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Chronic CAD/Stable Ischemic Heart Disease

A REAL WORLD COMPARISON BETWEEN THE ABBOTT TROPONIN-I AND THE ROCHE TROPONIN-T ASSAYS IN THE ASSESSMENT OF ACUTE MYOCARDIAL INJURY

Poster Contributions
Poster Sessions, Expo North
Saturday, March 09, 2013, 3:45 p.m.-4:30 p.m.

Session Title: What's New with Risk Stratification in SIHD: Biomarkers, Genes and ECG
Abstract Category: 10. Chronic CAD/Stable Ischemic Heart Disease: Clinical
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Background: Accurate evaluation of biomarkers of acute myocardial injury is important. Both troponin-I and troponin-T are validated markers, but often only one or the other is available on any specific blood analysis platform. It is important to know the performance of each before choosing an institutional standard.

Methods: At Intermountain Medical Center, simultaneous results of the Roche platform troponin-T assay were compared to the existing standard Abbott platform troponin-I assay on 3,306 consecutively ordered clinical samples in 1,860 individual patients. Sensitivity and specificity for both troponin-I and troponin-T were calculated using the other assay as the imputed gold standard, based on the recommended normal range of ≤0.04 ng/mL and <0.03 ng/mL for troponin-I and troponin-T respectively. Additionally, chart review was performed on all patients in which the initial results of troponin-T were normal but troponin-I was elevated, or vise versa, results were categorized into four categories: 0=unassociated diagnosis, 1 = definite/high probability acute coronary syndrome (ACS), 2 = possible ACS; 3 = non-ACS diagnosis associated with myocardial injury.

Results: Over-all 1,005 (30.4%) and 854 (25.8%) of samples for troponin-I and troponin-T, respectively, were elevated. Sensitivity and specificity of troponin-T, using troponin-I as the gold standard were 0.76 and 0.96, respectively, and conversely, sensitivity and specificity of troponin-I, using troponin-T as the gold standard were 0.89 and 0.90, respectively. Categorization of the 139 (7.5%) patients in which troponin-T was normal but troponin-I was elevated revealed category 0: n=20 (14.4%); category 1: n=33 (23.7%); category 2: n=31 (22.3%); category 3: n=55 (39.6%). For the 67 (3.6%) patients with troponin-I normal and troponin-T elevated, categories were: 0: n=51(76.1%); 1: n=2(3.0%); 2: n=6(9.0%); 3: n=8(11.9%).

Conclusions: In this comparison, troponin-I was significantly more sensitive and nearly as specific as troponin-T. Clinical chart review of patients with troponin-T/troponin-I discordance generally supported the results of troponin-I. These findings may limit the utility of this troponin-T assay.