A 'Direct' Transfer Protocol for Patients with Non ST-Elevation Myocardial Infarction Reduces Time to Coronary Angiography

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Background: Most patients with NSTEMI present to hospitals without angiography facilities, and so wait as inpatients for transfer to the regional cardiac centre. This care model has inherent time delays.

Methods: A novel care pathway for managing NSTEMI, known as the Heart Attack Centre-Extension (HACX), has been investigated. This pathway identifies patients with NSTEMI by clinical assessment and rapid troponin testing whilst in the emergency department. Patients with NSTEMI are transferred to the regional centre within 1 hour without referral. All unstable patients undergo immediate angiography. Stable patients undergo angiography on the day of admission unless they arrive after 5pm; then angiography is undertaken on the next available routine list. We have assessed need for angiography and revascularisation in 702 patients (391 before the HACX (pre-HACX), and 311 treated via the pathway (post-HACX)). We have also compared waiting times for angiography and length of hospital stay.

Results: 50/311 (16.1%) of HACX patients underwent angiography. 144/250 (57.6%) were treated with coronary revascularisation (108 (75%) PCI and 36 (25%) CABG). 106/250 (42.4%) were treated with medical therapy alone. NSTE-ACS was the discharge diagnosis for 75.4% of HACX patients. Median time from admission to angiography was pre-HACX (average 2.7 days and post-HACX 1.02 days (p=0.0001)) (figure 1). Median length of stay was 9 days pre-HACX and 3 days post-HACX (p=0.0001).

Conclusion: This novel care pathway allows delivery of early angiography to NSTEMI patients. The pathway allows accurate diagnosis of NSTEMI, and inappropriate transfers are infrequent.

TCT-389
Are Adverse Events Following an Invasive Strategy in Patients with Non ST-Segment Elevation Acute Coronary Syndromes (NSTEMACS) More Frequent at US Sites vs Non US Sites (OUS)? Analysis from the ACUITY Trial

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Background: Previous studies suggested worse outcomes with primary PCI for STEMI at US vs OUS sites, but there are little data in pts with NSTEMACS.

Methods: ACUITY randomized 13,819 NSTEMACS pts in 17 countries to an early invasive approach with 1 of 3 strategies: 1) heparin plus GPI, 2) bivalirudin (Biv) plus GPI, or 3) Biv alone.

Results: US pts were heavier, had more HTN, DM, prior MI, prior CABG and anemia. OUS pts were older, had more renal insufficiency and more positive cardiac markers. US pts were treated more often with stents (61.5% v 54.9%; p<0.001) or PCI (75.0% vs 69.0% respectively, p<0.001). The US pts had more DE (833 vs 373%, p<0.001). US pts received aspirin, statins and beta blockers more often at admission, but received thienopyridines less often pre-angiography and at discharge. At 1 yr US pts had lower mortality and lower TLR but more MI. Bleeding was similar at 30 days. After adjusting for baseline risk, US pts had more MI but less TLR with no difference in mortality or MACE.

ACUITY 1 Year Outcomes: US vs OUS

TCT-390
A Prospective Appropriate Use Criteria Tool Aids Revascularization Decision-Making in the Catheterization Laboratory

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Background: Appropriate use criteria for coronary revascularization were published in 2009. While a large national analysis demonstrated low overall rates of inappropriate revascularization, variability exists among institutions. We sought to determine whether use of a prospective AUC assessment tool used at the time of procedure would improve rates of appropriate revascularization.

Methods: A form was designed to be used at the time of diagnostic coronary angiography. The form includes five key factors: 1) classification of angina severity, 2) level of risk based on non-invasive stress testing, 3) presence of other high risk markers, 4) number of anti-anginal medications, and 5) coronary anatomy. The first four to be considered prior to starting the angiogram, so that real-time decision making could be made about the appropriateness of revascularization once the coronary anatomy was known.

Results: Since initiation of the AUC tool in March 2011 at our cardiac center, 216 patients underwent coronary revascularization. For these cases, overall rates of appropriate (A), uncertain (U), and inappropriate (I) revascularization were 89%, 9%, and 2%, respectively. Patients with acute coronary syndrome (ACS) (68%) had A, U, and I scores of 94%, 4% and 2%, respectively. Among those with stable ischemic heart disease (SIHD), 47% had an intermediate or high-risk noninvasive stress test. There was infrequent use of >1 anti-anginal medication in all patients (48% in ACS versus 37% in SIHD). Compared to same facility retrospective analysis from the preceding 18 months, inappropriate rates after implementation of the AUC tool dropped from 3% to 2%.

Conclusion: Symptoms, angina class and stress test findings predominantly drive revascularization decisions. An unacceptably high number of patients with low risk stress tests or suboptimal anti-anginal therapy undergo revascularization. Routine use of our assessment tool allows the appropriateness status to be determined at the time of procedure and results in a lower rate of inappropriate revascularization.