

**FFR- VERSUS ANGIOGRAPHY-GUIDED PERCUTANEOUS CORONARY
INTERVENTION: COMPARATIVE ANALYSIS OF IMMEDIATE
OUTCOMES IN PATIENTS WITH CORONARY ARTERY DISEASE**

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Fractional flow reserve (FFR) provides physiological assessment of coronary stenosis during PCI, while angio-guided PCI relies solely on anatomical evaluation. Comparative safety and revascularization patterns between these approaches remain understudied in Central Asian populations. We compared immediate outcomes between FFR-guided and angiography-guided PCI strategies.

This prospective comparative study enrolled 20 patients with coronary artery disease between April 2024 and March 2025 at the Republican Specialized Scientific and Practical Medical Center of Cardiology in Tashkent. Patients underwent either FFR-guided (n=11, mean age 68.6 years) or angiography-guided (n=9, mean age 61.2 years) revascularization. The FFR-guided cohort had higher cardiovascular risk: diabetes mellitus (72.7% vs 11.1%), prior myocardial infarction (100% vs 55.6%), and heart failure (100% vs 88.9%). All patients had hypertension. FFR threshold ≤ 0.80 indicated hemodynamically significant stenoses. Primary endpoints included revascularization rates and procedural success. Secondary endpoints assessed in-hospital major adverse cardiac events.

FFR-guided assessment enabled selective revascularization: one patient with FFR 0.99 avoided unnecessary PCI, resulting in 90.9% (10/11) revascularization rate. Post-procedural FFR confirmed optimal results (0.79→0.95). Technical success was 100% in the FFR-guided group. Angiography-guided strategy yielded 77.8% (7/9) revascularization rate. One patient in the angiography-guided group developed right coronary artery perforation, managed successfully without major adverse outcomes, resulting in 88.9% (8/9) technical success. The FFR-guided cohort experienced zero complications. Despite significantly higher baseline comorbidity burden in the FFR-guided cohort, no deaths, myocardial infarctions, or urgent revascularizations occurred in either group. All patients showed clinical improvement at discharge.

Both FFR-guided and angiography-guided PCI strategies demonstrated excellent overall immediate safety in this comparative analysis. FFR guidance enabled evidence-based deferral of intervention in functionally non-significant lesions while confirming optimal procedural results, strongly supporting routine physiological assessment integration into clinical practice for personalized revascularization decisions.