

INTISARI

NILAI *STRAIN* ATRIUM KIRI SEBAGAI PREDIKSI KEJADIAN FIBRILASI ATRIUM DI RUMAH SAKIT PADA PASIEN INFARK MIOKARD AKUT ELEVASI SEGMENT ST YANG DILAKUKAN INTERVENSI KORONER PERKUTAN PRIMER

Muliawan, R., Marsam R.K., Bagaswoto, H.P

Latar Belakang

Fibrilasi atrium (FA) merupakan salah satu faktor yang memperburuk luaran dan peningkatan mortalitas pasien infark miokard akut elevasi segmen ST (IMA-EST) pasca intervensi koroner perkutan (IKP) primer. Penilaian disfungsi atrium kiri secara dini dengan ekokardiografi penting untuk memprediksi terjadinya FA pada pasien IMA-EST pasca IKP primer selama perawatan di rumah sakit. Pengukuran nilai *strain* atrium kiri dapat digunakan mendeteksi gangguan mekanika dan struktural atrium kiri yang berkaitan dengan kejadian FA.

Tujuan Penelitian

Mengetahui nilai *strain* atrium kiri sebagai salah satu kriteria untuk memprediksi terjadinya FA selama perawatan di rumah sakit pada pasien IMA-EST yang dilakukan IKP primer.

Metode Penelitian

Studi kohort retrospektif menggunakan data pasien IMA-EST pasca IKP primer dari register SCIENCE (*Sadrjito Cardiovascular Intensive Care*) periode Juni 2022-Juli 2023. Ekokardiografi dan penilaian *strain* atrium kiri dilakukan pasca IKP primer di *Intensive Cardiac Care Unit* (ICCU).

Hasil

Didapatkan 225 pasien yang memenuhi kriteria inklusi sebagai subjek penelitian dari 399 pasien IMA-EST yang dilakukan IKP primer. Selama observasi didapatkan 196 subjek (87,12%) dengan irama sinus dan 29 subjek (12,88%) dengan irama FA. Semua parameter *strain* atrium kiri secara signifikan menurun pada pasien FA. Analisa multivariat didapatkan nilai *strain conduit* <13,5% (*area under curve* (AUC) 0,640, sensitivitas (Sn) 96,6%, spesifisitas (Sp) 34,7%, *odds ratio* (OR) 12,78 interval kepercayaan 95% (IK95%) 1,72-107, p=0,016), *strain contractile* <11,5% (AUC 0,645, Sn 96,6%, Sp 30,1%, OR 13,6 IK95% 1,6-102, p =0,013) dan usia ≥ 60 tahun (OR 3,77, IK95% 1,27-11,13, p=0,016) secara signifikan dapan meningkatkan terjadinya FA sedangkan subjek dengan *low density lipoprotein* (LDL) ≥ 100 mg/dl memiliki hubungan yang berkebalikan (OR 0,29, IK95% 0,11-0,74, p=0,01)

Simpulan

Nilai *strain* atrium kiri yaitu *strain contractile* dan *conduit* dapat memprediksi kejadian fibrilasi atrium di rumah sakit pada pasien IMA-EST yang telah dilakukan IKP primer. Pasien dengan usia ≥ 60 tahun memiliki risiko tinggi terjadinya FA. Sedangkan nilai LDL berkorelasi terbalik dengan kejadian FA

Kata kunci: strain atrium kiri, strain conduit, strain contractile, strain reservoir, fibrilasi atrium, IMA-EST, IKP primer, perawatan rumah sakit

ABSTRACT

LEFT ATRIAL STRAIN VALUE AS A PREDICTOR OF IN-HOSPITAL ATRIAL FIBRILLATION EVENTS IN ST-SEGMENT ELEVATION ACUTE MYOCARDIAL INFARCTION PATIENTS UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION

Muliawan, R., Marsam R.K., Bagaswoto, H.P

Background

Atrial fibrillation (AF) is one of the factors that worsen outcomes and increase mortality of acute ST-segment elevation myocardial infarction (STEMI) patients after primary percutaneous coronary intervention (PCI). Early assessment of left atrial dysfunction by echocardiography is important to predict the occurrence of AF in STEMI patients after primary coronary intervention during hospitalisation. Measurement of left atrial strain values can be used to detect left atrial mechanical and structural disorders associated with AF.

Research Objective

To determine the value of left atrial strain as one of the criteria to predict the occurrence of AF during hospitalisation in patients with STEMI who underwent primary PCI.

Research Methods

Retrospective cohort study using data of STEMI patients after primary PCI from the SCIENCE (Sadrjito Cardiovascular Intensive Care) register from June 2022-July 2023. Echocardiography and left atrial strain assessment were performed post primary PCI in the Intensive Cardiac Care Unit (ICCU).

Results

There were 225 patients who met the inclusion criteria as study subjects from 399 STEMI patients who underwent primary PCI. During the observation, 196 subjects (87.12%) were found with sinus rhythm and 29 subjects (12.88%) with AF. All left atrial strain parameters were significantly decreased in FA patients. Multivariate analysis obtained conduit strain values $<13.5\%$ (area under curve (AUC) 0.640, sensitivity (Sn) 96.6%, specificity (Sp) 34.7%, odds ratio (OR) 12.78 95% confidence interval (95% CI) 1.72-107, $p=0.016$), contractile strain $<11.5\%$ (AUC 0.645, Sn 96.6%, Sp 30.1%, OR 13, 6 IK95% 1.6-102, $p=0.013$) and age ≥ 60 years (OR 3.77, CI95% 1.27-11.13, $p=0.016$) significantly increased the occurrence of AF while subjects with low density lipoprotein (LDL) ≥ 100 mg/dl had the inverse relationship (OR 0.29, IK95% 0.11-0.74, $p=0.01$).

Conclusion

Left atrial strain values including contractile and conduit strains can predict the incidence of atrial fibrillation during hospitalisation in IMA-EST patients who have undergone primary PCI. Patients with age ≥ 60 years have a high risk of AF. While the LDL value is inversely correlated with the incidence of AF.

Keywords: left atrial strain, conduit strain, contractile strain, reservoir strain, atrial fibrillation, STEMI, primary PCI, hospitalization.