Alberta Public Laboratories (APL)

Laboratory Bulletin

Date: May 13, 2019
To: All Calgary Zone Physicians and Healthcare Providers
From: Dr. S.M. Hossein Sadrzadeh, Clinical Section Chief, Clinical Biochemistry South Sector
Re: **Availability of High Sensitivity Troponin I (hsTnI) at 6 Sites in Calgary Zone**

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Key Message:

- **Effective May 14, 2019**, high sensitivity troponin I (hs-TnI) will replace the current conventional TnI assay at the following sites due to discontinuance of the conventional TnI on the bioMérieux MINI VIDAS®:

    1. Airdrie Community Health Centre
    2. Cochrane Community Health Centre
    3. Okotoks Health and Wellness Centre
    4. Sheldon M Chumir Health Centre,
    5. South Calgary Health Centre, and
    6. Banff Mineral Springs Hospital

- The use of hsTnI will result in changes in reporting interpretation (new reference interval, critical value and units), and updated Urgent Care and Rural Hospital *Vidas hs-cTnI Chest Pain Pathway* (https://insite.albertahealthservices.ca/Main/assets/tms/edc/tms-edc-biomerieux-hs-ctnI-pathway-2019.pdf) and reporting comments (Table 1)
    - New reference interval: 0 – 18 ng/L
    - New critical value: >= 100 ng/L
    - No change to orderable test name: Troponin
    - New result test name in NetCare: Troponin I (Vidas) High Sensitivity
- Calgary acute care hospitals continue to use hs-TnT and reporting will not change

Why this is important:

- Availability of hsTnI at these sites will better support clinicians in evidence-based interpretation of their troponin result and improve patient management
- Recognize that **hs-TnI results are NOT interchangeable with conventional TnI, or with hsTnT**

Background:

- While hs-TnI offers improved diagnostic performance relative to conventional troponin assays, hs-TnI results alone cannot exclude all acute coronary syndrome presentations and high-risk clinical presentations remain high-risk, even if hs-TnI concentrations are normal
- Abnormal elevations in hs-TnI do not necessarily represent acute myocardial injury or coronary ischemia; clinical judgment remains essential to ensure safe patient management

Action Required:

- All users of hs-TnI at the 6 affected sites in the Calgary Zone should familiarize themselves with the Urgent Care and Rural Hospital *Vidas hs-cTnI Chest Pain Pathway* and accompanying comments
- Be aware of differences between hs-TnI and hs-TnT for reference intervals and critical values, as result interpretation will change by test

Inquiries and feedback may be directed to:

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This bulletin has been reviewed and approved by:

Leland Baskin, MD, MS, FCAP, FAACC, Associate Medical Director, South Sector

Table 1: Updated bioMérieux MINI VIDAS® hsTnI Reporting

Current Reporting	New Reporting
Troponin I <0.01 µg/L Troponin I value not consistent with AMI, providing the sample was collected > 6h from onset of symptoms	**Vidas Troponin I, High Sensitivity < 6 ng/L** For patients with a non-ischemic ECG, a Troponin I, High Sensitivity of 5 ng/L or less on presentation AND at 2-hours is highly sensitive for excluding acute myocardial infarction. Please note that patients with ischemic ECG changes and/or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results.
Troponin I 0.01 – 0.10 µg/L Troponin I value is inconclusive for acute MI and may be due to myocardial injury. Repeat ordering may be warranted in some clinical situations.	**Vidas Troponin I, High Sensitivity 6 -18 ng/L** Troponin I, High Sensitivity is below the upper reference limit (19 ng/L) and results are not consistent with myocardial infarction or injury. However, patients with acute symptoms (less than 6-hours since onset) or concerning clinical presentations should undergo repeat troponin testing at 2-hours after the initial sample. A 2-hour change of 10 ng/L or more suggests an acute myocardial injury and may represent acute myocardial infarction in the appropriate clinical scenario. Please note that patients with ischemic ECG changes and/or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results.
N/A	**Vidas Troponin I, High Sensitivity 19-99 ng/L** Troponin I, High Sensitivity has a non-specific/non-diagnostic elevation. Interpretation is highly dependent on clinical presentation and patient history. New elevations are concerning; however, many patients have chronic elevations in troponin and measured concentrations near the patient's baseline are reassuring. Repeat troponin testing at 2-hours after the initial sample is recommended to assess for active myocardial injury. A 2-hour change of 10 ng/L or more suggests an acute myocardial injury and may represent acute myocardial infarction in the appropriate clinical scenario. Please note that patients with ischemic ECG changes and/or high-risk clinical presentations should be considered for further evaluation irrespective of troponin results.
Troponin I >0.10 µg/L Troponin I value is consistent with acute myocardial damage.	**Vidas Troponin I, High Sensitivity >=100 ng/L** Clear elevation of Troponin I, High Sensitivity consistent with acute myocardial injury or infarction in the appropriate clinical context. Repeat troponin testing at 2-hours after the initial sample may be helpful to assess for ongoing myocardial injury.