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Significance of Cardiac Troponin T Release in Detecting Minor Myocardial Injury After Percutaneous Transluminal Coronary Angioplasty

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
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Abstract: Cardiac Troponin T (TnT) is a regulatory contractile protein not normally found in blood. Its detection in the circulation has been shown to be a sensitive and specific marker for myocardial cell damage. This study was designed to evaluate the diagnostic efficiency of TnT enzyme immunoassay in detecting myocardial damage in patients with stable angina pectoris undergoing visually successful percutaneous transluminal coronary angioplasty (PTCA) and to compare this newly developed test with the conventionally used cardiac enzyme tests. The study population consisted of 24 patients (3 females and 21 males) with a mean age of 55 ± 9 years. Serial blood samples were drawn for measurement of serum Tn T, CPK and CK-MB activities before the PTCA procedure and at the 4th, 8th and 16th hours thereafter. At the same time, ECG was also recorded. We used an enzyme immunologic assay for the quantitative determination of serum Tn T and enzymatic methods for CPK and CK-MB. Tn T levels >0.2 ng/ml, CPK levels >190 U/L and CK-MB levels >24 U/L were assumed to be an abnormal increase and indicative of myocardial injury. None of the patients showed either ECG evidence of myocardial infarction or CPK elevation. However, Tn T was elevated in 15 of 24 patients (62.5%) while CK-MB was elevated in only 6 of them (25%), whose Tn T levels were also elevated. Patients with elevated Tn T and CK-MB did not differ from the others with respect to demographic data or in the PTCA procedure. Serum Tn T and CK-MB levels were more elevated in patients with type C (morphologically complex) and multivessel lesions. The results of this study demonstrate the high diagnostic sensitivity of Tn T versus CK-MB and CPK in detecting minor myocardial damage after successful PTCA.

Key Words: Troponin T, percutaneous transluminal coronary angioplasty

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