The patient presenting with a complaint of chest pain is a frequent situation in the emergency department (ED). For our July Journal Club, we reviewed three articles and an ACEP policy statement regarding the evaluation and management of low-risk, chest pain patients. The Journal Club was held at Fort Williams and two guests from the Department of Cardiology, Drs. Kellett and Cohen were present to contribute to the discussion.

We reviewed three separate articles. Please see individual summaries for further details.

The 2006 Pollack article from AEM applied the TIMI risk score to patients looking at 30 day outcomes. The TIMI risk score was developed to predict adverse cardiac outcomes in patients with NSTEMI or unstable angina. This study tried to apply the tool prospectively to 3326 patients presenting with chest pain. The study group had 0.5% of patients expire, 5.7% patients diagnosed with an MI, 12% diagnosed with unstable angina and 82% without ACS. The study found that the higher the TIMI score, the greater likelihood of 30 day death/MI/Revascularization.

The 2012 Aldous article from AEM evaluated using an accelerated diagnostic protocol from the ASPECT trial to attempt to risk stratify patients and allow early discharge of very-low-risk patients. It is a subgroup analysis from the ASPECT trial. 1000 patients were reviewed with 36.2% being diagnosed with an ACS. Patients had their TIMI score calculated, had an ECG evaluated for signs of ischemia and had a serum troponin at presentation and repeated 2 hours later. They found that a TIMI score of 0, ECG without signs of ischemia and negative troponin at 0 and 2 hours after presentation was 99.6% sensitive for ruling out a final diagnosis of ACS.

The 2012 Hess article from Annals was a prospective study which enrolled 278 patients with 12% experiencing a cardiac event within 30 days. The goal was develop and internally validate a clinical prediction rule to identify those at very low risk for ACS. The researchers reviewed 64 variables for potential inclusion. They developed a prediction rule with 5 data points. The data points included ischemic ECG changes not known to be old, history of CAD, initial or 6 hour troponin elevation, age greater than 50 and pain typical for an acute coronary syndrome. The study group found the decision tool to be 100% sensitive for identifying patients as not having ACS if the 5 data points were met.

Key learning points:

The 2012 Hess article I believe it key as it could become useful for ED physicians to help identify very low risk patients who can be safely discharged from the ED. The 5 data points were 100% sensitive for identifying these patients. The important thing to
understand is that this is a derivation study and the data must be validated at a second site before it is ready for use. I await that validation!