Abstract: 1156

Coronary artery bypass grafting vs. FFR-guided PCI in diabetic patients with multivessel disease

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Topic(s):
Fractional Flow Reserve

Citation:
Background: In diabetic patients with multivessel coronary disease (MVD), coronary artery bypass grafting (CABG) has shown long-term benefits in mortality over percutaneous coronary revascularization (PCI). Nevertheless, the impact of fractional flow reserve (FFR)-guided PCI on clinical outcomes has never been investigated in these patients.

Purpose: To evaluate the long-term (5-year) clinical outcome of diabetic patients with MVD treated with FFR-guided PCI compared to CABG.

Methods: From February 2010 to February 2018, all diabetic patients undergoing coronary angiography in one centre (n=4622) were screened for inclusion. The inclusion criterion was presence of at least two-vessels CAD defined as with diameters stenosis = 50%. In case of intermediate coronary stenosis (%DS 30-70%), FFR was performed at the discretion of the operator. Revascularization was performed when FFR = 0.80. Exclusion criteria were ST-elevation myocardial infarction, prior CABG, and moderate or severe valvular heart dysfunction.

To account for confounders, we compared outcomes by calculating an adjusted Kaplan-Meier estimator using inverse probability of treatment weighting (IPTW). Propensity score variables included age, sex, smoking habit, hypertension, hyperlipidemia, insulin therapy, family history of CAD, chronic obstructive pulmonary disease (COPD), glomerular filtration rate (GFR), prior myocardial infarction, peripheral vascular disease (PVD), admission for NSTEMI, ejection fraction, number of angiographic stenotic vessels. Odds ratios were calculated using generalized linear models (GLM). The primary endpoint was major adverse cardiovascular and cerebrovascular events (MACCE), defined as all-cause death, myocardial infarction and stroke. Secondary endpoints were the individual component of MACCE and any repeated revascularization.

Results: A total of 538 diabetic patients with MVD were included in the analysis. Among them, 317 (59%) patients underwent CABG and 221 (41%) FFR-guided PCI.

Patients treated with FFR-guided PCI had more often COPD as compared to patients in the CABG-group, but patients treated with CABG had lower GFR, more PVD, higher number of angiographic stenotic vessels (2.8 ± 0.4 vs. 2.5 ± 0.5; p<0.01) and higher Syntax score (20 ± 7 vs. 14 ± 6; p<0.01) as compared to the FFR-guided PCI group.

Clinical follow-up was obtained in 95% of the patients at a median follow-up of 5 years. The incidence of MACCE was similar in the CABG and in the FFR-guided PCI group [27% vs. 29%; OR (95% CI) 1.05 (0.68-1.63); p = 0.74]. No differences were found in the individual components of MACCE. Repeat revascularization was more frequent in the FFR-guided PCI group than in the CABG group [27% vs. 7%; OR (95% CI) 4.3 (2.35-7.9); p < 0.01].

Conclusions: In diabetic patients with MVD undergoing FFR-guided PCI, no differences in major adverse events were observed at a median follow-up of 5 years compared with CABG.
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