hs-cTn – Optimizing the Diagnosis of Acute Myocardial Infarction/Injury in Women

Your Hospital is Participating in CODE-MI

Why?

With the increased use of high sensitivity cardiac troponin (hs-cTn) assays across Canada, there is a unique opportunity to test the impact of sex-specific thresholds on the diagnosis, treatment and outcomes of women presenting with suspected acute coronary syndromes (ACS). The 99th centile threshold for cTn in women is lower than the overall threshold, which currently is being used, and lower than the 99th centile in men, for all hs-cTn assays; the gap is the widest at younger ages. Failure to take these differences into account may contribute to the under-diagnosis of MI and poorer outcomes observed in women compared to men.

What is the impact of the CODE-MI trial on my hospital?

CODE-MI is a stepped-wedge, cluster randomized clinical trial funded by CIHR. The intervention is the use of the 99th centile female threshold in the diagnosis of myocardial infarction (MI) in women presenting to the ED with ischemic chest pain. The trial, running in 28 hospitals, in 8 provinces, seeks to focus attention on the pressing need for different standards of evaluation for female patients presenting to the emergency department with ischemic symptoms. In a step-wise fashion, all 28 hospitals will eventually adopt the lower, female-specific hs-cTn threshold.

Why are unrecognized MIs more common in women and how does this lead to poor outcomes?

Women with ACS are ***less likely*** than men to:

- Be referred to a cardiologist or undergo coronary angiography or revascularization
- Have evidence-based cardiac medications prescribed

Women with ACS are ***more likely*** than men to:

- Present with atypical symptoms and equivocal ECG findings
- Present with non-obstructive CAD on angiography (i.e. MINOCA which has high mortality rates so identification is important)

AND

The currently used 99th centile threshold is higher than the female-specific 99th centile, in all hs-cTn assays.

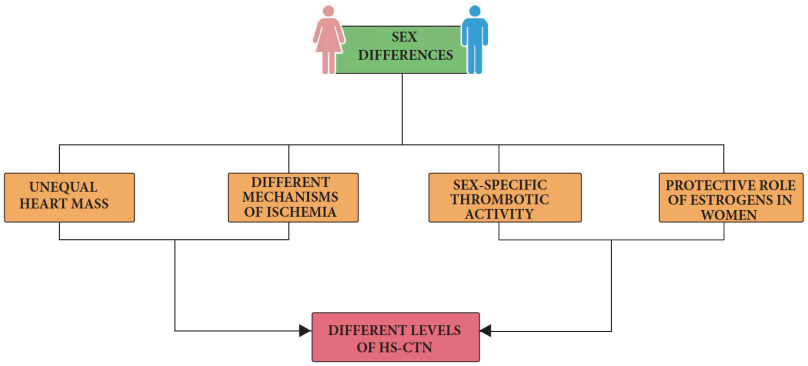

FIGURE 1: Mechanisms contributing to the discrepancy in hs-cTn levels between men and women.

Romiti et al. Cardiovascular Therapeutics, vol. 2019, Article ID 9546931

While both the 4th International Definition of MI and the International Federation of Clinical Chemists, among others, recommend the use of sex-specific thresholds for hs-cTn assays, evidence supporting the prognostic implications of these thresholds is lacking, especially whether implementation of female-specific hs-cTn thresholds improves outcomes through better targeting of treatments.