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Acute Coronary Syndromes

COMPARISON OF HIGHLY SENSITIVE TROPONIN I AND T RESULTS IN THE DIAGNOSIS OF ACUTE MYOCARDIAL INFARCTION

Moderated Poster Contributions

Poster Sessions, Expo North

Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: High Sensitivity Troponins: New Insights

Abstract Category: 1. Acute Coronary Syndromes: Clinical

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Background: The performance of highly sensitive troponin assays in the early detection of acute myocardial infarction (AMI) in patients presenting to the emergency department (ED) with chest pain is assay-dependent. The aim was to compare the diagnostic accuracy for AMI of highly sensitive troponin I (hsTnI) and T (hsTnT) at zero and two hours after ED arrival.

Methods: A prospective study recruited patients with symptoms of possible acute coronary syndrome (ACS). Bloods were sampled at zero and two hours after ED arrival. The diagnostic accuracy of hsTnI (ARCHITECT High Sensitive STAT Troponin-I assay, Abbott Laboratories) and hsTnT (TroponinT hs CS Elecsys, Roche Diagnostics) were compared using their 99th percentile cut-off of 26.2ng/L and 14ng/L respectively. The reference standard was the diagnosis at presentation as adjudicated by two independent cardiologists following the patients' hospital discharge and using all available clinical data including cTnI at 0 and >6hrs following presentation. The results of the investigational assays were not used for adjudication of endpoints.

Results: 737 patients [male 60.1%, median (IQR) age 54 (44-65) years] were recruited including 51 (6.9%) with AMI. 93 (12.6%) had an elevated hsTnI at either zero or two hours while 128 (17.4%) had an elevated hsTnT. At zero and two hours, the AUCs for hsTnT were 0.94 and 0.96 respectively and the AUC for hsTnI were 0.97 and 0.98 respectively. There was no difference in the sensitivity of hsTnT and hsTnI at zero (0.86 vs 0.88, $p=1.0$) and zero or two hours (0.95 vs 0.92, $p=1.0$). However, the specificity of hsTnI was higher than hsTnT at zero hours (0.95 vs 0.89, $p<0.01$) and at zero or two hours (0.93 vs 0.88, $p<0.01$).

Conclusion: The diagnostic performance of hsTnI and hsTnT showed that they were equally sensitive for rule-out of AMI at two hours. hsTnI was more specific for the early diagnosis of AMI.