

ANALYSIS OF CHANGES IN THE SERUM LEVEL NT-PROBNP AFTER ACE INHIBITOR THERAPY IN PATIENTS WITH HEART FAILURE

ABSTRACT

BACKGROUND - BNP (*Brain Natriuretic Peptide*) secreted by left ventricle as response to wall stress in patient with heart failure. Elevated concentration of N-terminal pro-brain natriuretic peptide (NT-pro-BNP) correlate with severity of heart failure across all stages of the condition and left ventricle ejection fraction in patient. Several clinical trials have demonstrated convincingly that neurohormonal modulation on the renin angiotensin aldosterone system (RAAS) decreases NT-proBNP level and results in favorable outcomes. One of the drug used for blocked RAAS system is ACE inhibitor, decrease of NT-proBNP level show response to therapy include therapy with ACE inhibitors.

OBJECTIVES - To analyze changes in the levels serum NT-proBNP levels after ace inhibitor therapy in patients with heart failure and monitoring creatinine serum.

METHODS - This study was a observational, prospective, non-randomized trial involving patient age 21-75 years, with heart failure NYHA class II-III, using ACE inhibitor therapy plus other therapy maximum 3 months before study without ARB or beta blocker. We compared serum NT-pro-BNP and creatinin serum parameters before and after 2 months treatment with ACE inhibitor. This study conducted in cardiovascular ambulatory patient dr. Soetomo hospital Surabaya

RESULTS - Between August-November 2015, 13 patient (38-63 years, 6 woman, 7 men) include in this study. The mean baseline level of NT-proBNP is $2166,92 \pm 1236,73$ pg/ml, and creatinin serum $1,023 \pm 0.601$ mg/dL. The NT-pro-BNP were significantly decreased after 2 months of treatment with ACE inhibitors $1508,23 \pm 651$ pg/mL ($p=0,025$; $p<0,05$), there were no significant differences creatinin serum between two groups $0,951 \pm 0.0365$ mg/dL ($p=0,111$; $p>0,05$). The mean percentage change of NT-proBNP was 26,2%.

CONCLUSION - The results demonstrated the benefits of ACE inhibitor on the neurohormonal profile in patients with HF and decrease NT-proBNP level. If necessary we could measure NT-proBNP level to support prognosis data and monitoring effectivity therapy especially ACE inhibitor which had antiremodelling effect towards patients with HF.

KEYWORDS : Natriuretic peptide; NT-proBNP; heart failure; angiotensin-converting enzyme inhibitors