SIGNIFICANCE OF CARDIAC TROPNON T LEVELS IN SUPRAVENTRICULAR TACHYCARDIA

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Background: Cardiac troponin T is sensitive and specific markers of myocardial injury and is used routinely for the diagnosis of acute coronary syndrome. Recently, the magnitude of troponin T levels in heart failure patients has been reported to correlate with severity of the disease and with adverse outcomes. They may suggest ongoing myocardial damage. In supraventricular tachycardia, common atrial flutter (AFL) and atrial tachycardia (AT) often produce changes in cardiac function and structure, but atrioventricular nodal reentrant tachycardia (AVNRT) and atrioventricular reentrant tachycardia (AVRT) do not. To our knowledge, there are no reports about the relationship between the levels of troponin T and the types of supraventricular tachycardia. We examined the clinical usefulness of previously unmeasurable levels of troponin T (hs-TnT) by using highly sensitive assay for the differential diagnosis of supraventricular tachycardia.

Methods: Ninety eight patients admitted for catheter ablation of supraventricular tachycardia were divided into two groups. Fifty five patients were PSVT group (AVNRT and AVRT patients) and 44 were AF group (AFL and AT patients). We measured hs-TnT, atrial natriuretic peptide, brain natriuretic peptide, echocardiographic data, and basic laboratory data before procedure. The lower detection limit for hs-TnT was 0.003 ng/mL. The median value in detectable hs-TnT was 0.008 ng/mL in our study. Hs-TnT levels were classified into three groups as follows: (1) < 0.003 ng/mL, (2) 0.003 to 0.008 ng/mL, and (3) ≥ 0.008 ng/mL.

Results: Hs-TnT, atrial natriuretic peptide, brain natriuretic peptide, left atrial size, age, serum creatinine and history of hypertension in AF group were significantly higher than those in PSVT group. Ejection fraction in AF group was lower than that in PSVT group. In a multivariate analysis, hs-TnT, atrial natriuretic peptide, and left atrial size were independent predictors for AF.

Conclusions: Hs-TnT levels in patients with supraventricular tachycardia were higher in those with AT and AFL than AVNRT and AVRT, suggesting that functional and structural remodeling may be associated with AT and AFL.