Abstract

Prediction of hospital outcome in septic shock; comparison of tissue Doppler and different biomarkers

Background: assessment of the diastolic dysfunction by tissue Doppler imaging (TDI) and cardiac biomarkers such as B-type natriutic peptide BNP together can be a good tools for prediction of hospital outcome in septic shock patients **Purpose:** to evaluate and compare the prognostic significance of (TDI) particularly E/é (peak early diastolic transmitral / peak early diastolic mitral annular velocity), cardiac biomarkers (N- terminal proBNP (NTproBNP); cardiac troponin I (cTnI)) and high sensitive C- reactive protein (hs CRP) in septic shock. **Methodology**: twenty eight patients with septic shock were involved in a prospective randomized clinical study (mean age were 62±*9.3* yrs, 62% male) were divided into 2 groups according to mortality and were subjected to all fluid resuscitation, transthoracic echocardiography TTE and laboratory measurement of the mentioned cardiac biomarkers. **Results:** there were 20 pt (71.4 %) died Group A, 8 patients (28.6%) survived Group B. E/é ratio was significantly lower in survivors than non-survivors (8.59± 2.29 vs.12.32± 2.37, *P*- value=0.001), hs CRP was found to be significantly lower between survivals and non survivals (33.49±10.82 vs. 41.65±7.33, *P*-value =0.02). There was a strong positive correlation between E/e' and PMR, (*P*- value=0.002, and r= 0.6). There was a positive correlation between hs-CRP with PMR (*P*-value= 0.01 r=0.4). By cox regression analysis 5 parameters were found to be independent predictors of mortality in septic shock which were: E/e ratio, APACHE IV, SOFA 1, SOFA 3 and DT as P value (0.009, 0.002, 0.003, 0.007 and 0.0001) respectively. **Conclusions:** E/é and DT obtained by PW and TDI both offer independent and better prognostic prediction of hospital outcome in septic shock as compared with cardiac biomarkers (NT,proBNP & cTnI).

Key words: TDI, septic shock, mortality, pro BNP, hs CRP, cTnI