

Korelasi Nilai Left Atrial Emptying Fraction dan Left Atrial Volume Index dengan Left Ventricle Ejection Fraction pada Pasien Gagal Jantung Kronik = Correlation between Left Atrial Emptying Fraction and Left Atrial Volume Index with Left Ventricular Ejection Fraction in Patients with Chronic Heart Failure

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Abstrak

Latar belakang : Pasien gagal jantung kronik memerlukan evaluasi pemeriksaan ekokardiografi. Berbagai metode pemeriksaan digunakan dalam pemeriksaan ekokardiografi, diantaranya pemeriksaan LAEF, LAVI, dan LVEF yang terkait dengan penelitian ini. Metode pemeriksaan LAEF dan LAVI memiliki peran dalam menilai remodelling atrium kiri, sedang LVEF terkait dengan fungsi sistolik ventrikel kiri.

Tujuan : Penelitian ini bertujuan menilai korelasi nilai LAEF dan LAVI dengan nilai LVEF pada < 40% dan 40%.

Metode : Studi potong lintang pada 150 pasien gagal jantung kronik yang dilakukan pemeriksaan ekokardiografi trans-torakal di eko-lab PJT RSCM. Pemeriksaan ekokardiografi metode LAEF dengan metode area length (2 dimensi) pada minimal 2 view eko, sedangkan LAVI dengan metode 2 dimensi. Pemeriksaan LVEF dengan metode Simpson.

Hasil : Pada penelitian didapatkan 150 subjek dengan nilai median LAVI 30,9mL/m² (RIK 22,08-40,80), nilai median LVEF 55,75 % (RIK 40,75-61,85), nilai LAEF median 31,8 % (RIK 23,98-38,30). Korelasi nilai LAEF dengan nilai LVEF pada LVEF < 40% dengan hasil korelasi positif sedang bermakna ($r = 0,614$; $p < 0,001$), pada LVEF 40% dengan hasil korelasi positif sedang bermakna ($r = 0,580$; $p < 0,001$). Korelasi nilai LAVI dengan nilai LVEF pada LVEF < 40% dengan hasil berkorelasi negatif lemah dan tidak bermakna ($r = -0,093$; $p = 0,722$), sedangkan pada LVEF 40% dengan hasil berkorelasi negatif lemah bermakna ($r = -0,299$; $p < 0,001$). Dilakukan sub-analisis pada LVEF 40-50%, didapatkan nilai LAEF dan nilai LVEF berkorelasi positif lemah bermakna ($r = 0,492$; $p < 0,001$). Lalu sub-analisis pada LVEF 50%, didapatkan korelasi nilai LAEF dan nilai LVEF positif lemah tidak bermakna ($r = 0,205$; $p = 0,063$).

Kesimpulan : Terdapat korelasi positif nilai LAEF dengan nilai LVEF pada pasien gagal jantung kronik baik pada HFrEF (LVEF < 40%) dan LVEF 40%, sehingga nilai LAEF pada cut-off nilai LVEF 40% dapat menjadi salah satu marker menilai proses remodelling atrium kiri. Sedangkan nilai LAVI dengan LVEF pada pasien gagal jantung kronik ditemukan korelasi lemah atau tidak adanya korelasi.

.....Background : Patients with chronic heart failure require echocardiographic evaluation. Various examination methods were used in echocardiographic examinations, including LAEF, LAVI, and LVEF examinations related to this study. LAEF and LAVI examination methods have a role in assessing left atrial remodeling, while LVEF is related to left ventricular systolic function.

Objective : This study aims to assess the correlation between LAEF and LAVI values with LVEF values at LVEF < 40% and LVEF 40%.

Methods : A cross-sectional study of 150 patients with chronic heart failure who underwent transthoracic echocardiography at the RSCM PJT eco-lab. Echocardiographic examination using the LAEF method with the area length method (2 dimensions), in at least 2 eco views, while the LAVI using the 2-dimensional

method. LVEF examination by the Simpson method.

Results : The study found 150 subjects with a median LAVI value of 30.9 mL/m² (IQR 22.08-40.80), a median LVEF value of 55.75% (IQR 40.75-61.85), a median LAEF value of 31.8% (IQR 23.98-38.30). The correlation between the LAEF value and the LVEF value at LVEF < 40% has a moderately significant positive correlation ($r = 0.614$; $p < 0.001$), while at LVEF 40% has a moderately significant positive correlation ($r = 0.580$; $p < 0.001$). The correlation between the LAVI value and the LVEF value at LVEF < 40% has a weak and insignificant negative correlation ($r = -0.093$; $p = 0.722$), while at LVEF 40% has a weak negative significant correlation ($r = -0.299$; $p < 0.001$). Sub-analysis was performed on LVEF 40-50%, and the LAEF value and LVEF value were positively and significantly correlated ($r = 0.492$; $p < 0.001$). Then the sub-analysis at LVEF > 50%, it was found that the correlation between the LAEF value and LVEF value were weak positive and not significant correlated ($r = 0.205$; $p = 0.063$).

Conclusion : There is a positive correlation between LAEF values and LVEF values in chronic heart failure patients both at HFrEF (LVEF < 40%) and LVEF 40%, so that the LAEF value at the cut-off LVEF 40% can be one of the markers to assess the left atrial remodeling process. While the value of LAVI with LVEF in patients with chronic heart failure found a weak correlation or no correlation.