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.

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**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:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Lab Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart failure</td>
<td>Cardioversion</td>
<td></td>
</tr>
<tr>
<td>Respiratory failure</td>
<td>Structural heart disease</td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>Cardiac injury</td>
<td></td>
</tr>
<tr>
<td>Severe hypertension</td>
<td>Peri-myocarditis</td>
<td></td>
</tr>
<tr>
<td>Tachyarrhythmias</td>
<td>Cardiomyopathy</td>
<td></td>
</tr>
</tbody>
</table>

**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.

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**SERUM / PLASMA HIGH SENSITIVE TROponin**

<table>
<thead>
<tr>
<th>Assay</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trop I (Beckman)</td>
<td>18 ng/L (&lt;11)</td>
</tr>
<tr>
<td>Time since the last Troponin collection</td>
<td>4.5 hours</td>
</tr>
<tr>
<td>CHANGE in Troponin since last specimen</td>
<td>10 ng/L</td>
</tr>
<tr>
<td>Z-score</td>
<td>3.42 *</td>
</tr>
</tbody>
</table>

**FOR FURTHER INFORMATION PLEASE CONTACT ONE OF OUR CHEMICAL PATHOLOGISTS**

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