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Percutaneous placement of an intra-aortic balloon pump in the left axillary/subclavian position provides safe, ambulatory long-term support as bridge to heart transplantation

Estep, J.D.[a], Cordero-Reyes, A.M.[a], Bhimaraj, A.[a], Trachtenberg, B.[a], Khalil, N.[a], Loebe, M.[b], Bruckner, B.[b], Orrego, C.M.[a], Bismuth, J.[b], Kleiman, N.S.[a], Torre-Amione, G.[a,c]
[a]The Methodist DeBakey Heart and Vascular Center, Department of Cardiology, Houston, TX, United States
[b]The Methodist DeBakey Heart and Vascular Center, Department of Surgery, Houston, TX, United States
[c]Catedra de Cardiología y Medicina Vascular, Escuela de Medicina, Tecnológico de Monterrey, Monterrey, México

Objectives: This study evaluated the feasibility, tolerability, and efficacy of a strategy for percutaneous intra-aortic balloon pump (IABP) placement through the left axillary-subclavian artery to provide mechanical circulatory support in patients with end-stage heart failure as a bridge to heart transplantation. Background: The transfemoral approach to IABP placement is associated with major disadvantages, including the risk for infection and limitation of patient mobility in those requiring extended support. Methods: We developed a percutaneous technique for placing IABPs in the left axillary artery that permits upright sitting and ambulation. We performed a retrospective review of data from patients who had undergone left axillary IABP implantation between 2007 and2012. Results: Fifty patients who received a left axillary IABP as a bridge to transplantation were identified, of whom 42 (84%) underwent heart or heart-multiorgan transplantation. Cumulative survival on IABP support was 92%, and post-transplant 90-day survival was 90%. Median duration of support was 18 days. Four of 50 patients (8%) died while on IABP support, and 3 (6%) received greater mechanical circulatory support. Four patients (8%) had clinically significant thromboembolic or bleeding events without long-term sequelae. The most common minor adverse event was IABP malposition, in 22 patients (44%). Prolonged IABP support in the heart-transplantation cohort was associated with significant improvements in mean pulmonary artery pressure and in creatinine and total bilirubin concentrations. Conclusions: Percutaneous insertion of an IABP through the left axillary artery is a feasible and relatively well-tolerated strategy tobridge patients with end-stage heart failure to heart transplantation. This form of mechanical-device treatment permits upright sitting and ambulation in those requiring extended support.

SciVal Topic Prominence
Topic: Intra-Aortic Balloon Pumping | Counterpulsation | Coronary Artery Bypass
Prominence percentile: 72.970

Reaxys Database Information

View Compounds

Author keywords
CXR; Heart failure; Heart transplant; HF; IABP; Intra-aortic balloon pump; LVAD; OHT; Subclavian artery

Indexed keywords

EMTREE drug terms:	Bilirubin; creatinine
EMTREE medical terms:	Adult; article; assisted circulation; balloon catheter; balloon rupture; bilirubin blood level; cardiovascular disease; clinical article; clinical effective; ness; cohort analysis; controlled study; creatinine blood level; device removal; feasibility study; female; guide wire; heart failure; heart transplantation; human; intraaortic balloon pump; limb ischemia; long term care; lung artery pressure; male; mechanical circulatory support; medical device complication; needle; orthotopic heart transplantation; paresthesia; pneumothorax; priority journal; retrospective study; safety; subclavian artery; survival rate; thromboembolism; transient ischemic attac; kaxillary artery; heart assist device; heart failure; heart transplantation; middle aged; patient safety; procedures; prosthesis implantation; time
MeSH:	Axillary Artery; Feasibility Studies; Female; Heart Failure; Heart Transplantation; Heart-Assist Devices; Humans; Intra-Aortic Balloon Pumping; Male; Middle Aged; Patient Safety; Prosthesis Implantation; Retrospective Studies; Subclavian Artery; Time Factors

Chemicals and CAS Registry Numbers:
bilirubin, 18422-02-1, 635-65-4; creatinine, 19230-81-0, 60-27-5

Device tradename:
J tip

Manufacturers:
Device manufacturer:
Argon, United States;
Cordis, United States;
Maquet, Germany

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