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Survival of Patients with Angina Pectoris
Undergoing Percutaneous Coronary
Intervention with Intracoronary Pressure
Wire Guidance

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Abstract

Background:

Intracoronary pressure wire measurement of fractional flow reserve (FFR) provides decision-making guidance during percutaneous coronary intervention (PCI). However, limited data exist on the effect of FFR on long-term clinical outcomes in patients with stable angina pectoris.

Objectives:

The purpose of this study was to determine the association between the usage of FFR and all-cause mortality in patients with stable angina undergoing PCI.

Methods:

Data was used from the SCAAR (Swedish Coronary Angiography and Angioplasty Registry) on all patients undergoing PCI (with or without FFR guidance) for stable angina pectoris in Sweden between January 2005 and March 2016. The primary endpoint was all-cause mortality, and the secondary endpoints were stent thrombosis (ST) or restenosis and peri-procedural complications. The primary model

was multilevel Cox proportional hazards regression adjusted with Kernel-based propensity score matching.

Results:

In total, 23,860 patients underwent PCI for stable angina pectoris; of these, FFR guidance was used in 3,367. After a median follow-up of 4.7 years (range 0 to 11.2 years), the FFR group had lower adjusted risk estimates for all-cause mortality (hazard ratio: 0.81; 95% confidence interval [CI]: 0.73 to 0.89; $p < 0.001$), and ST and restenosis (hazard ratio: 0.74; 95% CI: 0.57 to 0.96; $p = 0.022$). The number of peri-procedural complications did not differ between the groups (adjusted odds ratio: 0.96; 95% CI: 0.77 to 1.19; $p = 0.697$).

Conclusions:

In this observational study, the use of FFR was associated with a lower risk of long-term mortality, ST, and restenosis in patients undergoing PCI for stable angina pectoris. This study supports the current European and American guidelines for the use of FFR during PCI and shows that intracoronary pressure wire guidance confers prognostic benefit in patients with stable angina pectoris.

Keywords:

Coronary artery disease, fractional flow reserve, percutaneous coronary intervention, stable angina pectoris.

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Observational Study

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