New Highly Sensitive Troponin T Assay **October 2010**

Background

The measurement of Troponin is indicated in patients where there is clinical suspicion of acute myocardial necrosis. This will usually be in patients presenting with chest pain and or abnormalities on the 12 lead ECG.

The troponin assay has changed the management of acute coronary syndromes (ACS) over the last 10 years improving diagnosis, risk stratification and treatment. The attached algorithm shows how to use the new highly sensitive Troponin T to aid in the diagnosis of acute MI.

Diagnostically, troponin levels may rise or fall.

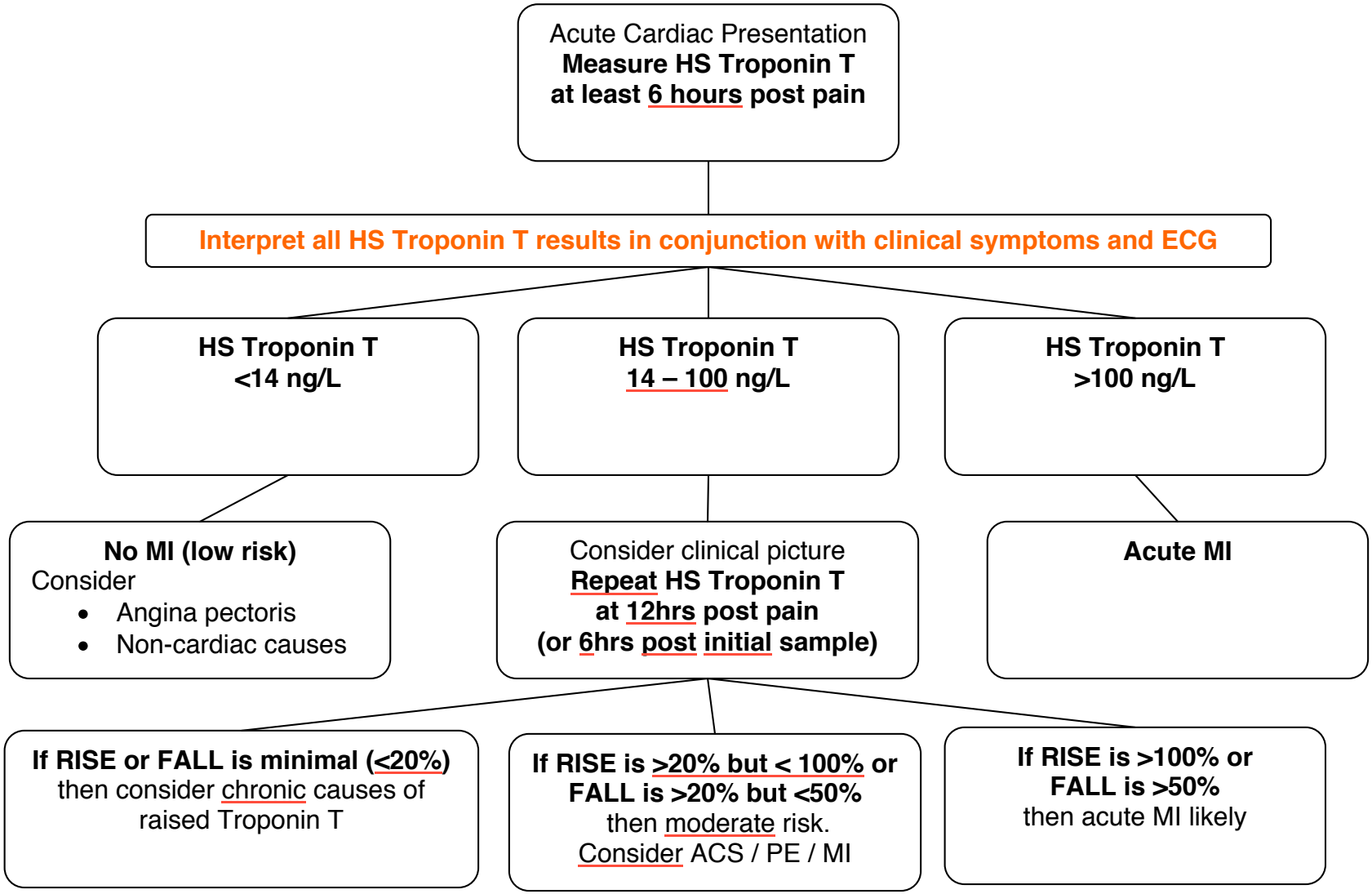
Three important changes have been introduced:

1. The measurement of troponin is highly sensitive increasing the number of patients with mild myocardial necrosis detected.
2. The measurement of troponin at 6 hours allows earlier diagnosis.
3. The introduction of serial measurements at 6 and 12 hours (or 6hrs post initial sample) in an intermediate group to differentiate patients with acute MI and chronic troponin rise.

An important change is the division of the result into three groups: Low risk (less then 14 ng/L); Acute MI likely (greater than 100 ng/L) and an intermediate group 14-100 ng/L where a small troponin change (rise or fall) may indicate a non cardiac condition such as renal failure or an acute troponin release due to myocardial necrosis. In this group a demonstrated rise or fall of the second sample at 12 hours will help in the differential diagnosis of this group.

It is however important to remember that no test is 100% sensitive and specific. In patients with chest pain and a normal HS troponin T, the patient is low risk (**but not no risk**) for sudden death and myocardial infarction.

For this reason the clinical history, examination and the 12 lead ECG remain important diagnostic tools which must be included in any risk stratification. It should be remembered that there are important causes of chest pain such as pulmonary embolism, aortic dissection and oesophageal rupture other than acute myocardial ischaemia / necrosis.


Acute Cardiac Presentation
Measure HS Troponin T
at least 6 hours post pain
Interpret all HS Troponin T results in conjunction with clinical symptoms and ECG
HS Troponin T
<14 ng/L
HS Troponin T
14 – 100 ng/L
HS Troponin T
>100 ng/L
No MI (low risk)
Consider
Angina pectoris
Non-cardiac causes
Consider clinical picture
Repeat HS Troponin T
at 12hrs post pain
(or 6hrs post initial sample)
Acute MI
If RISE or FALL is minimal (<20%)
then consider chronic causes of
raised Troponin T
If RISE is >20% but < 100% or
FALL is >20% but <50%
then moderate risk.
Consider ACS / PE / MI
If RISE is >100% or
FALL is >50%
then acute MI likely