Troponin I blood level value and its utility in differentiating myocardial infarction from pulmonary embolism

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Introduction: Troponin I (trop-I) is considered the most sensitive cardiac biomarker for diagnosis of acute MI. However, it lacks specificity since it can be elevated with other conditions such as pulmonary embolism and non-coronary cardiac disorders.

Aim: The primary objective was to estimate the sensitivity and specificity of trop-I at different level in comparison to the clinical diagnosis. The secondary objectives were to determine any association between trop-I elevation with left ventricular (LV) dysfunction among MI patients and with right ventricular (RV) dysfunction among PE patients.

Method: We performed a retrospective chart review of 122 patients admitted to King Abdulaziz Medical City-Western Region with diagnosis of MI or PE between October 2012 and March 2014.

Results: Among 122 patients included, 64 were diagnosed to have MI and 58 were diagnosed to have PE. The first trop-I blood level value at presentation was higher with MI than with PE, (p-value=0.03). The maximum blood level value of trop-I was also significantly higher in patients with MI, (p-value<0.001). At trop-I blood level of 0.05, the sensitivity was 98.4% and specificity was 84.5%. At the level of 0.1, the sensitivity was reduced to 76.6% but with almost perfect specificity of 98.3%. There was a strong association between post-PE elevation of trop-I and RV dysfunction (p-value=0.002).

Conclusion: The blood level of trop-I may have clinical implication in differentiating MI from PE at the initial presentation. Trop-I level is not associated with LV dysfunction among MI patients, but has strong association with RV dysfunction among PE patients.

Biography
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