Serum NT-proBNP for Predicting Left Ventricular Systolic Dysfunction in Hospitalized Patients in Sri Lanka

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Limited research has delved into the significance of N-Terminal pro-Brain Natriuretic Peptide (NT-proBNP) in the detection of Left Ventricular Systolic Dysfunction (LVSD) in South Asian populations. Therefore, current observational study was aimed at assessing the use of serum NT-proBNP levels in predicting LVSD in a hospitalised population in Sri Lanka. A random sample of 278 prospective patients referred for echocardiography at Teaching Hospital, Peradeniya provided the consent and venous blood samples were collected for serum NT-proBNP assay by sandwich ELISA method. Then, based on the ejection fraction (LVEF) and fractional shortening (FS), participants were differentiated as LVSD patients (LVEF<50%, FS≤ 29%) and non-LVSD individuals (LVEF>60%). SPSS version 26 was used for results analysis in terms of non-parametric statistical tests. A total of 173 were finally eligible for the analysis, in which 100 were LVSD patients and 73 were non-LVSD individuals. The mean ages of the LVSD and non-LVSD groups were 69.1 (±6.2 years) and 70.8 (±3.8 years) (p=0.718) respectively, suggesting that LVSD is mostly a disease of elderly. The median NT-proBNP value (with IQR) among LVSD patients (528.2 pg/mL,355.2–924.2) was comparatively higher than that of non-LVSD individuals (204 pg/mL,175.5–306.8). NT-proBNP levels gradually increase through non-LVSD, mild, moderate and severe LVSD groups (*Kruskal-Wallis H*(3)=122.6, p<0.001). Strong correlations of log NT-proBNP level with LVEF (Spearman *rho* = -0.859, *p*<0.001), FS (*rho*= -0.812, p <0.001) and LV mass (*rho*= 0.727, p<0.001) suggested that NT-proBNP concentration in serum increases in parallel to deteriorating left ventricular functions. The area under receiver operating curve of serum NT-proBNP for differentiating LVSD was 0.866 (95% CI:0.801 – 0.931) and the optimal cut-off level of NT-proBNP for predicting LVSD was 265pg/mL with 90% sensitivity and 70% specificity. Therefore, the current Sri Lankan study revealed