

Association between admission serum high sensitivity C-reactive protein concentration and risk of developing complications following acute myocardial infarction, in men admitted to a tertiary care centre

C. M. Wickramatilake^{1*}, M. R. Mohideen² and C. Pathirana¹

¹*Department of Biochemistry, Faculty of Medicine, University of Ruhuna, Galle, Sri Lanka*

²*International Medical University IMU Clinical School, Internal Medicine, Batu Pahat Johor, Malaysia*

Elevated high sensitivity C-reactive protein (hs-CRP) levels are associated with coronary artery disease, and raised basal hs-CRP concentration is associated with higher risk of complications of acute myocardial infarction (AMI). The aim of this work was to find out the relationship between hs-CRP and complications of AMI in our setting. Two hundred and six males; 103 patients with first acute ST-elevation myocardial infarction (STEMI) admitted to Coronary Care Unit, Teaching Hospital Karapitiya and 103 controls without coronary artery disease were studied. The complications of STEMI, occurred during the hospital-stay were recorded. Serum basal hs-CRP was estimated by turbidimetry. Continuous variables were compared with two sample-*t* test, and binary logistic regression was used in the analysis of predictors of in-hospital complications. During the hospital stay, 50 (48.5%) patients developed complications, but no deaths were reported. Heart failure was the most common in-hospital complication with 34 (33.0%) patients affected. There were 18 (17.4%) patients with rhythm abnormalities of which four (3.9%) had ventricular fibrillation, nine (8.7%) patients developed mural thrombus and four (3.8%) had cardiogenic shock. The hs-CRP concentration was significantly higher in patients with STEMI than in controls (3.7 ± 0.84 mg/L vs. 1.7 ± 0.60 mg/L, $p=0.001$). The hs-CRP concentration was higher in STEMI patients with complications compared to those without complications (4.0 ± 0.95 mg/L vs. 3.60 ± 0.69 mg/L, $p=0.016$). On admission, basal serum hs-CRP ($p=0.019$, OR=1.85, 95% CI=1.11-3.08), serum cTnI ($p=0.030$, OR=1.01, 95% CI=1.00-1.02) and left ventricular ejection fraction ($p=0.001$, OR=0.9, CI= 0.85-0.95) were strong independent predictors of STEMI complications. On admission (basal) serum hs-CRP concentration was significantly higher in patients compared to controls and was suitable for predicting the complications of STEMI during the hospital stay.

Keywords: Complications, High sensitivity C-reactive protein, Myocardial infarction.

*chandimadhu@live.com