



# Fact Sheet

## Point of Care Testing for cardiac Troponin T (AQT90)

Your local facility has recently introduced Point of Care Testing (PoCT) for cardiac Troponin T (cTnT). The local laboratory will continue to provide cTnT testing. While there are similarities between the two forms of testing, there are some important differences to be aware of and that may impact the interpretation of test results:

- **The PoCT cTnT and laboratory based hs-cTnT test results are not directly comparable and therefore results measured on the PoCT device should not be interpreted in the same way as the laboratory based hs-cTnT assay.**
- The clinical decision point for POCT cTnT assays is **17 ng/L**.
- In accordance with the NSW Health Chest Pain Pathway, the baseline PoCT cTnT test must be followed up with a second cTnT test, preferably on the same device, to meet the Universal Definition of Myocardial Infarction (see below).
- For POCT cTnT test, the retest interval should be at 6-8 hours after the first blood draw. POC troponin results cannot be used in accelerated ACS diagnostic pathways!
- If a patient is transferred in the follow-up period to a hospital where a different cTnT or Troponin I assay is available, the baseline PoCT cTnT data cannot be used for assessing the magnitude of change of Troponin T.
- In such cases, collect a new baseline sample and a second sample at 2-3 hours (if testing with a highly sensitive troponin assay) and 6-8 hours (if testing with a less analytically sensitive assay) unless the patient has been symptom-free for >12 hours, when a single sample is appropriate.

### Interpretation of cardiac Troponin results:

- Elevation of cTnT is a highly specific marker of myocardial damage.
- According to an Expert Consensus, the Universal Definition of Acute Myocardial Infarction is: "In a clinical setting consistent with acute myocardial ischaemia.....detection of a rise and/or fall of cardiac Troponin.....with at least one value above the 99<sup>th</sup> percentile of a reference population" (*Thygesen et al. JACC 2012;60(16):1581-98*).

### Table 1: Causes of increased Cardiac Troponin T

<ul style="list-style-type: none"> <li>• Acute Myocardial Infarction</li> <li>• Tachy or bradyarrhythmias</li> <li>• Aortic dissection or severe aortic valve disease</li> <li>• Severe hypo or hypertension, e.g. haemorrhagic shock, hypertensive emergency</li> <li>• Acute or chronic heart failure</li> <li>• Hypertrophic cardiomyopathy</li> <li>• Coronary vasculitis, e.g. SLE, Kawasaki synd.</li> <li>• Coronary artery spasm, e.g. cocaine</li> <li>• Severe pulmonary embolism or pulmonary hypertension</li> <li>• Dialysis dependent renal failure</li> </ul>	<ul style="list-style-type: none"> <li>• Cardiac contusion or surgery</li> <li>• Rhabdomyolysis with cardiac involvement</li> <li>• Myocarditis, severe sepsis</li> <li>• Cardiotoxic agents, e.g. anthracyclines, CO poisoning</li> <li>• Severe burns affecting &gt; 30% body surface</li> <li>• Severe acute neurological conditions, e.g. stroke, trauma</li> <li>• Infiltrative diseases, e.g. amyloidosis, sarcoidosis</li> <li>• Extreme exertion, e.g. marathon running</li> <li>• Frequent defibrillator shocks</li> </ul>
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Table from: Jones GDR, Finckh A, Wilson S. *Introducing Highly Sensitive Troponin into Routine Use - A Worked Example. The Clinical Biochemist Reviews Troponin Monograph 2012; pp97-102.*