REBEL Cast March 2015 Show Notes

Part 1: Oseltamivir Treatment for Influenza in Adults Meta-Analysis

Question: Does oseltamivir significantly decrease symptoms in patients with influenza like illness (ILI)?

What Specific Article Will We Be Covering?
Dobson J et al. Oseltamivir treatment for influenza in adults: a meta-analysis of randomised controlled trials. Lancet 2015

Details of the Study
Study Type: Meta-analysis using patient level data from 9 trials
Population: 4300 patients who presented with ILI.
Intervention: Oseltamivir 75 mg BID X 5 days
Control: Placebo
Outcome: Time to alleviation of symptoms

Results:
- In patients with ILI (not confirmed influenza), the use of oseltamivir was associated with an 18-hour reduction in symptoms.
- In patients with ILI and confirmed influenza, the use of oseltamivir was associated with a 24-hour reduction in symptoms.
- Oseltamivir treatment increased the risk of nausea (RR 1.60) and vomiting (RR 2.43)

What is the clinical bottom line for the above clinical question?
The use of oseltamivir is associated with an 18-hour reduction in time to symptom resolution in patients with ILI in comparison to placebo. However, this minor reduction comes with significant increases in side effects namely nausea and vomiting which obviates the modest benefit.

For More on the Above Topic:

- [Which Review of Tamiflu Data Do You Believe?](#) Ryan Radecki Emergency Medicine Literature of Note. February 6th, 2015.

- [Neuraminidase Inhibitors for Influenza – The Truth, the Whole Truth and Nothing But the Truth](#). Anand Swaminathan Academic Life in Emergency Medicine. April 14th, 2014.

Part 2: HEART Score in Low Risk Chest Pain Patients

Clinical Question: Does use of the HEART Score safely reduce stress testing and cardiac imaging in patients at low risk for major adverse cardiac events (MACE)?

Article: Mahler SA et al. Can the HEART Score Safely Reduce Stress Testing and Cardiac Imaging in Patients at Low Risk for Major Adverse Cardiac Events? Crit Pathways in Cardiol 2011; 10: 128 - 133

Background: Approximately 8 – 10 million patients complaining of chest pain present to emergency departments annually in the United States. The cost of chest pain evaluations has been estimated to be $5 - $10 billion annually with only a 10% rate of acute coronary syndrome (ACS) being diagnosed.

The Thrombosis in Myocardial Infarction (TIMI) risk score lacks the sensitivity necessary to avoid additional diagnostic testing or inpatient care. Also the TIMI score was developed in the cardiology inpatient setting in high-risk patients, but not in an undifferentiated population of chest pain patients in the ED.

The HEART score is a more recently developed decision aid developed in an ED setting and designed to identify ED patients, with chest pain that can safely forgo objective cardiac testing. The HEART score has also been validated in Europe with patients having a low risk HEART score (0 - 3) having a MACE rate of less than 1% at 6 weeks.

Details:
- Combination of Prospective Cross-Sectional Data and Retrospective, Chart Review of Low Risk Chest Pain Patients
- HEART Score dichotomized into low (0 – 3) or high risk (>3)
- Outcomes: Major Adverse Cardiac Events (MACE) and Composite End Point of All-Cause Mortality, Myocardial Infarction, or Coronary Revascularization During Index Visit or within 30 Days

Results:
- 1070 Low Risk Chest Pain Patients included in study
- HEART Score alone missed 5 cases of ACS among 904 patients (0.5%)
- HEART Score + Serial troponin testing (4 – 6 hr) missed 0 cases of ACS
- Low Risk HEART Score would reduce cardiac testing by 84.5% (904/1070)
- Combination of serial troponin (4 – 6hr) and HEART score stratification → 100% sensitive and 83% specific for MACE
- Combination of serial troponin (4 – 6 hr) and HEART score stratification would reduce cardiac testing by 82% (879/1070)

Strengths:

- High intraobserver agreement among blinded abstractors for HEAER scores (Kappa = 0.81)
- Record review for MACE was completed with 30 day follow up in 70% (753/1058) patients

Weaknesses:
- Single center from an observation unit (patients were pre-selected by ED physicians based on clinical assessment which makes this a highly selected low risk chest pain cohort)
- 532 subjects or just over half of the charts required data abstraction to calculate the HEART score
- No height and weight data for BMI calculation which could have caused underestimation of HEART score sensitivity and overestimation of specificity
- 6.3% of patients did not receive stress testing or cardiac imaging
- 305 patients did not have 30d MACE evaluated which could underestimate the primary outcome

Clinical Bottom Line: The HEART Score in combination with cardiac enzyme testing, safely reduces cardiac testing in a population of chest pain patients with a low pretest probability of ACS