Acute and Stable Ischemic Heart Disease

DOES 3-HOUR POINT OF CARE TROPONIN I PREDICT 6-HOUR POINT OF CARE TROPONIN I FOR PATIENTS IN A CHEST PAIN UNIT

Poster Contributions
Poster Hall, Hall C
Friday, March 17, 2017, 10:00 a.m.-10:45 a.m.

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Background: In the United States, there are over 6 million visits to the emergency room annually with complaints of chest pain. It is important to quickly triage those patients that may be experiencing acute coronary syndrome from those that may be appropriate for safe and early discharge. Many clinicians require a normal troponin 6 hours after hospital presentation for safe discharge. We sought to determine if a normal 3-hour point of care (POC) troponin I adequately predicts a normal 6-hour POC troponin I.

Methods: This retrospective cohort study was undertaken in a single-center emergency department within an academic tertiary hospital. We evaluated 1658 consecutive patients brought to the chest pain unit (CPU) from February 2013 to February 2014. For our study, we included patients aged 18 years or older, Thrombolysis in Myocardial Infarction (TIMI) score <3, adequate renal function defined as creatinine < 1.5mg/dL, and troponin I drawn at 3 hours after presentation. The primary end point was the incidence of a positive 6-hour POC troponin I after a negative 3-hour POC troponin I. The secondary end point was to evaluate for 30-day major adverse cardiac events (MACE) including percutaneous coronary intervention (PCI), coronary artery bypass surgery (CABG), malignant arrhythmias and death.

Results: Of the 1658 patients brought to the CPU, 944 patients met inclusion criteria. Three of these patients had a positive 3-hour POC troponin I. Of the remaining 941 patients, three of these patients went on to develop a positive 6-hour POC troponin I (0.003%). Two of these patients experienced a MACE, one PCI and one CABG, within the next 30 days.

Conclusions: In this low risk population, a negative 3-hour POC troponin I predicted a negative 6-hour POC troponin I 99.7% of the time. Despite the robust negative predictive value, half of the patients who had a positive troponin developed it at the 6-hour mark and the rate of MACE in this group is high. These results should instill caution in the era of shorter evaluations and larger studies should be performed to better characterize outcomes.