

An invasive strategy reduced death, myocardial infarction, and readmissions in unstable coronary artery disease

Wallentin L, Lagerqvist B, Husted S, et al., for the FRISC II Investigators. Outcome at 1 year after an invasive compared with a non-invasive strategy in unstable coronary-artery disease: the FRISC II invasive randomised trial. *Lancet*. 2000 Jul 1;356:9-16.

QUESTION

In patients with confirmed unstable coronary artery disease, is an invasive strategy more effective than a noninvasive strategy for reducing death, myocardial infarction (MI), readmission, or further cardiac procedures?

DESIGN

Randomized 2 × 2 factorial, {allocation concealed*}†, blinded {outcome assessor},* placebo-controlled trial with 1-year follow-up (Fragmin and Fast Revascularisation during Instability in Coronary Artery Disease II [FRISC II] trial).

SETTING

58 Scandinavian centers.

PATIENTS

2457 patients (mean age 65.5 y, 70% men) who had ischemia that was increasing, occurring at rest, or suggestive of MI and confirmed using electrocardiography or cardiac enzyme levels. Exclusion criteria were potential bleeding or anemia, need for or treatment with thrombolysis in the previous 24 hours, recent angioplasty, waiting for revascularization, other serious illness, age > 75 years, or otherwise being inappropriate for cardiac interventions. Follow-up was > 99%.

INTERVENTION

Patients were allocated to long-term daltoparin or placebo {reported elsewhere}‡ and to an early invasive ($n = 1222$) or non-invasive ($n = 1235$) strategy. The invasive strategy included immediate angiography and revascularization if warranted. The noninvasive group had angiography if symptoms, severe angina, or exercise testing before discharge warranted it and had invasive revascularization for incapacitating symptoms, severe exercise-induced angina, recurrence of instability, or MI.

MAIN OUTCOME MEASURES

Death or MI combined or alone, readmission, and any cardiac intervention after the first admission.

MAIN RESULTS

Patients in the early invasive-strategy group had lower rates of combined death or

MI ($P = 0.005$), death ($P = 0.016$), MI ($P = 0.015$), readmission at 1 year ($P < 0.001$), and having any cardiac procedure after first admission ($P < 0.001$) (Table).

CONCLUSION

An early invasive strategy for patients with unstable coronary artery disease reduced death, myocardial infarction, readmission, and need for further cardiac procedures.

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*See Glossary.

†Information provided by author.

‡The FRISC Investigators. *Lancet*. 1999; 354:701-7.

Early invasive vs noninvasive strategies for unstable coronary artery disease§

Outcomes at 1 y	Invasive	Noninvasive	RRR (95% CI)	NNT (CI)
Death or myocardial infarction	10%	14%	26% (8 to 40)	27 (16 to 92)
Death	2.2%	3.9%	43% (10 to 64)	60 (32 to 306)
Myocardial infarction	9%	12%	25% (5 to 41)	35 (19 to 198)
Readmission	37%	57%	35% (29 to 41)	5 (4 to 6)
Cardiac interventions after discharge	8%	31%	76% (70 to 80)	5 (4 to 5)

§Abbreviations defined in Glossary; RRR, NNT, and CI calculated from data in article.

COMMENTARY

The 1-year FRISC II trial compares an early invasive strategy with conservative management of patients who have acute coronary artery disease with non-ST-segment elevation. The early invasive approach had a 43% reduction in mortality rate and a 25% reduction in the number of MIs. The benefit of the early invasive strategy increased during follow-up.

In contrast to the Thrombolysis in Myocardial Infarction IIIB (1) and Veterans Affairs Non-Q-Wave Infarction Strategies in Hospital (2) trials, FRISC II provides compelling evidence that an invasive approach during initial hospitalization saves lives and decreases the rate of MIs. FRISC II is unique among these trials because it combines aggressive use of revascularization with abciximab and stents. We still do not know whether the same benefit can be obtained by using catheterization within the first 2 to 3 days after admission, as is common practice in the United States, or whether the slightly longer "cooling-off" period provided additional benefit. The outcomes in

FRISC II provide strong evidence that an early invasive strategy with coronary angiography, and revascularization if indicated, provides the best outcome for most patients with acute coronary artery disease.

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