IMPLANTATION OF VENTRICULAR ASSIST DEVICES TO MEDIATE WEIGHT LOSS IN OBESE HEART FAILURE PATIENTS

ACC Poster Contributions
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**Background:** Obesity is not only a risk factor for heart failure (HF) but is also associated with poor outcomes after cardiac transplantation (Tx) and is therefore regarded as a relative contra-indication. Achieving adequate weight loss appears difficult among patients (pts) obese heart failure patients who are unable to exercise due to de-conditioning and reduced cardiac capacity. We assessed weight loss in obese HF pts after implantation of left ventricular assist devices (LVAD) compared to patients with normal BMI.

**Methods:** Nineteen pts (7 females, age 51.6±12.1 yrs) with advanced HF (NYHA class III-IV, stage D) were evaluated and underwent surgical insertion of LVAD (Heartmate XVE™, Thoratec, Pleasanton, CA) as bridge to Tx. Thirteen pts (grp 1) were obese with BMI ≥ 30.0 kg/m² and the remaining six pts (grp 2) had BMI ≤ 30.0 kg/m². All pts were advised on dietary and lifestyle modification. Pts were followed for 12 months; clinical status and weight loss were evaluated.

**Results:** All pts were alive at follow-up. Pts in grp 1 (6 females, age 49.1±10.7 yrs) had a body weight (BW) of 246.6±34.9 lbs (mean±SD) and a BMI of 36.1±4 at baseline. Pts in grp 2 (1 female, 59.3±12.4 yrs) had a BW of 179.3±34.8 lbs and a BMI of 25.5±4 at baseline. At 6 months, grp 1 BW was 216.3±20.8 lbs, BMI was 31.8±3.3 (p<0.05 vs baseline); in grp 2, BW was 171.5±30.4 lbs, BMI was 24.9±2.5 (n.s. vs baseline, p<0.05 vs grp 1). Pts in grp 1 lost 12.3±12% BW (30.3±28.5 lbs), pts in grp 2 lost 4.3±6.2% BW (7.8±11.2 lbs). At 12 months, 7/13 pts in grp 1 (54%) underwent successful Tx as a result of decreased BW.

**Conclusion:** LVAD insertion using Heartmate XVE™ resulted in significant weight loss in obese pts considered for heart transplantation compared to patients with BMI ≤ 30.0 kg/m². We hypothesize that weight loss was achieved by 1) improved physical conditioning, with increased calorie expenditure, as a result of increased cardiac capacity and output caused by the LVAD, and 2) a decrease in caloric intake due to the mass effect of the device compressing the gastric antrum.