Acute versus subacute angiography in patients with non-ST-elevation myocardial infarction - the NONSTEMI trial phase I.

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Abstract

BACKGROUND: The 2015 European Society of Cardiology non-ST-elevation myocardial infarction (NSTEMI) guidelines recommend angiography within 24 h in high-risk patients with NSTEMI. An organized STEMI-like approach with pre-hospital or immediate in-hospital triage for acute coronary angiography (CAG) may be of therapeutic benefit but it remains unknown whether the patients can be properly diagnosed in the pre-hospital setting. We aim to evaluate whether it is feasible to diagnose patients with NSTEMI in the pre-hospital phase or immediately upon admission.

METHODS AND RESULTS: We randomized 250 patients to either acute or subacute CAG (i.e. <72 h of admission). Pre-hospital electrocardiogram acquisition and point-of-care troponin-T measurement ensured that 148 (59%) patients were identified already in the ambulance, whereas the remaining 102 (41%) patients were identified immediately after hospital admission. An acute coronary syndrome was verified in 215 (86%) and NSTEMI in 159 (64%) patients. The CAG rate was significantly higher in the acute CAG group (98% vs. 87%, p<0.001). A culprit lesion was identified in 74% and 64% of the patients underwent coronary revascularization: acute CAG group: 53% percutaneous coronary intervention, 5% hybrid, 7% coronary artery bypass grafting; conventional treatment: 48% percutaneous coronary intervention, 2% hybrid, 14% coronary artery bypass grafting, p=0.32. In patients randomized to acute CAG, time from randomization to CAG was 1.1 h; in patients randomized to subacute CAG it was two days. Time from randomization to initial revascularization was 1.3 h versus 2.4 days, and the median hospital stay was 4.0 days versus 4.5 days. Among patients randomized to subacute CAG, 17% crossed over to acute CAG and 5% developed STEMI before catheterization.

CONCLUSION: Diagnosing NSTEMI patients in the pre-hospital phase or immediately upon hospital admission is feasible. Acute CAG may impact the mode of revascularization and is associated with earlier revascularization and shorter hospital stay. The clinical benefit of acute CAG in NSTEMI patients remains to be clarified.
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