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Optimal Timing of Coronary Angiography and Potential Intervention in Non-ST-elevation Acute Coronary Syndromes

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ABBREVIATIONS

ABOARD= Angioplasty to Blunt the Rise of Troponin in Acute Coronary Syndromes Randomized for an Immediate or Delayed Intervention (study)
ACS= acute coronary syndrome(s)
CI= confidence intervals
ELISA= Early or Late Intervention in unStable Angina (trial)
ISAR-COOL= Intracoronary Stenting With Antithrombotic Regimen Cooling Off (study)
NSTE= non-ST elevation
TIMACS= Timing of Intervention in Patients With Acute Coronary Syndromes (study)

ABSTRACT

BACKGROUND An invasive approach is currently considered superior to medical management for the treatment of patients with non-ST-elevation acute coronary syndromes (ACS) (NSTEMI-ACS). However, the optimal timing of coronary angiography and subsequent intervention, if indicated, i.e. immediately after admission or after pre-treatment with optimal medical therapy including potent antiplatelet agents, has not been settled. Thrombotic material in patients with unstable angina may increase the risk of immediate coronary intervention and there is concern that adverse events such as myocardial infarction may be increased with routine early intervention. Thus, delayed catheterization to allow plaque passivation by pre-treatment with optimal antithrombotic medication has been proposed, particularly since the effectiveness of invasive strategies has been enhanced by the widespread use of glycoprotein IIb/IIIa inhibitors.

METHODS We have conducted a meta-analysis of randomized trials addressing the optimal timing (early versus delayed) of coronary angiography in NSTEMI-ACS. Four trials with 4013 patients were eligible (ABOARD, ELISA, ISAR-COOL, TIMACS), and data for longer follow-up periods than those published were contributed to the meta-analysis by the ELISA and ISAR-COOL investigators.

RESULTS The median time from admission or randomization to coronary angiography ranged from 1.16 to 14 hours in the early, and 20.8 to 86 hours in the delayed strategy group. No statistically significant difference of risk of death (random effects risk ratio 0.85, 95% CI 0.64 to 1.11) or myocardial infarction (risk ratio 0.94, 95% CI 0.61 to 1.45) was detected between the two strategies. The risk for recurrent ischemia was significantly reduced for patients assigned to the early strategy (risk ratio 0.59, 95% CI 0.38 to 0.92, $p=0.02$). Furthermore, a trend towards decreased major bleeding events (risk ratio 0.78, 95% CI 0.57 to 1.07, $p=0.13$) was observed with the early strategy.

CONCLUSION Early coronary angiography and potential intervention in patients with NSTEMI-ACS reduces the risk of recurrent ischemia and might also reduce major bleeding complications, without affecting mortality and myocardial infarction compared to a delayed strategy.

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