Abstract: 1154

FFR guided acute complete revascularization versus culprit lesion only treatment in patients presenting with STEMI and multi vessel disease; final 3-year outcome data from Compare-Acute trial

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Background.
Compare-Acute trial showed a 1-year superior outcome of FFR-guided acute complete revascularization (FFR-CR) compared to culprit-lesion-only revascularization (CLO) in patients presenting with ST-segment elevation myocardial infarction (STEMI) and multi-vessel disease (MVD). Long-term outcome results are unknown.

Purpose.
To evaluate if FFR-CR strategy is superior to CLO strategy in terms of outcome at 3 year follow-up.

Methods.
Compare-Acute is a multicenter, investigator-initiated prospective randomized controlled trial that involved 24 sites. Patients with STEMI and MVD were randomized, after successful primary PCI towards FFR-CR or CLO treatment strategies with a 1:2 ratio (295 pts vs 590 pts). All stenosis = 50% in the non-infarct artery were investigated by FFR in both arms. In the FFR-CR arm, all non-culprit (NC) lesions with a FFR = 0.80 were treated by PCI. In the CLO arm pts underwent blinded FFR procedure of the NC lesions. Further treatment of these lesions was based on symptoms and/or ischemia testing during follow-up with an allowed treatment window of 45 days. The primary endpoint was defined as a composite of all-cause mortality, non-fatal myocardial infarction, any revascularization and cerebrovascular events (MACCE) at 12 months. The major secondary endpoint is MACCE from both strategies up to 3-year follow-up.

Results.
1-year clinical outcomes have already been presented and published. At 36 months the composite end-point of MACCE occurred in 46 patients in the FFR-CR group vs 178 patients in the CLO group (15.6% vs 30.2%; HR 0.46 – 95% CI 0.29-0.59; p < 0.01), as shown in Fig. 1. The incidence of death (4 pts vs 10 pts; 1.4% vs 1.7%; HR 0.86 – 95% CI 0.39-1.8; p = 0.71), MI (20 pts vs 53 pts; 7.1% vs 9.3%; HR 0.74 – 95% CI 0.44-1.24; p = 0.25) and stroke (1 pt vs 7 pts; 0.3% vs 1.2%; HR 0.29 – 95% CI 0.03-2.3; p=0.24) was not significantly different in the two groups, but revascularizations were significantly higher in the CLO group: 37 patients in the FFR-CR group vs 149 patients in the CLO group (13.0% vs 26.0%; HR 0.45; 95% CI 0.31-0.64; p < 0.01). Furthermore, in a subgroup analysis, when we considered only patients with FFR positive non-culprit lesions in both arms, we found a higher incidence of MI at follow-up in the CLO arm compared to the FFR-CR arm: 30/224 vs 13/194 (13.4% vs 6.7%; p 0.03).

Conclusion.
With this analysis of the Compare-Acute trial we confirm that the benefit of a FFR-guided complete
revascularization strategy in patients with STEMI and MVD is maintained at 3 years of follow-up. This difference is mainly driven by increased revascularizations in the CLO arm, but also by increased incidence of MI in the CLO subgroup with FFR+ lesions that were left untreated.