Editorial

Use of High Sensitivity Cardiac Troponin for Diagnosing Acute Myocardial Infarction

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Today’s highly sensitive cardiac troponin (hsTn) assays can detect circulating levels of cardiac troponin in most healthy individuals, with reasonable precision. This has both positive and negative implications for clinicians. The positive is that these assays are able to detect even minute myocardial damage at an earlier timepoint, and to provide clinicians with more accurate information. On the other hand, it has also made the diagnosis of myocardial infarction (MI) more complicated. Diagnosing an MI is no longer a simple “yes/no” matter based upon whether a troponin level is positive or not. In order to diagnose an MI, physicians must also evaluate both the pattern of troponin elevation, and the clinical scenario.

Obtaining serial troponin measurements is fundamental to evaluating a patient with suspected MI. A diagnosis of MI requires not only that a troponin level is elevated, but also that there is a rising and/or falling pattern. The presence of this rising or falling pattern is even more critical when high sensitivity assays are used, due to the fact that a number of chronic conditions and comorbidities can cause elevated, albeit stable, troponin levels. These must be distinguished from individuals with an acute thrombotic event, also known as a ‘Type I MI’.

Although troponin assays remain the anchor in determining whether a patient has an MI, it is critical that clinicians look at the whole clinical picture. Besides the biomarker abnormalities, diagnosis of an acute MI also requires at least one of the following: (1) Symptoms of ischemia; (2) Suggestive electrocardiogram changes, including new significant ST-segment and T-wave changes, new left bundle branch block, or development of new pathological Q waves; (3) Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality; or (4) Identification of an intracoronary thrombus by angiography or autopsy.

Adhering to the above Universal Definition of MI will ensure that physicians can reap some of the benefits of the emerging hsTn assays, without succumbing to the pitfalls of overdiagnosis.

Keywords: Troponin; Myocardial infarction / diagnosis; Coronary disease

Potential Conflicts of Interest
I hereby declare that there are no material conflicts of interest.

Reference