

## Predictors and 3-Year Outcomes of Compromised Left Circumflex Coronary Artery After Left Main Crossover Stenting

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**Abstract :** Background: Predictors of decreased fractional flow reserve at left circumflex coronary artery after left main (LM) crossover stenting are still lacking. The objectives of the present study were to provide the predictors for low Fractional flow reserve (FFR) at coronary artery (LCx) and the possible treatment strategies for the compromised LCx-together with their long term outcomes. Methods: A total of 563 included patients out of 1974 patients admitted to our hospital from February 2015 to November 2020 with significant distal LM-bifurcation lesions. The enrolled patients underwent single-stent cross-over PCI under IVUS guidance with further LCx intervention as indicated by measured FFR. Results: The included patients showed angiographic significant LCx ostial affection after LM-stenting, but only 116 (20.6%) patients had FFR <0.8. The 3-year composite MACE rates were comparable between the high and low FFR groups (16.8% vs. 15.5%, respectively; P=0.744). In a multivariable analysis, a low FFR in the LCx was associated with post-stenting MLA of the LCx (OR: 0.032, P <0.001), post-stenting LCx-plaque burden (OR: 1.166, P <0.001), post-stenting LM-MLA (OR: 0.821, P =0.038) and pre-stenting LCx-MLA (OR: 0.371, P =0.044). In patients with low FFR, management of compromised LCx with DEB had the lowest 3-year MACE rate (8.1%) as compared to either KBI (17.5%) or stenting group (20.5%), P =0.299. Conclusion: FFR-guided LCx intervention can avoid unnecessary LCx intervention. The post-stenting predictors of low FFR include post-stenting MLA and plaque burden of the LCx and MV stent length. The 3-year MACE rates were comparable between high FFR patients and patients who had low FFR and were adequately managed.

**Keywords :** fractional flow reserve, left main stem, percutaneous coronary interventions, intravascular ultrasound

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