ASSESSMENT OF CHEST PAIN SUSPECTED TO BE CARDIAC IN ORIGIN
Supporting information

This guideline has been prepared with reference to the following:

Van Den Berg P, Body R. The HEART score for early rule out of acute coronary syndromes in the emergency department: a systematic review and meta-analysis. Eur Heart J Acute Cardiovasc Care. 2018;7:111-9

NICE. Chest pain of recent onset: Assessment and diagnosis of recent onset chest pain or discomfort of suspected cardiac origin. 2010 (updated 2016). NICE. London

http://www.nice.org.uk/guidance/cg95

Mahajan VS & Jarolim P. How to interpret elevated cardiac troponin levels. Circulation 2011;124: 2350-4

https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.111.023697

Troponin T levels should be measured on arrival?
A systematic review of cohort studies with a minimum participant follow-up of 80% (Ebell, 2000) found that, for patients with chest pain and a normal electrocardiogram, the peak troponin level drawn 6 or more hours after the onset of chest pain was useful for identifying patients at low risk of death or nonfatal MI at 30 days (negative likelihood ratio=0.07; probability of outcome=0.3% with a negative test, given a pretest probability of 4.4%). For patients with unstable angina, the sensitivity of troponin for the identification of patients who die or have a nonfatal MI in the next 30 days was only 59%, and the specificity only 79%.

Ebell MH, White LL, Weismantel D. A systematic review of troponin T and I values as a prognostic tool for patients with chest pain. J Fam Pract 2000;49:746-53

Evidence Level: III

Use the HEART Score for assessing suspected Cardiac chest pain?
A systematic review of 30 studies aimed to summarize all studies assessing the prognostic accuracy of the HEART score for prediction of Major Adverse Cardiac Events (MACE) in adult ED patients presenting with chest pain (Fernando, 2018). The review found a HEART score above the low-risk threshold (≥4) had a sensitivity of 95.9% (95% confidence interval [CI]: 93.3-97.5) and specificity of 44.6% (95% CI: 38.8-50.5) for MACE. A high-risk HEART score (≥7) had a sensitivity of 39.5% (95% CI: 31.6-48.1) and specificity of 95.0% (95% CI: 92.6-96.6) for MACE, whereas a thrombolysis in myocardial infarction (TIMI) score above the low-risk threshold (≥2) had a sensitivity of 87.8% (95% CI: 80.2-92.8) and specificity of 48.1% (95% CI: 38.9-57.5) for MACE. A high-risk TIMI score (≥6) was 2.8% sensitive (95% CI: 0.8-9.6), but 99.6% (95% CI: 98.5-99.9) specific for MACE. A HEART Score ≥ 4 had a sensitivity of 95.0% (95% CI: 87.2-98.2) for prediction of mortality, and 97.5% (95% CI: 93.7-99.0) for prediction of myocardial infarction. The authors concluded that the HEART score has excellent performance for prediction of MACE (particularly mortality and myocardial infarction) in chest pain patients, and should be the primary clinical decision instrument used for the risk-stratification of this patient population.

Fernando SM, Tran A Cheng W et al. Prognostic Accuracy of the HEART Score for Prediction of Major Adverse Cardiac Events in Patients Presenting with Chest Pain - A Systematic Review and Meta-Analysis. Acad Emerg Med. 2018 Oct 29 [Epub ahead of print]
https://onlinelibrary.wiley.com/doi/full/10.1111/acem.13649

Evidence Level III

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