

Change in Heart Rate from Pre-Implant to Discharge is Associated with Mortality and Admissions in LVAD Patients– A Substudy of the ENDURANCE trial

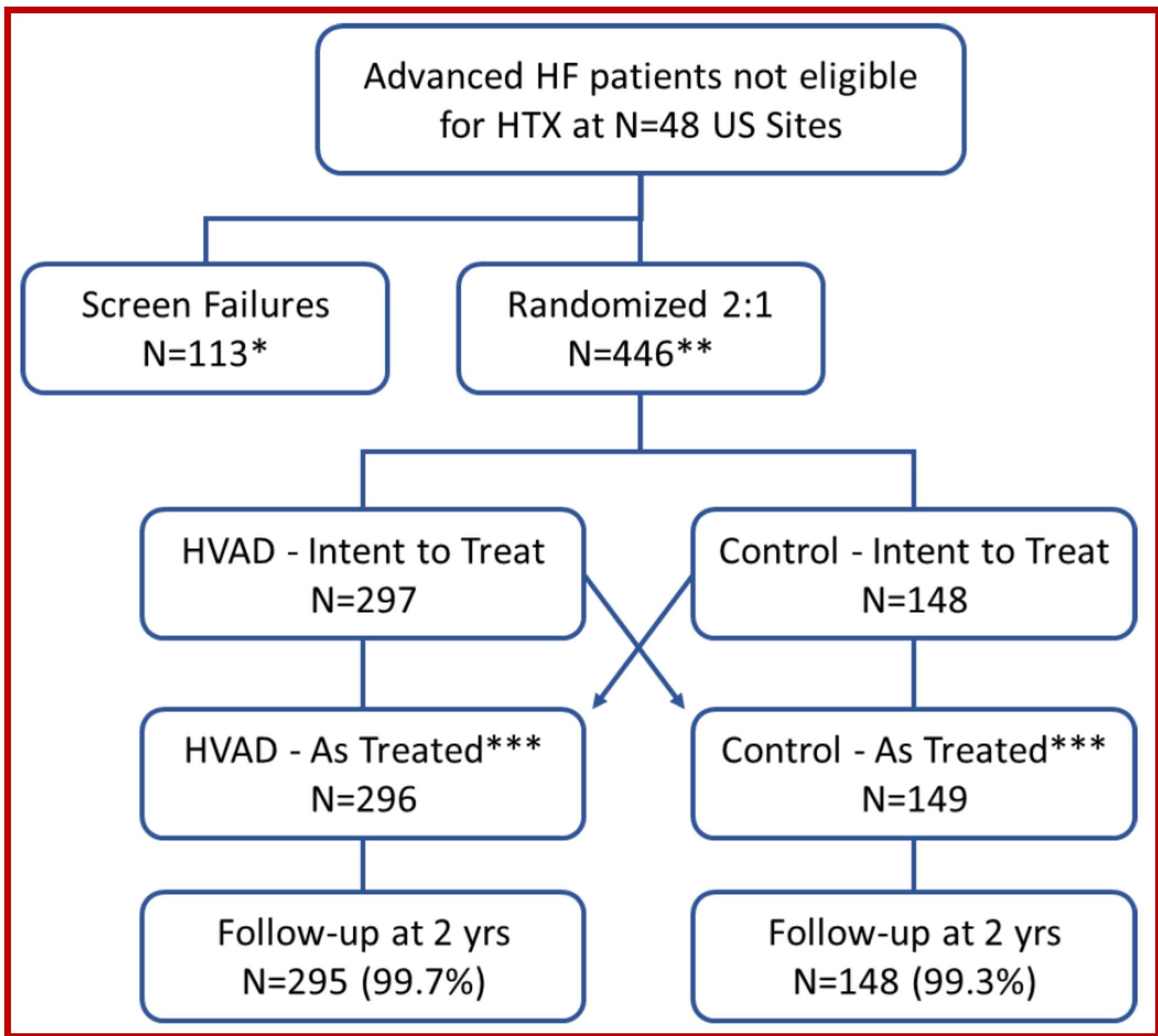
Edo Y. Birati, Supriya Shore, Michael A. Acker, Pavan Alturi, Jeffrey Teuteberg, Robert Kormos, Emma Birks, Claudius Mahr, Nahush Mokadam, Francis Pagani, Joseph Rogers, Thomas Vassiliades and J. Eduardo Rame.

BACKGROUND

- The effect of heart rate (HR) on prognosis has been studied in almost every field of cardiology.
- However, no study had evaluated the effects of HR on prognosis and admissions in patients on LVAD support.

METHODS

- The ENDURANCE trial is a multicenter randomized trial involving 445 patients who were assigned, in a 2:1 ratio, to the study (centrifugal-flow) device or the control (axial-flow) device.
- Using the data collected in the ENDURANCE trial, we analyzed the association between HR, mortality and hospitalization.

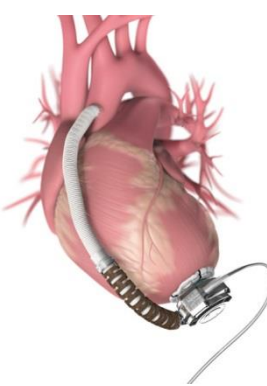


RESULTS

- A total of 445 patients were included in the ENDURANCE trial and in this analysis (78.4% male, mean age 64.7 years \pm 11.2).
- 296 (66.5%) patients were treated with HVAD and 149 (33.5%) patients with HMII devices.
 - The median HR pre-implant was 81 beats per minute (bpm) (interquartile range 73-93) and median HR at discharge post-implant was 88 bpm (interquartile range 79-95).

