

Better Understanding of Myocardial Ischemia in Heart Failure

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The most common cause of heart failure with reduced ejection fraction (HFrEF) is coronary artery disease. A multitude of factors come into play when deciding whether a patient with HFrEF and coronary artery disease should have coronary artery bypass graft (CABG) surgery, percutaneous coronary intervention, or medical therapy alone and the presence and magnitude of hibernating myocardium, degree of LV remodeling, completeness of revascularization, optimization of medical therapy, and associated co-morbidities all can affect the outcomes.

Decades of observational studies and several meta-analyses have provided positive evidence for the role of revascularization in hibernating myocardium in improving survival. As LV dysfunction with significant myocardial ischemia may be partially or completely reversible by revascularization in the presence of viable myocardium, viability test has become a gatekeeper to revascularization – the presence of a substantial amount of hibernating myocardium has generally been a stimulus for revascularization whereas a significant amount of scar tissue with little hibernating myocardium has often triggered optimal medical therapy alone.

However, recent results from prospective randomized controlled trials (RCTs) examining the management of patients with ischemic cardiomyopathy (ICM) have questioned both the added value of revascularization over contemporary optimal medical therapy and the use of viability testing in guiding management decisions or influencing mortality. Each of these studies, however, had significant methodological limitations and thus there remains considerable debate about the role of revascularization and of viability testing in ICM patients.

ICM patients remain a clinical conundrum. The numerous limitations of the recent RCTs have led to uncertainty about optimal management. Revascularization continues to be offered to patients with evidence of myocardial viability. Further studies are required to answer the outstanding questions in the management of patients with ICM. And there is an absolute need for prospective study of the patients with heart failure syndrome having coronary lesions rather than angina patients with LV dysfunction.