

Advances in Patient and Economic Outcomes Associated with Left Ventricular Assist Devices for Destination Therapy

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BACKGROUND. Destination therapy (DT) using left ventricular assist devices (LVADs) prolongs survival and quality of life for end stage heart failure patients ineligible for heart transplantation. Studies evaluating patient and economic outcomes published to date are based on the Randomized Evaluation of Mechanical Assistance for the Treatment of Congestive Heart Failure (REMATCH) trial, which enrolled patients from 1998 through 2001. Since that time, device, surgical, and patient care improvements may have improved patient and economic outcomes.

METHODS. We conducted a retrospective analysis of post-REMATCH patients and gathered information on date of implant; duration and costs of implant hospitalizations; frequency, duration, cause, and costs of re-admissions; and mortality. We compared LVAD DT clinical and economic outcomes from the entire REMATCH study (RE), late-REMATCH patients (LR), and post-REMATCH patients (PR).

RESULTS. The RE cohort included 52 patients; the LR included 34 patients who received an LVAD after January 2000; and PR included 13 DT patients implanted between January 2003 and March 2004. We gathered 603, 624 and 87 cumulative months of follow-up data for the RE, LR, and PR groups. Survival during the initial implant hospitalization was 67% for RE, 79% for LR, and 92% for PR ($p=0.07$). PR patients had significantly shorter hospital LOS (mean 26 days) compared to RE patients (44 days, $p=0.001$) and LR patients (46 days, $p<0.001$). PR patients had a significantly lower mean cost of LVAD implantation compared to RE patients (\$141,000 vs. \$210,000, $p<0.001$). Re-hospitalizations were frequent across the three groups, although their frequency and costs showed improvement in the PR group.

CONCLUSIONS. Clinical and economic outcomes associated with LVADs for DT have improved, especially in the post-REMATCH era. These improvements should enhance its financial viability and cost-effectiveness.