Influence of body mass index on survival and length of hospital stay in heart transplantation versus left ventricular assist device recipients

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PURPOSE: There is a substantial amount of data demonstrating the influence of body mass index (BMI) on outcomes of patients after heart transplantation (HTx) or left ventricular assist device (LVAD) implantation. However, no direct comparisons were made between these two modalities of advanced heart failure treatment in a specific population in terms of pretreatment BMI.¹⁻³

PATIENTS AND METHODS: We retrospectively studied 90 consecutive HTx (67 male, mean age 51.9±13, median follow-up 20.8 months) and 32 consecutive LVAD (27 male, mean age 58.3±8, mean follow-up 13.1 months) patients from our centre in the period from January 2010 to December 2014. The patients were categorized in groups according to pretreatment BMI: non-overweight patients (BMI <25) and overweight/obese patients (BMI ≥25). Survival and post-surgical length-of-hospital stay were compared among the groups by Kaplan-Meier method (log-rank test for comparison).

TABLE 1. Distribution of body mass index among treatment groups.

BMI	HTx group	LVAD group
<25 kg/m ²	38	12
≥25 kg/m ²	52	20

FIGURE 1. Kaplan-Meier survival curves for body mass index groups in relation to different treatment options.

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FIGURE 2. Modified Kaplan-Meier curves representing length of hospital stay for body mass index groups in relation to different treatment options.

RESULTS: Pre-treatment BMI distribution among groups is shown in Table 1. HTx patients in the non-overweight group had significantly better survival in comparison to LVAD patients in the same BMI group. This observation was not present in patients with BMI ≥ 25 , where survival post Htx and post LVAD were similar (Figure 1). There was no significant overall difference in length of hospital stay between the groups (Figure 2).

CONCLUSION: Non-overweight patients in our cohort demonstrated better survival with HTx than LVAD treatment. No influence of BMI on length of hospital stay was shown between the HTx and LVAD treatment groups.

LITERATURE

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