

## ACUTE DECOMPENSATED HEART FAILURE (ADHF) IN A NON CARDIOLOGY TERTIARY REFERRAL CENTRE - RELATIONSHIP BETWEEN NT-PROBNP AND CLINICAL OUTCOMES

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### Abstract

**Objective** We aimed to explore the association of admission NT-ProBNP with length of hospital stay, inpatient mortality or requirement of advanced tertiary care, 30-day and 90-day composite mortality and readmission outcomes.

**Methods** 68 patients with a primary diagnosis of ADHF were recruited between December 2017 to October 2018 at Sarawak General Hospital. NT-proBNP samples were collected within 24hours from diagnosis. Patients were prospectively followed up for 90 days. Other clinical factors assessed include age, gender, hypertension, diabetes mellitus, dyslipidemia, NYHA, ejection fraction, admission BP and admission heart rate. ROC analysis was applied to determine NT-proBNP level with optimal sensitivity and specificity to the outcomes. Clinical factors were investigated for their role in affecting the discriminative value of NT-proBNP.

**Results** The mean age of patients recruited was 58+/-17years old, 57% were male and admitted for approximately 8 days. 16 (28%) patients recorded at least a prespecified outcome within 90 days. The median value of NT-proBNP was 4115 pg/ml. NT-proBNP has no significant correlation or association with length of stay and inpatient outcome. NT-proBNP was significantly associated with the 30 and 90-day outcomes ( $p=0.050$ ,  $p=0.024$ ) with fairly good discriminative value ( $AUC=0.685$ ,  $0.694$ ). At the level of 3305 pg/ml, NT-proBNP had a sensitivity and specificity for post-discharge outcome of 88%-92% and 51-54% respectively. The discriminative performance of NT-proBNP improved in the subpopulation of patients who were  $\leq 65$  years old, male gender and those with NYHA classification of 3 to 4, respectively ( $AUC$  up to 0.871,  $p=0.004$ ). Patients with NT-proBNP  $>3305$  pg/ml showed 2 to 16 fold increase in risk of developing 30 and 90-day event (95% CI 1.4-110,  $p=0.0003-0.005$ ).

**Conclusion** Admission NT-proBNP, at the cut-off of 3305

pg/ml, is useful in predicting short and medium term cardiac events and hospital readmissions.

**Keywords:** Heart Failure, NT-proBNP, Readmission, Mortality, Outcome

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