**High Sensitive Troponin Assay - Helpful or Misleading?**

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Background: Cardiac Troponin is considered a specific and sensitive marker for the diagnosis of acute coronary syndrome (ACS). In the last years, a high sensitive Troponin-T kit (HSTT) allows detection of very low levels of troponin, thus increasing test sensitivity. Nevertheless this test might detect elevated troponin in patients without ACS.
Aim: To evaluate the effect of the utilization of HSTT on the diagnostic accuracy of ACS.
Method: We assessed all consecutive patients with low positive HSTT levels (0.03-0.1ng/ml) during one month (8/9/2010-8/10/2010). Demographic and clinical data were collected and death at 1-year follow up was recorded. The main complaints on admission and final diagnoses on discharge for each patient were re-evaluated from computerized medical records. Positive predictive value (PPV) for ACS diagnosis was calculated.
Results: During the study period 302 low positive HSTT results were found in 179 patients. Mean age was 75.6 years, 102(57%) were males, 47% had history of CAD and 66.6% had renal failure. Only 43(24%) patients were admitted because of chest pain and no more than 24 had a final diagnosis of ACS, making the PPV of HSTT for the diagnosis of ACS only 0.13. In patients with chest pain the PPV of HSTT was 0.4 while in patients without chest pain the PPV was as low as 0.05! One year mortality in the study group was relatively high (35.5%), with no significant difference between patients with or without ACS.
Conclusion: The implementation of the high sensitive troponin assay results in high rate of positive troponin without evidence of ACS. The predictive value of low positive HSTT for the diagnosis of ACS is very low, particularly in patients who do not complain of chest pain. Low positive HSTT (<0.1ng/ml) might be misleading and clinicians should avoid using it as a screening tool when clinical presentation is not suggestive of ACS.