Right Ventricular Failure and Heart Rate:

- No correlation was noted between HR and early right ventricular failure (p=0.30)



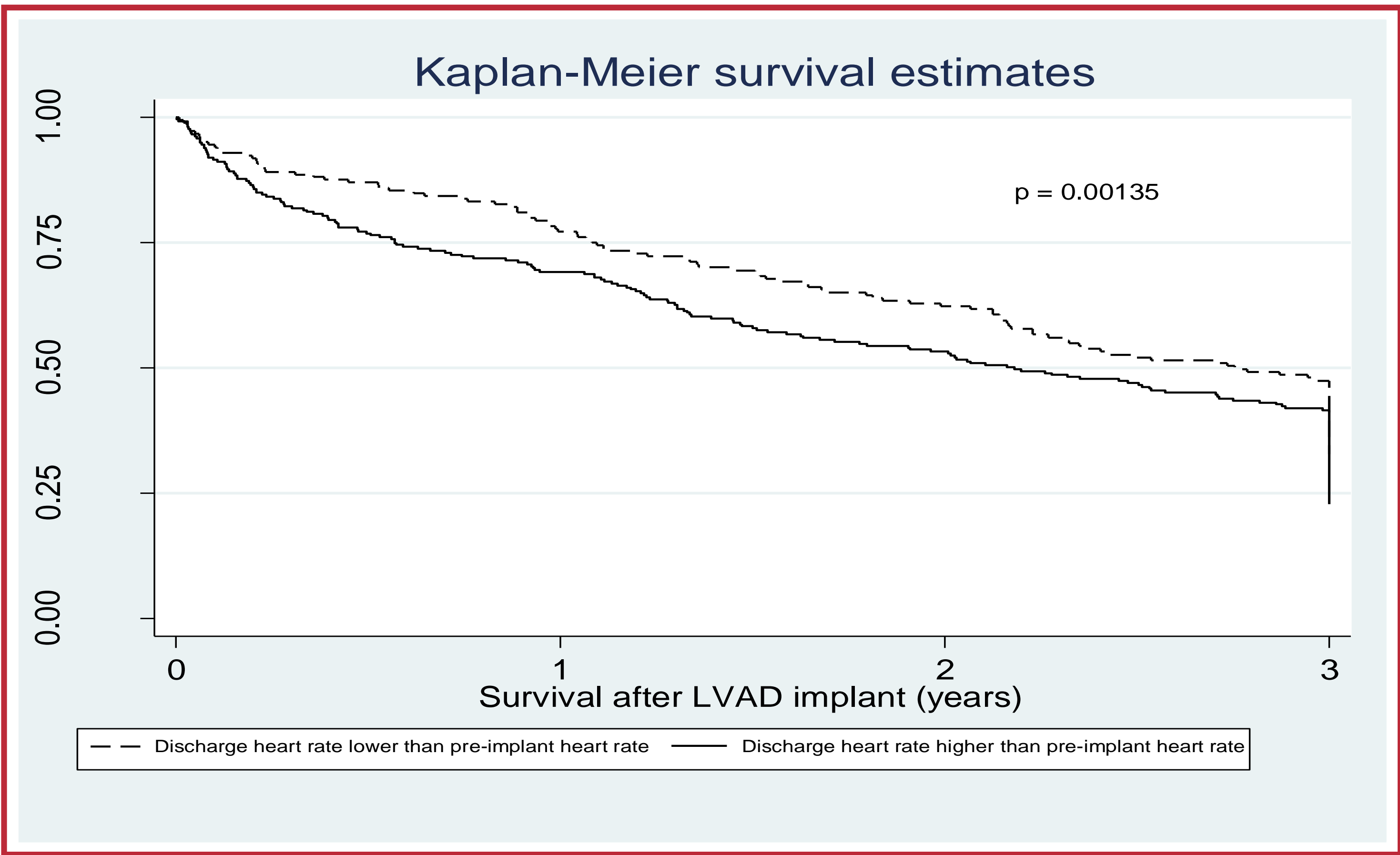
RESULTS (Cont...)

Change in Heart Rate and Survival:

- A decrease in HR at discharge post-implant compared to HR pre-implant was associated with improved survival (p=0.001, figure).
- This remained significant in a multivariate analysis (OR for mortality 1.01 per 1 bpm increase in HR, 95% confidence interval 1.00 – 1.03, p=0.01).
- A decrease in HR at discharge post-implant compared to HR pre-implant was associated with a longer time to first admission (p=0.001).
- HR at discharge or 3-months post-implant was not associated with mortality.

Beta blockers and Survival

- 87.9% patients were treated with beta-blockers at baseline,
- No association between pre-LVAD treatment with beta-blocker and survival (p=0.08)



CONCLUSION

- A decrease in HR in the early period after LVAD implantation is associated with improved survival and reduced risk of admission.
- Future studies will determine if HR reduction strategies could emerge as a therapeutic paradigm to improve outcomes with LVAD therapy.

DISCLOSURES

EYB – Consultant: Luitpold Pharmaceuticals, Inc.
SS – None.
MAA – None.
PA – None.
JT – Consultant: Medtronic, Abiomed, CareDX; CEC: Abbott.
RK – C; Consultant; Medtronic.
EB – None.
CM – Investigator / Consultant: Medtronic, Abbott, Abiomed.
NM – Consultant: Medtronic, Abbott, Syncardia.
FP – None.
JR – None.
TV – Employee, Medtronic.
JER - PI, Endurance Trial (Medtronic). PI, Momentum 3 Trial (Abbott).

