Overview

Acute Coronary Syndrome (ACS) typically describes three major cardiac conditions: Unstable angina (UA), non-ST elevation myocardial infarction (NSTEMI) and ST elevation myocardial infarction (STEMI). The classic presentation is retrosternal chest pain, heaviness, diaphoresis and radiating pain into the jaw readily diagnosable by ECG and troponins. However, up to 50% of ACS patients do not have this classic presentation, causing confusion in healthcare practitioners and delay in diagnosis. Following acute care management, high risk patients face > 8% risk of death within 6 months and therefore must be managed diligently by their primary care providers.

Definitions

1) Typical presentation (TP): Chest pain located sub-sternally, right or left-sided, characterized as squeezing, heavy, crushing, a fullness or pressure, radiating into jaws or arms with history of pain aggravated by exercise and relieved with rest or nitroglycerin. Symptoms can also include associated nausea, dyspnea, diaphoresis or syncope.

2) Atypical presentation (AtP): No chest pain, point tenderness or chest pain characterized as stabbing or sharp. Can also be associated with nausea, dyspnea, diaphoresis, syncope or shoulder pain. Symptoms may not have historical patterns or relief with nitroglycerin.

3) UA: Decreased myocardial perfusion without concomitant myocardial necrosis. Subtyped by Canadian Cardiovascular Society:
   a. Class I: New onset severe or accelerated angina
   b. Class II: Angina at rest (one or more episodes of angina at rest during the preceding month, not within the preceding 48 hours)
   c. Class III: Angina at rest (one or more episodes within the preceding 48 hours)

4) NSTEMI: Resulting in a non-Q wave MI, partial myocardial necrosis

5) STEMI: Resulting in a Q-wave MI, transmural myocardial necrosis

Diagnostic Considerations

ED with TP
Consider and rule out non-cardiac causes of chest pain * and/or non-ischemic cardiac disorders**

ED with AtP
Consider ACS in patients who are women, older age, have dementia, diabetes mellitus, hypercholesterolemia, or family history of heart disease.

FP with AtP

FP with TP

ECG
Abnormal

Normal

Refer to ED

Standard visit, consider outpatient, cardiac screening

ECG, troponin
Normal, possible ST changes, history consistent

>2 mm ST segment depressions, troponin elevated by 9 hours after pain

>20 minute ST segment elevation, troponin elevated by 9 hours after pain

UA

NSTEMI

STEMI

*Such as pulmonary embolism, pneumonia, aortic dissection, pneumothorax, peptic ulcer disease, pancreatitis, cholecystitis, muscular injury/inflammation, rib fracture, herpes zoster, esophagitis, costochondritis, and/or pleural effusion

**Such as pericarditis, myocarditis, trauma, cardiomyopathy and/or valvular heart disease

Dr. Michael Evans developed the One-Pager concept to provide clinicians with useful clinical information on primary care topics.
**Acute Coronary Syndrome**

*Risk stratification can be performed using the thrombolysis in myocardial ischemia risk score (TIMI), or the global registry of acute coronary events risk score (GRACE). Important factors: Recurrent angina or ischemia at rest or with low-level activities, elevated cardiac biomarkers, new or presumably new ST-segment depression, signs or symptoms of heart failure or new or worsening mitral regurgitation, hemodynamic instability, PCI within 6 mo, Prior CABG, reduced left ventricular function*

**References**

References can be found online at [http://www.dfcm.utoronto.ca/oroerams/oostergraduateorogame/One_Pager_Project_References.htm](http://www.dfcm.utoronto.ca/oroerams/oostergraduateorogame/One_Pager_Project_References.htm)