

Laboratory Findings as Predictors of St2 and NT-Probnp Elevations in Heart Failure Clinic, National Cardiovascular Centre Harapan Kita, Indonesia

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Abstract : Nowadays, modern cardiac biomarkers, such as ST2 and NT-proBNP, have important roles in predicting morbidity and mortality in heart failure patients. Abnormalities of serum electrolytes, sepsis or infection, and deteriorating renal function will worsen the conditions of patients with heart failure. It is intriguing to know whether cardiac biomarkers elevations are affected by laboratory findings in heart failure patients. We recruited 65 patients from the heart failure clinic in NCVC Harapan Kita in 2014-2015. All of them have consented for laboratory examination, including cardiac biomarkers. The findings were recorded in our Research and Development Centre and analyzed using linear regression to find whether there is a relationship between laboratory findings (sodium, potassium, creatinine, and leukocytes) and ST2 or NT-proBNP. From 65 patients, 26.9% of them are female, and 73.1% are male, 69.4% patients classified as NYHA I-II and 31.6% as NYHA III-IV. The mean age is 55.7+11.4 years old; mean sodium level is 136.1+6.5 mmol/l; mean potassium level is 4.7+1.9 mmol/l; mean leukocyte count is 9184.7+3622.4 /ul; mean creatinine level is 1.2+0.5 mg/dl. From linear regression logistics, the relationship between NT-proBNP and sodium level ($p<0.001$), as well as leukocyte count ($p=0.002$) are significant, while NT-proBNP and potassium level ($p=0.05$), as well as creatinine level ($p=0.534$) are not significant. The relationship between ST2 and sodium level ($p=0.501$), potassium level ($p=0.76$), leukocyte level ($p=0.897$), and creatinine level ($p=0.817$) are not significant. To conclude, laboratory findings are more sensitive in predicting NT-proBNP elevation than ST2 elevation. Larger studies are needed to prove that NT-proBNP correlation with laboratory findings is more superior than ST2.

Keywords : heart failure, laboratory, NT-proBNP, ST2

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