

ABSTRACT

Title of Abstract: **Assessment of thrombotic and non-thrombotic troponin elevation (NTTE)**

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Aims:

Assessment of thrombotic and non-thrombotic troponin elevation (NTTE)

Objectives:

- 1) To correlate cardiac troponin T (cTnT) levels in critically ill non-cardiac patients (CINCP) and acute coronary syndrome (ACS) patients with duration of hospitalization, in-hospital and 30 days mortality.
- 2) To describe the range of troponin elevation, positive and negative predictors for NTTE in CINCP stratified according to APACHE II score.

Methods:

This is an observational cross sectional study done in department of Cardiology and Medicine (Critical Care division). 100 patients with ACS admitted in CCU/CPU and 100 CINCP (APACHE II score >12) with elevated cTnT levels admitted to

MICU/MH DU were included in the study. Baseline sample of troponin was sent within 24 hours of admission. Second set of cTnT and CKMB sample was sent within 24 hours of first sample. APACHE II score was calculated within 24 hours of admission in MICU/ MH DU based on worst value up-to that point. Constitutional symptoms, risk factors for coronary artery disease, ECG, Echocardiography & renal parameters were documented.

The data for all groups will be expressed as mean \pm SD. Descriptive analysis was used to find out number and percentages. Categorical values were reported as proportion and percentages and it was compared using Chi-Square test. For continuous variables, mean with standard deviation was used and it was compared using independent sample t-test if normal and Mann-Whitney U test if not normal in Univariate analysis. The variables which were significant at Univariate analysis were taken for Multivariate analysis. Survival analysis was used to find association between in-hospital mortality and troponin levels in thrombotic ACS group and NTTE group.

Results:

In this study troponin levels measured at baseline and within 24 hours of admission were significantly higher in patients who were admitted to MICU with ACS than with NTTE (373.04 \pm 1124.51 vs. 289.16 \pm 1062.26 and 743.31 \pm 1303.90 vs. 258.62 \pm 891.41 respectively; p value= 0.05 and 0.000 respectively). When a troponin level of >300 ng/L was considered along with electrocardiographic and echocardiography abnormality in the presence of chest pain, acute coronary syndrome could be

diagnosed with a sensitivity of 100%, specificity of 77.59%, and Positive Predictive value of 76.36%. Critically ill patients with high troponin levels had early in-hospital mortality. (Pearson co-relation coefficient = -0.068 and -0.072; p value 0.501 and 0.479 respectively). In MICU group there was a positive trend toward increased mortality or re-hospitalization \leq 30 days after discharge with elevated troponin T levels at baseline and within 24 hours of the first sample but this was not statistically significant (p value = 0.157 and 0.564). We found sepsis (77.59%), ARF (68.97%), anemia (43.10%), shock (31.03%), pneumonia (25.86%), ARDS (20.69%), myocarditis (12.07%), CHF (10.34%), tachyarrhythmia (6.9%), CPR (6.9%) as common causes associated with NTTE.

Conclusion:

The study showed that baseline troponin level was significantly associated with in-hospital mortality. In CINCP patients with troponin value >300 ng/L along with chest pain, ECG and ECHO abnormalities; acute coronary syndrome could be diagnosed with reasonable accuracy. The commonest causes of NTTE were renal failure, anemia, sepsis and septic shock.

Key words: Critically ill non cardiac patients, non thrombotic troponin elevation, ACS.