.546$; $p = 0.000$). Bivariate and multivariate analyses were performed to assess the influence of confounding factors. From the multivariate test, it was found that ischemia time was an independent factor influencing GLS value ($p = 0.002$).

Conclusion: There is a negative correlation between ischemia time and left ventricular GLS in STEMI patients who were successfully reperfused ($r = -0.546$; $p = 0.000$).

Keywords: Acute myocardial infarction, infarction area, global longitudinal strain