GRACE-1: Recurrent, Low-Risk Chest Pain in the ED

RECURRENT CHEST PAIN: Defined as patients who have had a previous visit to an emergency department (ED) with chest pain that led to a diagnostic protocol for its evaluation that did not demonstrate evidence of acute coronary syndrome or flow-limiting coronary stenosis. This included two or more ED visits for chest pain in a 12-month period.

LOW RISK: Low risk was defined by HEART score <4 points (and other scores validated in the ED setting such as the HEART pathway or TIMI score) for disease-related poor outcomes within 30 days, all of which require an electrocardiogram (ECG) for risk stratification.

PICO QUESTIONS

1. **(P)** In adult patients with recurrent, low-risk chest pain, **(I)** is a single troponin vs **(C)** serial troponins needed for **(O)** ACS outcomes within 30 days?
2. **(P)** In adult patients with recurrent, low-risk chest pain, and normal or non-diagnostic stress testing within the last 12 months, **(I)** does repeat stress testing vs **(C)** no stress test have an effect on **(O)** MACE within 30 days?
3. **(P)** In adult patients with recurrent, low-risk chest pain, is **(I)** admission to the hospital versus **(C)** stay in the ED observation unit versus **(C)** outpatient follow up recommended for **(O)** ACS outcomes within 30 days?
4. **(P)** In adult patients with recurrent, low-risk chest pain and a negative cardiac catheterization defined as less than 50% stenosis **(E)** what is their risk of subsequent ACS and time to ACS?
5. **(P)** In adult patients with recurrent, low-risk chest pain and a negative cardiac catheterization defined as no coronary disease (0% stenosis) **(E)** what is their risk of subsequent ACS and time to ACS?
6. **(P)** In adult patients with recurrent, low-risk chest pain and a negative coronary CT angiogram **(E)** what is their risk of subsequent ACS and time to ACS?
7. **(P)** In adult patients with recurrent, low-risk chest pain, **(I)** what is the yield of depression and anxiety screening tools in **(O)** healthcare use and return ED visits?
8. **(P)** In adult patients with recurrent, low-risk chest pain, **(I)** what is the role of referral for anxiety/depression in **(O)** healthcare use and return ED visits?

RECOMMENDATIONS

1. In adult patients with recurrent, low-risk chest pain, for greater than 3 hours duration we suggest a single, high-sensitivity troponin below a validated threshold to reasonably exclude ACS within 30 days. (Conditional, For) [Low level of evidence]
2. In adult patients with recurrent, low-risk chest pain, and a normal stress test within the previous 12 months, we do not recommend repeat routine stress testing as a means to decrease rates of MACE at 30 days. (Conditional, Against) [Low level of evidence]
3. In adult patients with recurrent, low-risk chest pain, there is insufficient evidence to recommend hospitalization (either standard inpatient admission or observation stay) versus discharge as a strategy to mitigate major adverse cardiac events within 30 days. (No evidence, Either)
4. In adult patients with recurrent, low-risk chest pain and non-obstructive (< 50% stenosis) CAD on prior angiography within 5 years, we suggest referral for expedited outpatient testing as warranted rather than admission for inpatient evaluation. (Conditional, For) [Low level of evidence]
5. In adult patients with recurrent, low-risk chest pain and no occlusive CAD (0% stenosis) on prior angiography within 5 years, we recommend referral for expedited outpatient testing as warranted rather than admission for inpatient evaluation. (Conditional, For) [Low level of evidence]
6. In adult patients with recurrent, low-risk chest pain and prior CCTA within the past two years with no coronary stenosis, we suggest no further diagnostic testing other than a single, high-sensitivity troponin below a validated threshold to exclude ACS within that two-year time frame. (Conditional, For) [Moderate level of evidence]
7. In adult patients with recurrent, low-risk chest pain, we suggest the use of depression and anxiety screening tools as these might have an effect on healthcare use and return ED visits. (Conditional, Either) [Very low level of evidence]
8. In adult patients with recurrent, low-risk chest pain, we suggest referral for anxiety or depression management, as this might have an impact on healthcare use and return ED visits. (Conditional, Either) [Low level of evidence]