Abstract

Cardiac markers N-terminal pro-brain naturetic peptide, Troponin I and Troponin T levels over the first week and its relation to 30 day survival in ARDS patients with structurally normal hearts.

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Objectives: to evaluate levels of NT Pro-BNP, Troponin I and Troponin T in ARDS patients with structurally normal hearts and to detect the association between these markers with 30 day mortality and other respiratory parameters and scoring systems.

Design: Prospective study.

Setting: Critical Care Medicine Department- Cairo University Hospital.

Patients and Methods: 20 patients diagnosed to have ARDS according to the criteria of the American-European Consensus Conference in 1994 admitted from 1 June 2008 until 1 April 2009. All patients were subjected to APACHE IV on admission, SAPS II on admission, GOCA score on admission, at day 2 and at day 7, transthoracic echocardiography on admission, mechanical ventilation with Lung protective ventilation strategy as well as NT Pro-BNP, Troponin I and Troponin T on admission, at day 2 and at day 7.

Results: NT-Pro-BNP, cTn I and cTnT mean values were significantly lower in survivors group than the nonsurvivors group($p< 0.001$). NT-Pro-BNP was inversely correlated with PH and PaO_2/FiO_2 ratio**.** NT Pro-BNP was positively correlated with PEEP. NT Pro-BNP was not significantly correlated with $PaCO_2$, HCO_3, PaO_2, SaO_2, FiO_2, PAO_2, $P(A-a)O_2$, a/A ratio and lung mechanics including C.dyn , RaW, Ceff,

PIP ,Pplat and Pmean. cTn I and cTn T showed no significant correlation with all above parameters. NT Pro-BNP was positively correlated with APACHE IV, SAPS II and GOCA score. cTn I and cTn T was positively correlated with APACHE IV only. The optimal threshold of NT Pro-BNP was 1200 pg/mL. At this the sensitivity for prediction of 30-day mortality was 100% and the specificity was 86%. cTn I cutoff was 1.5 ng/mL. At this the sensitivity for prediction of 30-day mortality was 100% and the specificity was 57%. cTn T cutoff was 0.5 ng/mL. At this the sensitivity for prediction of 30-day mortality was 100% and the specificity was 43%.
Conclusion: NT Pro-BNP, Troponin I and Troponin T cardiac markers are elevated in ARDS patients with structurally normal hearts. The higher the N-terminal Pro-BNP, Troponin I and Troponin T cardiac markers level during the first week of ARDS, the worse the chance for surviving. NT-proBNP is more accurate in detecting mortality in ARDS than Troponin T and Troponin I.