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Is Bilateral Internal Thoracic Artery Grafting Contraindicated in Patients with Severe Left Ventricular Dysfunction?

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Objective: Most surgeons are reluctant to use Bilateral Internal Thoracic artery (BITA) grafting in patients with severe left ventricular dysfunction (LVD). The purpose of this study is to compare long-term outcome of this subset of patients with that of patients with normal or moderately impaired left ventricular function.

Methods: Between 1996 and 2001 140 consecutive patients with LVD (EF < 35%) underwent skeletonized BITA grafting at our institute. They were compared with 1375 BITA patients with EF > 35%. After propensity score matching, two groups (134 patients each) were used to evaluate the effect of LVD on long term outcome.

Results: After matching, the two groups were similar except for increased prevalence of acute MI in patients with EF < 35%. Thirty days mortality, as well as occurrences of major morbidity events (perioperative MI, stroke and sternal infection) were similar in the two groups. Actuarial (Kaplan-Meier) 10 year survival of patients with EF > 35% was 65%, compared to 62% when 35%>EF>25%, and 43% in patients with EF < 25% (p=0.064, Log-Rank test). EF < 25% was found to be an independent predictor of decreased survival (H.R. 1.92, 95% CI 1.04-5.26). Other predictors of decreased survival were age, diabetes and COPD.

Conclusion: BITA grafting in patients with LVD is safe and associated with long-term survival similar to that of patients with better LV function. However, patients with EF < 25% had decreased survival and prospective studies are required to evaluate the contribution of the second ITA to their late outcome.