HIGH SENSITIVITY (HS) TROPONIN

In March 2019, Dorevitch Pathology will change their Troponin I assay to a new Beckman hs-Troponin I assay. This will enable earlier diagnosis of acute myocardial infarction (AMI).

WHAT'S NEW

- Troponin will be reported in ng/L instead of ug/L (for example, a result of 0.05 ug/L in the old units will become 50 ng/L)
- The reference intervals will be 0-10 ng/L for women and 0-20 ng/L for men
- If the diagnosis is not clear, repeat testing is recommended at 3-6 hours
- If Troponin is repeated within 24 hours, the report will show
  - The time since the last Troponin
  - The change in Troponin concentration
  - The Z-score to indicate whether the change is significant
  - Z-score > ± 2.0 indicates a 95% likelihood the change is significant
  - Z-score > ± 3.0 indicates a 99% likelihood the change is significant
- Results will be flagged abnormal if:
  - Serum Troponin >10 ng/L in a woman or >20 ng/L in a man
  - The Z-score for serial tests is > ± 2.0

SAMPLE PATHOLOGY REPORT WITH SERIAL TEST

This report is from a woman (reference interval < 11 ng/L) with an abnormal result. She had a normal result 4.5 hours earlier and the Troponin increased by 10 ng/L.
The Z-score > 3.0 indicates that there is a >99% likelihood that this change is significant.

SERUM / PLASMA HIGH SENSITIVE TROPONIN

Trop I (Beckman) : 18 ng/L (<11) *
Time since the last Troponin collection : 4.5 hours
CHANGE in Troponin since last specimen : 10 ng/L
Z-score : 3.42 *

OTHER CAUSES OF RAISED HS-TROPONIN

Increased hs-Troponin may be seen in a variety of non-ACS (acute coronary syndrome) conditions causing heart muscle injury. These can be differentiated by history and serial testing. Causes of raised hs-Troponin include:

Heart failure	Cardioversion	Renal failure, dialysis	Severe exercise
Respiratory failure	Structural heart disease	Hypotension, shock	Pulmonary embolism
Sepsis	Cardiac injury	Coronary artery spasm	Stroke
Severe hypertension		Peri-myocarditis	
Tachyarrhythmias		Cardiomyopathy	

TROPONIN TESTING IN GENERAL PRACTICE

Patients with suspected acute coronary syndromes (ACS) should be sent to hospital without delay. Troponin testing in general practice should only be considered if:

- NO chest pain for at least 24 hours
- NO high risk features (syncope, heart failure, abnormal ECG)
- The result will alter patient management
- The doctor's mobile phone number is written on the request form.

Following up abnormal results is the responsibility of the requesting doctor.

CHANGE IN ABBOTT I-STAT TROPONIN CUT-OFF

The Abbott i-STAT is a point-of-care device that is used in centres with limited access to a laboratory. The cut-off for i-STAT Troponin will change from 0.08 to 0.04 ug/L to give better alignment with the hs-Troponin assay.

While the i-STAT is very reliable and easy to use, i-STAT Troponin is less sensitive than the new Beckman hs-Troponin assay. If the diagnosis is not clear, repeat testing is recommended after 6-12 hours.

Troponin results from different methods should NOT be directly compared because there is no uniform standardisation of Troponin assays.

FOR FURTHER INFORMATION PLEASE CONTACT ONE OF OUR CHEMICAL PATHOLOGISTS

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