

Functional testing in coronary bypass grafts

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This paper offers options in defining physiological severity of graft stenosis and resolving ambiguous anatomic issues with functional testing of bypass grafts, for accomplishing successful percutaneous coronary interventions. Ostial lesion position and often ambiguous separation of left internal mammary artery (LIMA), from subclavian artery demands meticulous angiographical or functional assessment and accurate stent positioning. In European Society of Cardiology (ESC) guidelines invasive functional testing is nowadays classed with IA level of evidence for percutaneous coronary revascularization, because it provides reduction in clinical outcome and lowers procedural costs. But these data are completely cultivated through native epicardial arteries. Relatively small trial from Serafino *et al*¹ found that fractional flow reserve (FFR) could be available in invasive functional testing of graft conduits. This trial tested outcomes after FFR versus angio-guided percutaneous coronary intervention (PCI) in 233 patients and found better clinical and economical outcomes with significant major adverse cardiovascular events (MACE) reduction. Newer methods like iFR® (instantaneous wave-free ratio) offers slightly different approach measuring a part of diastolic cardiac cycle, that is „wave-free“ with minimized microvascular resistance. iFR physiology testing in early trials showed non inferiority to FFR in native coronary artery.² While FFR cutting point was 0.8, iFR cutting point was slightly elevated - 0.89. iFR was never tested in arterial or venous graft conduits through randomized trials. The important question that arises is the question of the position of iFR wire when measuring the stenosis in LIMA. Whether it is necessary to zero the wire in the area of the subclavian artery or the root of the aorta. Nevertheless, based on previously knowledge and experience we functionally tested several bypass grafts stenosis with iFR, and result was clinically utilized in practice.

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LITERATURE |||||

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