

ABSTRACT**ANALYSIS OF *MATRIX METALLOPROTEINASE-9* LEVELS IN PATIENT OF ACUTE HEART FAILURE WITH ACE *INHIBITORS* THERAPY**

Background : Heart failure caused by declining of heart ability to circulate blood, which lead to compensation mechanism. In heart failure, mechanical stretch of myocardium is increased, resulted from neurohormonal activation. MMP-9 is a biomarker of heart failure with myocardial fibrosis. MMP-9 related to inflammation, diabetic microvascular complications, and cardiac dysfunction, eventually leads to *cardiac remodelling*. ACE *inhibitors* is recommended for heart failure, prevent *remodelling* using several mechanism.

Objectives : This study was aimed to analyze the effect of ACE *inhibitors* therapy on MMP-9 level, as a cardiac marker, on inpatients with heart failure.

Methods : This in an observational prospective study using *one group pretest-posttest* design. 23 patients were collected using nonrandom sampling. MMP-9 were measured before and after therapy with ACE *inhibitors*. Ethical Committee of RSUD Dr.Soetomo approved this study. MMP-9 level were examined using ELISA, and statistically processed using Wilcoxon test to compare MMP-9 pre and post level.

Result : There are 23 patients met the inclusion criteria of the study (15 males and 8 females). ACE *inhibitors* used in patients were Captopril (9%), Lisinopril (26%) and Ramipril (65%). MMP-9 level before ACE *inhibitors* therapy was 915.26 ± 260.84 and MMP-9 levels after therapy was 1916.95 ± 383.12 . There were 8 patients (65%) have decreased $> 15\%$. The mean percentage change of MMP-9 was 15%. Analyzed statistic of MMP-9 level were statistically not significant ($p=0.378$).

Conclusion : There was a not significant decreased in MMP-9 level pre and post.

Keyword : MMP-9, Heart Failure, ACE *inhibitors*.