

Diagnosis of Critical Coronary Artery Disease Using Cardiac Catheterization in Patients With Non-ST Elevation Myocardial Infarction (NSTEMI) or Unstable Angina in NL

Practice Points

1. Acute coronary syndrome is caused by STEMI, NSTEMI, and unstable angina. The differentiation between NSTEMI and unstable angina is the presence of elevated troponin levels in patients with NSTEMI.
2. For the diagnosis of acute myocardial necrosis (NSTEMI), elevation of high sensitivity troponin above 99 percentile of the upper reference value is required. Additionally, evidence for a serial increase or decrease $\geq 20\%$ is required if the initial level is elevated.

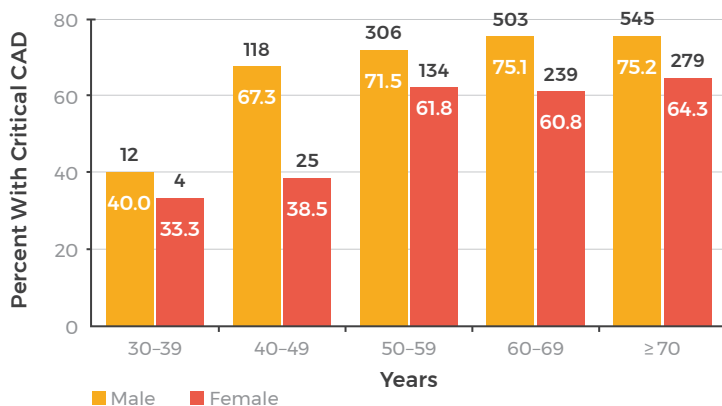
Methods

1. Patients in the APPROACH database who had cardiac catheterization (CC) for acute coronary syndrome indicated because of NSTEMI or unstable angina from 2007–2017 were analyzed.
2. Critical Coronary Artery Disease (CAD) was defined as ≥ 1 coronary artery with $\geq 70\%$ stenosis or $\geq 50\%$ stenosis of left main coronary artery.

Results

- During the past decade the number of CCs done for NSTEMI has increased from 525 in 2008 to 895 in 2017, an increase of 70.5%.

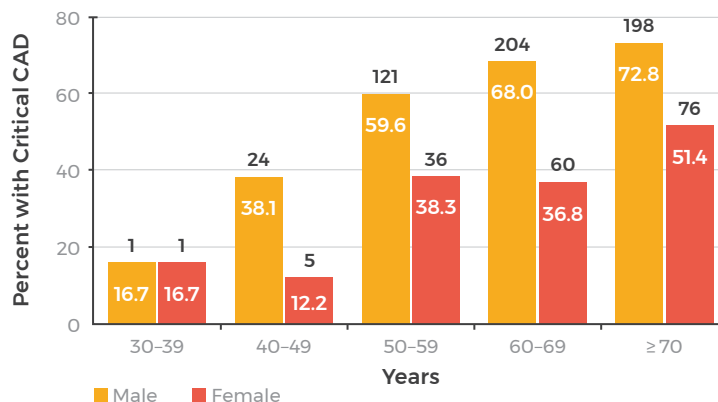
Percentage of Males and Females With NSTEMI Diagnosed as Having Critical CAD by Age (2014–2017)



- The diagnosis of critical CAD in patients with NSTEMI is lower in females than males.

- During the past decade the number of CCs done for unstable angina decreased from 435 in 2008 to 323 in 2017, a decrease of 25.7%.

Percentage of Males and Females With Unstable Angina Diagnosed as Having Critical CAD by Age (2014–2017)



- Diagnosis of critical CAD in patients considered to have unstable angina was low in all females and in males less than 60 years of age.

Conclusions

1. In patients with atypical symptoms for NSTEMI, consideration should be given to alternate causes of elevated troponins prior to ordering a CC, particularly if there is solitary elevation of troponin levels, or serial levels do not reveal $\geq 20\%$ change in levels, or conditions predisposing to demand ischemia are present.
2. In patients with stable vital signs diagnosed as having unstable angina, if there is no history of CAD, a coronary CT angiogram may be indicated, and if there is a history of CAD, a nuclear myoview study may define the risk of ischemia. CC may not be necessary.