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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

Eman Sami Badawod is pursuing her Medical School Graduation at King Abdulaziz University in the year 2016

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