TheMKWay

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Request under Freedom of Information Act 2000

Thank you for your request for information which we received on 2nd may 2023
I am pleased to confirm the following.

1. what was the cardiac troponin assay (please specify manufacturer) used at that period of time within your Trust?

The laboratory has been using the Troponin I immunoassay provided by Beckman Coulter since 2014.

2. what threshold was used for a positive test?

Feb 2016 - Nov 2018:
0.5 ug/l is the generally accepted single measurement cut off for the diagnosis of myocardial infarction.
Levels above 0.04 ug/l in patients diagnosed with NSTEMI/UA are significantly associated with an increased risk of adverse cardiac events. Using a positive predictive value (PPV) of greater than 0.04 ng/ml, approximately 65-73% of patients were diagnosed with MI.
To rule out MI serial measurement of troponin I at 0 and 3 hours should be <0.04ug/l.

Nov 2018 - Now
Female < 11.7 ng/L

Male < 19.9 ng/L

Troponin is used in conjunction with clinical symptoms and ECG changes in the diagnosis of myocardial infarction (MI). As troponin levels rise post MI, To rule out MI, serial measurement of troponin I at 0 and, 1-3 or 3-6 hours (if preferred 6-9 hours) should be used. The table below describes the positive predictive value (PPV) and the negative predictive value (NPV) of MI using a delta change in troponin value of 5ng/L over a six hour period post development of symptoms.

Delta change (ng/L)	Time after admission (hours)	PPV (%)	NPV (%)
5	0 v 1-3	76	96
	0 v 3-6	72	97

The information below was appended to the current reference ranges for Laboratory scientist information and guidance on **24/11/20**:

Values greater than 58 in females and 99 in males are indicative of Acute Coronary Syndrome.
Values showing a rise in value greater than 5 at 3 or 6 hours are also indicative of Acute Coronary Syndrome.

Values between 11.7 and 58 in females; and between 19.9 and 99 in males; where a rise in value greater than 5 is not seen at 3 or 6 hours; are indicative of myocardial injury.

The following comments were added to clinical reports and made available to clinicians based on the Gender of the patient on **24/11/20**, This information was taken from the ACS Diagnostic pathway**:**

Female patients
If chest pain occurred >6 hours ago, TnI <11.7 ng/L in females' rules-out ACS. No need to repeat.
Irrespective of timing of chest pain, TnI > 58.0 ng/L in females' rules-in ACS. No need to repeat.
If chest pain occurred <6 hours ago AND TnI <11.7 ng/L in females, repeat at 3 hours looking for a rise of >5 ng/L AND/OR levels > 11.6 ng/L in females to rule-in ACS.
Irrespective of timing of chest pain, if TnI is 11.7-58.0 ng/L in females repeat at 3 hours looking for a rise of >5 ng/L to rule-in ACS.

Male Patients:
If chest pain occurred >6 hours ago, TnI < 19.8 ng/L in males' rules-out ACS. No need to repeat.
Irrespective of timing of chest pain, TnI >99.0 ng/L in males' rules-in ACS. No need to repeat.

If chest pain occurred <6 hours ago AND TnI < 19.9 ng/L in males, repeat at 3 hours looking for a rise of >5 pg/ml AND/OR levels > 19.8 ng/L in males to rule-in ACS.

Irrespective of timing of chest pain, if TnI is 19.9-99.0 ng/L in males repeat at 3 hours looking for a rise of >5 ng/L to rule-in ACS.

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If you need any further assistance, please do not hesitate to contact us at the address above.

Yours sincerely,

Freedom of Information Co-ordinator

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For and on behalf of Milton Keynes Hospital NHS Foundation Trust