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Research reveals Beckman Coulter's Access hsTnI's diagnostic accuracy

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First study to validate Access hsTnI's clinical performance within five established accelerated diagnostic pathways for the assessment of patients with symptoms suggestive of ACS in 2 hours.

A recent article in the Annals of Emergency Medicine reported on the diagnostic accuracy of the newly released Beckman Coulter Access hsTnI assay in expediting the emergency department (ED) disposition for patients evaluated for suspected acute coronary syndrome (ACS).

This group of experts confirmed that using serial Access hsTnI results (at 0 and 2 hours) in conjunction with the clinical history and ECG results collected in five accelerated diagnostic pathways can safely discharge one-third of ED patients with no further testing using the new Vancouver Chest Pain and No Objective Testing pathways, and can refer more than half of ED patients for objective testing in the EDACS, m-ADAPT and HEART pathways.

In 2015, the European Society of Cardiology (ESC) published their new clinical guidelines for the management of ACS in patients presenting without persistent ST-segment elevation.

The 2-hour rule-out protocol, first investigated by the same expert group, was recommended by the 2015 ESC guidelines for rapid rule-out by combining the risk score with ECG and hsTnI results.

This study validated Access hsTnI's clinical performance in the existing 2-hour diagnostic pathways for suspected ACS patients, using the Access hsTnI's 99th percentile upper reference limit from Beckman Coulter's assay insert as the clinical cutoff value in accordance with international guidelines.

The investigators from Royal Brisbane and Women's Hospital performed a comparison between five accelerated diagnostic pathways using patient data from the Australian cohort of the ADAPT study and the Improved Assessment of Chest-pain trial. Access hsTnI was measured with presentation and 2-hour blood samples in more than 1,800 patients. The eligible patient cohort is young, with a low prevalence of acute myocardial infarction (AMI, 5.3%) and ACS (7.7%).

The study confirms that Access hsTnI provides similar sensitivity, when used in the accelerated diagnostic pathways, compared to previously investigated high-sensitivity assays. The results show that the new Vancouver Chest Pain Rule and No Objective Testing Rule can safely rule out low-risk ACS patients (28.2% and 34.5%, respectively) within two hours when used in conjunction with Access hsTnI. No cases of AMI were detected in these low-risk patients in the 30-day follow-up. The use of sex-specific cutoff values had minimal effect on the results.

ACS has been a huge healthcare burden in many countries. It is estimated more than 5.5 million people present to ED each year with chest pain while only 13% have a final diagnosis of ACS. This study suggests adding Access hsTnI to existing diagnostic pathways can improve resource use in chest-pain evaluations.