

# USING HIGH SENSITIVITY CARDIAC TROPONIN ASSAYS IN PRACTICE

## **Changing values suggest acute myocardial injury. However, acute myocardial injury is not always an Acute Myocardial Infarction (AMI) <sup>1</sup>**

Distinguishing acute from chronic c-Tn elevations using high sensitivity assays requires serial measurements to detect significant changes.

### **Key components for detecting rising and/or falling values are:**

Obtain samples for cTn on admission and as clinically indicated. At present 3 hour intervals seems most reasonable.<sup>2</sup>

A change in values (delta) can be reported as a percentage or absolute concentrations between serial measurements.

Deltas must be calculated with values from the same cTn assay.<sup>3</sup>

### **Key considerations for interpreting deltas:**

The larger the delta, the higher the specificity (i.e., the lower the sensitivity) for acute cardiac injury, including AMI.<sup>4</sup>

The lower the delta, the higher the sensitivity (i.e., the lower the specificity) for acute cardiac injury, including AMI.<sup>4</sup>

Delta values are dependent on the cTn assay used and the timing interval used.

All groups involved in the clinical care of patients should decide conjointly about what criteria should be used and possible exceptions to their use.

### **AMI diagnosis**

AMI is an appropriate diagnosis if there is a change in cTn values measured with high sensitivity assays of a magnitude appropriate for the assay being used with at least one result exceeding the 99<sup>th</sup> percentile in the appropriate clinical situation.<sup>1</sup>

### **Practical tips**

Correlate the cTn values with the clinical characteristics of the patient.

Recent reports suggest that an absolute delta (in ng/L) may be superior to a relative (percent) delta<sup>5,6</sup>.

Patients who present late after AMI may not manifest a change in values.<sup>7</sup>

When in doubt, obtain additional data including further serial hs-cTn results, as appropriate.

At present, it appears that in some patients, clinical judgement will be necessary to modify and/or augment the results of delta calculations.<sup>3-7</sup>

To date, there is no expert consensus guidance on a procedure for establishing or confirming delta values. Until this is available, institutions should agree on a delta value based on available data (peer-reviewed journals, manufacturer's documentation), for individual cTnI and cTnT high sensitivity assays and then modify based on experience and feedback.

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## References

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