"Acute Coronary Syndromes: Trials & Tribulations"
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In 25 Minutes…
• Update the most recent studies…how should they change my practice?
• How long to continue antiplatelet therapy for drug-eluting stents?
• Can I trust the Troponin? When is it safe to discharge?
• Inpatient stress test or not? Which one?

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N-acetylcysteine for prevention of contrast-induced nephropathy in primary angioplasty

Standard dose NAC
(600mg IV before + 600mg PO bid x 48hrs)
vs.
High dose NAC
(1200mg IV before + 1200mg PO bid x 48hrs)
vs.
Control


N-acetylcysteine for prevention of contrast-induced nephropathy in primary angioplasty

• Not blinded

• Outcomes:
  1. Contrast Nephropathy: 25% increase in creatinine within 72hrs
  2. Mortality, ARF (dialysis), Intubation


Contrast-Induced Nephropathy Stratified According to Creatinine Clearance and Ejection Fraction
Early Invasive vs. Selectively invasive strategy in NSTE MI

- 1200 patients with elevated Troponin T and either ECG changes or known history of CAD

- Early invasive strategy: Catheterization and PCI within 24-48 hours

- Selectively invasive strategy: Catheterization if failed optimal medical therapy or clinically significant ischemia on non-invasive testing

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Early Invasive vs. Selectively invasive strategy in NSTE MI

- Comparison of mortality, MI, Death, and Rehospitalization

*Death, MI, or Rehospitalization

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De Winter et al NEJM 2005;353:1095-104
Meta-analysis of early-invasive vs. selectively invasive strategy for NSTEMI

Study showing non-inferiority of selective approach had:

- Optimal Medical therapy included: ASA (all), LMWH (all), Intensive Statin (>90%), Clopidogrel (61 & 49%), and IIb-IIIa inhibitors during PCI
- Included slightly lower risk population

Selective Catheterization is a defensible option:

- Optimal Medical Therapy: ASA, LMWH, Clopidogrel, Intensive Statin Therapy
- Early non-invasive study
- Lower risk patients
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In-stent Restenosis

- 22-32% at 6 months with Bare Metal Stents (BMS)
- Higher with long lesions, small vessels, multiple lesions
- About half of angiographic restenosis results in a clinical event

Thrombotic Stent Closure

- Acute, Sub-acute, Late, or Very Late
- BMS and DES equal frequency if DES on dual anti-platelet therapy
- Rates of infarction and mortality high
Drug-eluting stents (DES) vs. bare metal stents (BMS)

Rate of angiographic restenosis for DES vs. BMS

Mortality for DES vs. BMS
Survival Curves for Patients with and without Diabetes

Stent Thrombosis in the Pooled Population According to Stent Type and the Duration of Dual Antiplatelet Therapy

Early and late events
**Recommendations:**

- Consider BMS in patients who may not be able to comply with long term Clopidogrel
- Consider BMS in patients with Diabetes
- JACC editorial (2007): Dual therapy (Clopidogrel & ASA) until issue of duration is resolved
- ACC advisory (2007) Dual therapy for 1 year
- Probably should continue Clopidogrel beyond 1 year in patients who have a low risk of bleeding (Up To Date)

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**Prognostic value of Troponins**

- Is the problem solved?
- Very sensitive for Acute MI (100 %)
- Not so sensitive for Unstable Angina (36 %)
- NPV for events @ 30 days impressive (99.6%)

_Hamm et al NEJM 1997;337:1648-53_
Trying to Replicate Hamm
Troponin T as predictor of events at 60 days


Event rates in Negative Troponins

Polarzyk predictor Male, CP worse, known CAD, EKG change

TIMI Risk Score

• Age > 65
• 3 cardiac risk factors
• Known CAD
• ST deviation on ECG
• 2 anginal episodes in last 24 hours
• Elevated Cardiac markers
• Recent use of ASA
Clinical Assessment after ROMI

- Quality of Symptoms
- 2 or more episodes in last 24 hours
- Age > 65
- Insulin Dependent DM
- Prior intervention
- Alternative diagnosis
Clinical combinations that may have a good prognosis

- Prolonged Chest Pain and normal Troponin
- Normal ECG and normal Troponin in a young, non-diabetic patient without prior CAD.
- Normal Troponin and atypical symptoms in young, non-diabetic patient without prior CAD.

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Diagnostic Characteristics of Non-invasive testing modalities
Outcomes after negative test

Immediate Safety of Exercise after ROMI

- Butman et al  N=125  events=1 (0.8)
- Swahn et al  N=400  events=1 (0.3)
- Wilcox et al  N=107  events=1 (0.9)
- Total  N=632  events=3 (0.5)

Stein et al Circulation 2000 102:1463-67
Contraindications to Stress ECG testing
- LBBB (Vasodilator pharmacologic)
- LVH
- Digoxin
- ST abnormalities
- Paced rhythm
- Pre-excitation
- Can’t exercise: (ie won’t make 85% predicted MHR)

Stress ECG, unless...

Baseline ECG Abnormalities (except LBBB):
- Exercise perfusion imaging
- Exercise Echocardiography

Unable to exercise:
- Pharmacologic perfusion imaging or echocardiography

LBBB:
- Adenosine or Dipyridamole perfusion imaging
Questions?

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