Mitral Annular Plane Systolic Excursion (MAPSE) as a Predictor of Major Adverse Cardiac Events in Patients with ST Elevation Myocardial Infarction

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Abstract : Background : Mitral Annular Plane Systolic Excursion (MAPSE) is a simple and easily obtained parameter. MAPSE may contribute to the evaluation of left ventricular function. In critical care settings where acoustic windows are often suboptimal, MAPSE seems to be an attractive parameter. A decreased MAPSE is known to be associated with conditions affecting left ventricular function such as myocardial infarction. The prognostic value of MAPSE in patients with ST elevation myocardial infarction (STEMI) has not been studied too much. This study aims to prove whether MAPSE can be used as a predictor of adverse cardiac events (MACE) in patients with STEMI during hospitalized in Haji Adam Malik Hospital Medan. **Methods** : This is a prospective cohort study of 98 patients with STEMI who undergo treatment at Haji Adam Malik Hospital Medan since July 2017 until December 2017. All patients will be examined transthoracic echocardiography to assess MAPSE in 24 hours after patients admitted at this hospital. Patients will be followed during hospitalization to assess MACE. Then conducted analysis to see association between MAPSE and MACE. **Results** : In the ROC curve analysis, the cut-off value of MAPSE in the prediction of MACE was 7.65 mm (AUC 0.904, 95% CI 0.836-0.972, p<0.001). The STEMI group with dengan MAPSE ≤ 7.65 mm had a higher incidence of MACE than the group with MAPSE > 7.65 mm of 35 people (83.3%) versus 7 people (16.7%). MAPSE ≤ 7.65 mm is considered to predict the incidence of MACE with a sensitivity of 83.3%, a specificity of 92.2%, a negative predictive value (NPV) of 88.1% and a positive predictive value (PPV) of 89.7%. Multivariate analysis showed that MAPSE ≤ 7.65 mm was an independent factor that could predict the occurrence of MACE during the hospitalization period (OR 1.886, 95% CI 1.21-2.94, p=0.002). **Conclusion** : MAPSE ≤ 7.65 mm was an independent factor that could predict the occurrence of MACE during the hospitalization in STEMI patients with OR 1.886.
Keyword : MAPSE, MACE, STEMI.

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