EMERGENCY DEPARTMENT ONLY
(Beckman Coulter UniCel DxI analyzer)

Follow STEMI protocol

Acute CP / ischemic equivalent

ECG meets STEMI criteria

Presenting ECG

New acute signs of ischemia

No significant ST deviation

SXS ≥ 3 hrs &
HEART score 0-3 &
0h Trop < 5 ng/L

HEART score 0-6 &
0h Trop < 5 ng/L &
1h delta < 5 ng/L

HEART score 0-6 &
All Trops < 15(F)/20(M) &
No delta³ > 5 ng/L

SXS < 3 hrs; OR
HEART score ≥ 4; OR
0h Trop ≥ 5 and < 100 ng/L

0h Trop ≥ 100 ng/L

Draw 0h hs-Tnl

Draw 1h hs-Tnl

Draw 3h hs-Tnl

HEART score ≥ 7; OR
0h Trop ≥ 5 ng/L and < 100 ng/L; OR
1h delta ≥ 5 and < 15; OR

Any Trop ≥ 100; OR
1h delta ≥ 15 ng/L

Any Trop ≥ 100; OR
Any delta³ ≥ 25 ng/L

Low Risk
- Consider discharge and OP follow-up

Intermediate Risk
- Consider:
  - Shared decision making
  - OP follow-up for HEART score 0-3
  - Observation and stress testing / CTA
  - If hs-Tnl 50-100 and high suspicion for NSTEMI, may manage as high-risk

High Risk
- Consider:
  - Cardiology consult
  - Admission
  - Follow treatment guidelines for most likely diagnosis (Type 1 NSTEMI, Type 2 MI, or nonischemic myocardial injury)

Footnotes:
1. Beckman UniCel DxI Access analyzer “abnormal” (>99th percentile) cut points: >14.9 mg/L (women); >19.8 ng/L (men)
2. Refers to acute findings not seen on prior ECGs, and not associated with LVH, LBBB, RBBB, or early repolarization
3. “No delta”, “All deltas”, or “Any delta” includes 0→1h, 1→3h, and 0→3h changes in hsTnI

Grady, EUH, EUHM, ESJH, EJCH
hs-troponin I clinical protocol

Copyright © Emory Healthcare 2021 – All rights reserved
Summary of dispositions:

<table>
<thead>
<tr>
<th>Discharge:</th>
<th>Admit / consult:</th>
<th>Intermediate risk (CDU or Shared Decision Making):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms &gt;3hr, initial hsTn &lt;5,</td>
<td>• Usual indications (STEMI, etc.)</td>
<td>• hsTn between normal* and 50</td>
</tr>
<tr>
<td>HEART score &lt;4</td>
<td>• Any hsTn delta &gt;25</td>
<td>• hsTn between normal* and 100 and <strong>low</strong></td>
</tr>
<tr>
<td>Initial hsTn &lt;5, 1hr delta &lt;5,</td>
<td>• Any hsTn &gt;100 (T0hr, T1hr, or T3hr)</td>
<td>suspicion of ACS</td>
</tr>
<tr>
<td>HEART score 0-6</td>
<td>• hsTn of 50 – 100 (indeterminate range) with high suspicion for ACS</td>
<td>• hsTn delta between 5 – 25 (5-15 at 1hr)</td>
</tr>
<tr>
<td>0, 1, 3hr hsTn normal*, all</td>
<td></td>
<td>• HEART score &gt;3 with clinical concern</td>
</tr>
<tr>
<td>deltas &lt;5, HEART score &lt;7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate risk and shared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decision making chooses home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with outpatient follow-up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Normal = 99%ile, sex based = <15(F) / <20(M) ng/L hsTn levels above are in ng/L
LOW RISK
• Consider discharge and OP follow-up

HEAR(T) Score

Symptoms

0 hour HS-Trop

1 hour HS-Trop

3 hour HS-Trop

0-3

<3 hour

4-6

<3 hour

∆ <5

<5

All <15 (F), <20 (M) and ∆ <5
INTERMEDIATE RISK

Consider:
- Shared decision making
- OP follow-up for HEART score 0-3
- Observation and stress testing / CTA
- If hs-Tnl 50-100 and high suspicion for NSTEMI, may manage as high-risk
HIGH RISK
Consider:
• Cardiology consult
• Admission
• Follow treatment guidelines for most likely diagnosis (Type 1 NSTEMI, Type 2 MI, or nonischemic myocardial injury)
Equivalency of values: TnI vs. hs-TnI (EUH, EUHM, ESJH, EJCH, Grady) *

Note the following differences between standard troponin I and high-sensitivity troponin I (hs-TnI):
1. Units of measurement are different. hs-TnI is reported as integers in ng/L (whereas TnI was in ng/mL)
2. To convert from hs-TnI to standard TnI (for clinical context), divide by 1000. Example: hs-TnI value of 100 ng/L corresponds to a standard TnI value of 0.1 ng/mL. See table below.
3. hs-TnI has different “abnormal” cut point, (or 99th percentile value) in women and men.

<table>
<thead>
<tr>
<th>standard TnI (ng/mL)</th>
<th>hs-TnI (ng/L)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;0.0023</td>
<td>&lt; 2.3</td>
<td>LOQ** for hs-TnI</td>
</tr>
<tr>
<td>0.015</td>
<td>15</td>
<td>99 percentile (abnormal) hs-TnI value for women</td>
</tr>
<tr>
<td>0.02</td>
<td>20</td>
<td>99 percentile (abnormal) hs-TnI value for men</td>
</tr>
<tr>
<td>0.03</td>
<td>30</td>
<td>99 percentile (abnormal) standard TnI value</td>
</tr>
<tr>
<td>0.04</td>
<td>40</td>
<td>99 percentile (abnormal) standard TnI value</td>
</tr>
<tr>
<td>0.05</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>0.1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10000</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>&gt; 25000</td>
<td>Highest reportable value of analytic range for hs-TnI</td>
</tr>
<tr>
<td>&gt;70</td>
<td></td>
<td>Highest reportable value of analytic range for TnI</td>
</tr>
</tbody>
</table>

* Grady, EUH, EUHM, ESJH, and EJCH use a Beckman Coulter UniCel Dxi analyzer with the following “abnormal” (>99th percentile) cut points: >14.9 mg/L in women; >19.8 ng/L in men. These cut points do NOT apply for EUOSH, EDH, EHH, or ELTAC (see separate protocols for these operating units).
** LOQ: Lowest hs-TnI concentration that is reportable as a number with specified certainty
hs-TnI: high-sensitivity troponin I