PROSPECT II

CLINICAL TRIAL SUMMARY

Presenters	Uppsala University
Objectives	To investigate the natural progression of unstable atherosclerotic coronary artery disease, with a focus on assessing the effectiveness of low-risk intracoronary imaging techniques, IVUS and NIRS, in identifying plaques that are likely to rupture and cause future clinical events. .

https://clinicaltrials.gov/study/NCT02171065

TRIAL DESIGN

Multicenter, prospective, natural history study

SAMPLE SIZE

Of 898 patients, 199 with 849 nonculprit lesions had STEMI and 699 with 2784 nonculprit lesions had NSTEMI.

INCLUSION CRITERIA

- Troponin-positive ACS (STEMI >12h or NSTEMI) within 4 weeks, with ischemic symptoms >10 minutes, planned for angiography and PCI.
- Patient must have one-, two-, or three-vessel native coronary artery disease requiring PCI
- Patients should have successful PCI

METHODOLOGY

- Patients with recent myocardial infarction underwent three-vessel coronary angiography using combined near-infrared spectroscopy (NIRS) and intravascular ultrasound (IVUS) after successful PCI of the culprit lesion.
- High-risk plaques were defined by a plaque burden ≥70% and a lipid core burden index (LCBI) ≥324.7 in any 4-mm segment.
- The primary outcome was major adverse cardiovascular events from untreated nonculprit lesions over a median follow-up of 3.7 years..

RESULTS

Nonculprit lesion characteristics were similar between STEMI and NSTEMI patients, with median lesion lengths of 17.4 mm vs. 17.7 mm (*P*=0.63) and minimal lumen areas of 5.5 mm² in both groups (*P*=0.99).

Two-feature high-risk plaques were slightly more frequent at the lesion level in STEMI patients (12.8%) than NSTEMI (10.1%), but similar at the patient level (38.8% vs. 32.7%).

Four-year rates of nonculprit lesion-related major adverse cardiovascular events were 8.6% for STEMI vs. 7.8% for NSTEMI (HR 1.02; 95% CI, 0.57–1.81; *P*=0.95), and overall MACE rates were 14.2% vs. 13.0% (HR 1.06; 95% CI, 0.68–1.64; *P*=0.80).

CONCLUSION

STEMI and NSTEMI patients showed a similar per-patient prevalence of high-risk vulnerable plaques, as well as comparable long-term rates of nonculprit lesion–related and overall major adverse cardiovascular events. These findings suggest that a similar approach to managing nonculprit lesions may be appropriate for both STEMI and NSTEMI patients after treating the culprit lesion.

Thrane PG, Maeng M, Maehara A, et al. Nonculprit Vulnerable Plaques and Prognosis in Myocardial Infarction With Versus Without ST-Segment Elevation: A PROSPECT II Substudy. *Circulation*. 2025;151(25):1767-1779. doi:10.1161/CIRCULATIONAHA.124.071980