post-discharge (75% female, median age 52.5 years). Patients themselves estimated their partner’s care burden by completing the DOBI at the same 3 time points. Differences in scores were tested by analysis of variance and paired t-tests when appropriate.

**Results:** Prevalence of depressive symptoms in partners of LVAD patients is high at discharge (75% shows signs of severe depression). This improves in time but remains significant (58% at 1 month and 33% at 3 months).

Partners very frequently provide practical and emotional support at all time points, yet do not perceive providing support as burdensome. No significant decrease in frequency and perceived burden of providing different types of support can be observed over time.

 Patients significantly underestimate the practical (p=0.011), motivational (p< 0.0001) and emotional support (p=0.030) provided during hospitalization, and continue to underestimate the practical support provided by their partners post-discharge. Correlations between the partners’ and patients’ perception of caregiver burden are in general weak and non-significant.

**Conclusion:** The high rate of depressive symptomatology in partners of LVAD patients both before and after discharge is worrisome. Although partners seem not to perceive providing support as burdensome, the extent of support provided is high. These innovative insights should encourage LVAD teams to consider emotional and practical support strategies for caregivers.

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**Improving Bone Health in Children Supported on Ventricular Assist Devices**

**B. Hawkins, J. Nobrega, S. Reidy, C.J. VanderPluym. Cardiology, Boston Children’s Hospital, Boston, MA.**

**Purpose:** Children supported with ventricular assist devices (VAD) may be at increased risk for fractures as a result of immobility, nutritional insufficiencies and medication effects. We sought to describe the incidence of fractures in children with VADs and report our multidisciplinary approach to improved bone health.

**Methods:** We retrospectively reviewed all children who underwent VAD implantation from 2005-14. Demographic data was collected. Bone fractures were identified during VAD support and up to 1-year post transplant.

**Results:** Over 10 years, 40 children (26 female), aged 6.7 ± 6.0 (median 4.6, 0.02 to 17.5 yrs) underwent implantation of 43 VADs (7 HeartWare, 25 Berlin Heart, 4 Rotaflow, 7 Abiomed BVS 5000). Diagnosis included; cardiomyopathy (27) and congenital heart disease (13). During a total of 2471 days of VAD support (median 26.5, range 1 to 342 days), 2 patients had fractures, and an additional 3 patients had 5 separate long bone fractures within the first year post transplant. Of the 5 patients who had fractures, 4 were non-weight bearing, all were on loop diuretics >3 mos and had received >3 mos of unfractionated or low molecular weight heparin. One patient was transitioned from heparin to fondaparinux, a synthetic factor Xa inhibitor as an alternate anticoagulant to prevent bone absorption inherent to other heparins. She received a total of 60 days of heparin, 88 days of enoxaparin, and 23 days of fondaparinux, and was successfully transplanted, with no increase in clotting events after transition to fondaparinux. Dedicated assessment of bone health was instituted for all VAD recipients with focus on high risk patients; infants and toddlers, non weight bearing, failure to thrive, loop diuretic dependence and anticoagulation use >3 mos. Weekly multidisciplinary meetings with pharmacy, nutrition, physiotherapy and nursing would review modifiable risks for bone health, and develop a tailored plan to improve patient mobilization, minimize medications with effects on bone, including transition to novel anticoagulation (fondaparinux), hyper-alimentation of vitamin D and calcium, and ensure special handling precautions.

**Conclusion:** Fractures occurred in 12.5% of children supported with VADs, attributable to poor bone health. It is imperative that programs address bone health and modifiable risks as part of comprehensive VAD and post transplant care.

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**Risk Assessment for HeartWare HVAD Support as a Bridge to Transplant: Is the HeartMate II Risk Score Applicable?**

**L. Castle,1 J. Aaronson,2 M. Slaughter,3 C. Salerno,1 S. Moainie,1 M. Walsh,1 J. Cowger,1 St. Vincent Hospital, Indianapolis, IN; 2University of Michigan Health System, Ann Arbor, MI; 3University of Louisville, Louisville, KY.**

**Purpose:** The HeartMate II Risk Score (HMRS) was devised to predict 90-day mortality in patients undergoing Heartmate II support. The purpose of this study was to examine the accuracy of the HMRS in patients receiving the HeartWare HVAD as a bridge to transplant (BTT).

**Methods:** Patients receiving an HVAD as part of the BTT clinical trial and continuous access protocol (n = 382) comprised the cohort. The HMRS was calculated using preoperative serum creatinine, albumin, INR, and patient age. Institutional HVAD volume was assumed to be >15 for trial duration. Patients were divided into risk groups according to published HVADs thresholds: low (<1.58), medium (1.58 - 2.48), and high (>2.48 risk). The area under the receiver operating characteristic curve (AUC-ROC) was used to assess HMRS accuracy. Kaplan-Meier survival estimates were calculated and log rank testing was used for survival comparisons across risk score groups.

**Results:** The median patient age was 56 years, creatinine 1.21 mg/dL, albumin 3.5 g/dL, and INR 1.2. The sample median HMRS was 1.31. The HMRS classified 63% (n=240) as low risk, 26% (n=99) as medium risk, and 10% (n=40) as high risk for death at 90 days after VAD. Overall sample survival was 90% and 84% at 6 and 12 months respectively. There was no overall significant difference in HVAD patient survival based on HMRS group (Figure 1, p<0.12). HMRS discrimination for 90 day survival was poor (AUC-ROC[95% CI] = 0.560[0.445-0.682]).

**Conclusion:** In this cohort of BTT HVAD recipients, the HMRS failed to provide accurate risk stratification. Future study is needed to determine if risk models devised in VAD model-specific cohorts apply to all patients on continuous flow support.

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**Predictors of Late Survival Following Continuous-Flow Left Ventricular Assist Devices**


**Purpose:** To describe the early, mid and long-term survival of the largest single-center series of patients with new-generation, totally implantable continuous-flow left ventricular assist device (CF LVADs).

**Methods:** A retrospective review of all patients (N=469) implanted with a CF LVAD at a single center between December 1999 and December 2013. Demographics, pre-operative and operative data, perioperative outcomes, echocardiographic and right heart catheterization data, and late survival were gathered. Univariate, survival, and multivariable analyses were performed.

**Results:** Patient characteristics, baseline echo and hemodynamic data, operative characteristics and clinical outcomes are summarized in Figure 1A. Patients were mainly bridge-to-transplant (BTT), with elevated creatinine, multiple comorbidities, critical INTERMACS class 1 or 2, and had advanced pulmonary vascular resistance (PVR) and pulmonary capillary wedge pressures (PCWP). Mean follow-up was 2.1+2.4 years (maximum 13.3 years). Survival is illustrated in Figure 1B (entire cohort) and stratified...