

Six-Month Clinical Outcomes of Patients Deferred from Angioplasty based on Fractional Flow Reserve

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Background: Fractional flow reserve (FFR) has become the gold standard in physiologic assessment of coronary artery stenosis. A FFR value ≥ 0.75 is considered a reliable physiologic parameter indicating a functionally non-significant lesion.

Objective: To evaluate the clinical outcomes of "real world" patients deferred from angioplasty based on FFR measurements and clinical judgment.

Methods: The FFR measurement was performed in 119 patients (120 vessels) that were referred to the catheterization laboratory for evaluation of coronary artery disease and had an intermediate grade stenosis in their angiograms. Mean age was 63 ± 12 yrs and 77% were males. Patient's risk factors for ischemic heart disease were: diabetes in 43%, hypertension in 70% and dyslipidemia in 85%. The clinical presentation was stable angina in 45% and acute coronary syndrome (excluding those with myocardial infarction < 5 days) in 40%. The angiographic findings revealed multivessel disease in 55%. The culprit lesions were in the LAD in 58%, in the CX in 22% and in the RCA in 13%. Mean % diameter stenosis was 54 ± 12 with a mean FFR value of 0.8 ± 0.1 .

Results: Based on FFR measurements and clinical judgment, patients were treated by angioplasty with stent deployment in 39% of the cases (mean FFR= 0.78 ± 0.1 at baseline, increased to 0.92 ± 0.05 post angioplasty) and by conservative medical treatment (mean FFR= 0.88 ± 0.06) in 61%. Six-month follow-up of all the patients included in this cohort revealed MACE=2.7% in the patients treated conservatively compared to MACE=7.0% in the patients treated by angioplasty ($p=0.4$).

Conclusion: In "real world" patients with intermediate grade coronary lesions, the defer of angioplasty based on FFR measurement combined with clinical judgment seems to be a viable strategy with good six-month clinical outcomes.