

## **Circular: Introducing *hs-cTnI***

The Chemical Pathology Department has introduced high-sensitive cardiac troponin-I (*hs-cTnI*) to the Colombo North Teaching Hospital in accordance with the **2020 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation**<sup>1</sup>.

High-sensitive cardiac troponin-I (*hs-cTnI*) assays can detect cTnI in 50% of healthy individuals due to its very high sensitivity. It can detect increase in cTnI (above 99<sup>th</sup> percentile of the healthy population, i.e. Male > 12 ng/L, Female >9 ng/L) within 3 hours from the onset of chest pain due to an Acute Myocardial Infarction (AMI). Therefore, the 2020 ESC Guidelines recommends measuring cTnI preferably by a *hs-cTnI* assay.

cTnI reaches peak concentrations in approximately 8 to 28 hours and remains elevated for 3 to 10 days following AMI. Therefore, serial sampling to detect the change (temporal rise or fall) of the *hs-cTnI* level is recommended for clinically suspicious cases.

As stated by the **2020 ESC Guidelines**, biomarkers such as ***hs-cTnI*** complement the clinical assessment and the ECG in diagnosing acute myocardial infarction (AMI). Therefore, **abnormal *hs-cTnI* levels should always be correlated with the clinical evaluation** and **should not be interpreted in isolation**. Especially when a **marginal increase in cTnI** is encountered (e.g., exceeding 99<sup>th</sup> percentile of a reference control population) in the **absence of evidence of myocardial ischemia**, other possible aetiologies such as **heart failure, renal failure, myocarditis, arrhythmias, pulmonary embolism, and sepsis should be considered**.

Please note that the units of *hs-cTnI* has been changed from ng/mL to ng/L according to the IFCC guidelines and (*hs-cTnI* 1000 ng/L = cTnI 1 ng/mL).

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<sup>1</sup> '2020 ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation: The Task Force for the Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation of the European Society of Cardiology (ESC)', *European Heart Journal*, 42.14 (2021), 1289–1367.