

Total Artificial Heart as a Bridge to Simultaneous Heart-liver Transplantation: Single Center Experience

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Objectives: Simultaneous heart-liver transplantation (SHLT) is a lifesaving procedure for patients suffering from coincident end-stage heart and liver disease. Total artificial hearts (TAH) provide mechanical circulatory support in patients with biventricular failure awaiting cardiac transplantation. However, there is limited data on the outcomes of SHLT recipients with TAH as a bridge to transplantation.

Methods: Retrospective analysis of all SHLT performed at our center (09/2013 to 05/2018) was performed. Demographics are reported as mean \pm standard deviation.

Results: Mechanical cardiac support in the 4/6 SHLT recipients included: TAH (2), intra-aortic balloon pump (1) and HeartMate II (1). Both patients with TAH (aged 54 and 61 years) had familial amyloidosis. One patient had the Val122Ile mutation while the mutation for the other patient was unreported. Preoperative left ventricular ejection fraction was 15% and 10%, respectively. Time from TAH implantation to SHLT was 71 and 109 days, respectively. Model for End-stage Liver Disease (MELD) scores were 12 and 15, respectively. Both patients are alive at 65 and 51 months post-transplant, respectively. One patient had a perioperative coagulopathy requiring delayed wound closure. This patient developed a retroperitoneal abscess requiring surgical drainage. There were no allograft rejection or hospital readmissions.

Conclusions: In our limited experience, total artificial heart is an acceptable bridging therapy in patients awaiting SHLT. There is paucity of published national data on the outcomes of SHLT with TAH as mechanical support.