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Off pump coronary revascularization in ischemic heart failure; immediate and long term benefits

Introduction: Ischemic Heart Failure is the most common cause of Heart failure and can be recent onset because of Acute coronary syndrome or chronic when patients seek treatment late following myocardial infarction. Both can be treated by myocardial Revascularisation however some studies have shown results of off pump surgical revascularisation were better than conventional on pump surgery.

Methods: Off pump Revascularisation was performed in 6442 patients among them 1206 had ischemic heart failure (472 – ACS, 109 had cardiogenic shock). Those presenting within 12 hours of onset of ACS with low TROPONIN I levels and those hemodynamically unstable or with ventricular arrhythmias/revived post cardiac arrest irrespective of Troponin level were revascularised immediately while remaining were medically optimised and then revascularised. Those with complete occlusion of coronary artery with doubtful myocardial viability on echocardiography had PET or Thallium scan to assess viability before revascularization. IABP was inserted preoperatively with low threshold in hemodynamically unstable patients and those with high pulmonary diastolic pressures. Complete revascularisation was aimed at using octopus stabiliser, intracoronary shunt and urchin elevator. Post operatively mechanical ventilation

was continued till patients became hemodynamically stable and after discharge patients were followed up after one week, four weeks three months and subsequently six monthly for 5 years. Echocardiography was performed three months and twelve months after surgery. In patients who had recurrent symptoms 64 slice CT Angiogram was performed to look for graft occlusion or progression of native vessel disease.

Results: Acute renal failure was seen in 42 patients and 31 required hemodialysis. Mortality was 9 in patients with cardiogenic shock and 38 in stable patients (Cardiogenic shock, Renal failure, Multiorgan failure and sepsis were main causes). Mean improvement in LVEF was 10.4 % in ACS while in chronic ischemic heart failure it was 5.2%. Majority of patients who came for 5 year follow up had good control of symptoms while those who became symptomatic majority had native vessel disease progression with poor run off leading to graft failure.

Conclusion: Off pump Revascularisation is safe with low morbidity and mortality with good long term benefits. Results are better in patients who presented early with significant myocardial viability and cause of recurrence of symptoms is mostly due to native vessel disease progression.

Biography

Deepak Puri is the former Director Cardiovascular and Thoracic Surgery Max Superspecialty Hospital Mohali, India, additional Director of Fortis Healthcare Mohali, India and Assistant Professor PGIMER Chandigarh. He has 65 publications in reputed International and National Journals. He received several national and international awards. He was the former Vice President Chandigarh Surgical Society and IGMC Alumni Society, India. He is the Convener of cardiovascular Sciences National Stem Cell Regenerative Medicine and Anti-AGING Society of India and editor in Chief CTVS and reviewer several reputed international journals. He also serves as a visiting Surgeon at Leipzig Heart Centrum Germany, Swedish Medical Center Seattle Washington USA and University of Maryland Medical Center Baltimore USA. He has vast experience of OPCAB surgeries in high-risk patients like acute MI, Ischemic Heart Failure and Cardiogenic shock. His keen interest in minimally invasive and cosmetic incisions for the closure of septal defects, thymectomies, cardiac resynchronisation therapy, pericardectomies, PDA closure, valve surgeries, vascular surgeries and endovascular surgeries, thoracic surgeries and several own innovative techniques published in International journals. Also, he has successfully repaired several penetrating cardiac injuries and been part of Liver and Renal Transplant team.

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