Role of viability for percutaneous coronary interventions in heart failure patients

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Introduction: Main etiology for left ventricular systolic dysfunction (LVSD) and also heart failure (HF) remains coronary artery disease (CAD).[1] The incidence of HF in patients with CAD has significantly increased, due to the advanced techniques in percutaneous interventions, technical advancement and newer medical treatment that improved survival. Nevertheless, LVSD, the repercussion of CAD is associated with excess of morbidity and mortality. Primary endpoint of cardiovascular death, nonfatal MI, hospitalization or cardiac arrest over 4 years was higher in patients with HF or LVSD (≤35%) in comparison to patients without HF symptoms or LVSD. Moderate documented ischemia on imaging tests, or severe ischemia on exercise tests associated with HF or LVSD in ISCHEMIA trial (The International Study of Comparative Health Effectiveness With Medical and Invasive Approaches) highlighted lower cardiac events in the invasive group when compared to the conservative group. Does viability assessment have important part of the clinical work up prior to revascularization in patients with HF, as the presence of viable myocardium is more likely to lead to prognostic benefits following successful revascularization? The most widely used tests for myocardial viability assessment are single photon emission computed tomography (SPECT), positron emission tomography, cardiac magnetic resonance imaging and dobutamine stress echocardiography.

Case report: We provided case report in newly detected decompensated ischemic cardiomyopathy patient with severe chronic CAD – stenosis of ostium of left anterior descending artery and right coronary artery. Echo study showed LVSD and HF with left ventricular systolic fraction of 33%, and SPECT examination did not found deficit of viability in left ventricle. After heart team evaluation patient has been referred for percutaneous coronary revascularization. Our team believes that viability scan can have a role in predicting functional recovery.

Conclusion: The search for viability in HF patients improves the responder screening and can direct us in towards better long-term clinical outcome given the significant reduction in all-cause mortality.

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LITERATURE

1. Ezad SM, McEntegart M, Dodd M, Didagelos M, Sidik N, Li Kam Wa M, et al; REVIVED-BCIS2 Investigators. Impact of Anatomical and Viability-Guided Completeness of Revascularization on Clinical Outcomes in Ischemic Cardiomyopathy. J Am Coll Cardiol. 2024 Jul 23;84(4):340-350. https://doi.org/10.1016/j.jacc.2024.04.043