ISHLT Heart Failure/ Heart Transplantation Nov '19
JOURNAL WATCH

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A novel risk score to predict survival in advanced heart failure due to cardiac amyloidosis

Kreusser M et al.

Clinical Research in Cardiology October 2019
https://doi.org/10.1007/s00392-019-01559-y

STUDY HIGHLIGHTS

Single center retrospective study of patients patients with cardiac amyloidosis (CA) (1998-2016).
2800 amyloidosis patients screened
→1034 CA
→166 with complete cardiac workup
→46 heart transplantation
⇢120 for outcome analysis:
74 AL: 50 † due to CV reasons
46 ATTR: 13 † due to CV reasons
All-cause mortality = primary endpoint:
1y: 31% 5y: 54%

Aim:
Identify relevant prognostic factors for patients with CA and advanced heart failure to optimize prioritization on HTX wait list given unacceptable waitlist mortality.

CENTRAL FIGURE

Multivariate proportional variate hazard models for AL and ATTR amyloidosis

	Hazard ratio	95% CI	*p* value
Model for AL amyloidosis			
hsTnT	1.003	1.001–1.005	**0.009**
SvO_2	0.965	0.938–0.992	**0.012**
RA pressure	1.087	1.030–1.148	**0.003**
Mean PA pressure	1.061	1.024–1.100	**0.001**
PCW pressure	1.056	1.016–1.100	**0.006**
Model for ATTR amyloidosis			
QRS duration	1.021	1.004–1.039	**0.013**
hsTnT	1.021	1.006–1.036	**0.006**
NT pro-BNP	1.0003	1.0001–1.0004	**0.002**

AL patients at **high risk:**
mean PA pressure > 22.5 mmHg and hsTnT > 58.5 pg/ml
ATTR patients at **high risk when at least 2 criteria** are met: QRS > 104 ms or NT pro-BNP > 6330 ng/l or hsTnT > 55 pg/ml

REVIEWER'S COMMENTS

Consider higher prioritization of patients with cardiac amyloidosis and poor risk factors, especially within Eurotransplant, HTX programs.
The presented score system has to be **re-evaluated in a larger patient cohort** and **validated in a multicenter study.**

Limitations:
*single-centre, retrospective study with small patient population
*only 2 types of amyloidosis which may have influenced the results of other scores
*low cut-offs may limit the value and clinical application of this risk score
*cardiac amyloidosis represent a minority of HTX candidates

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Survival Outcomes After Heart Transplantation - Does Recipient Sex Matter?
Moayedi Y et al.

Circulation: Heart Failure October 2019
DOI: 10.1161/CIRCHEARTFAILURE.119.006218

STUDY HIGHLIGHTS

34,198 heart transplant (HT) recipients included (76.3% ♂, 23.7% ♀) from ISHLT registry 2004-2014.

1st propensity matching analysis included 7,258 recipients in each group:

- 1:1 Sex matching on recipient characteristics and partial IMPACT Score
- estimated HR for survival was 1.093 (95% CI, 1.015–1.177; *P*=0.018), suggesting ♀ **recipients were 9.3% more likely to die** post HT than ♂ recipients.

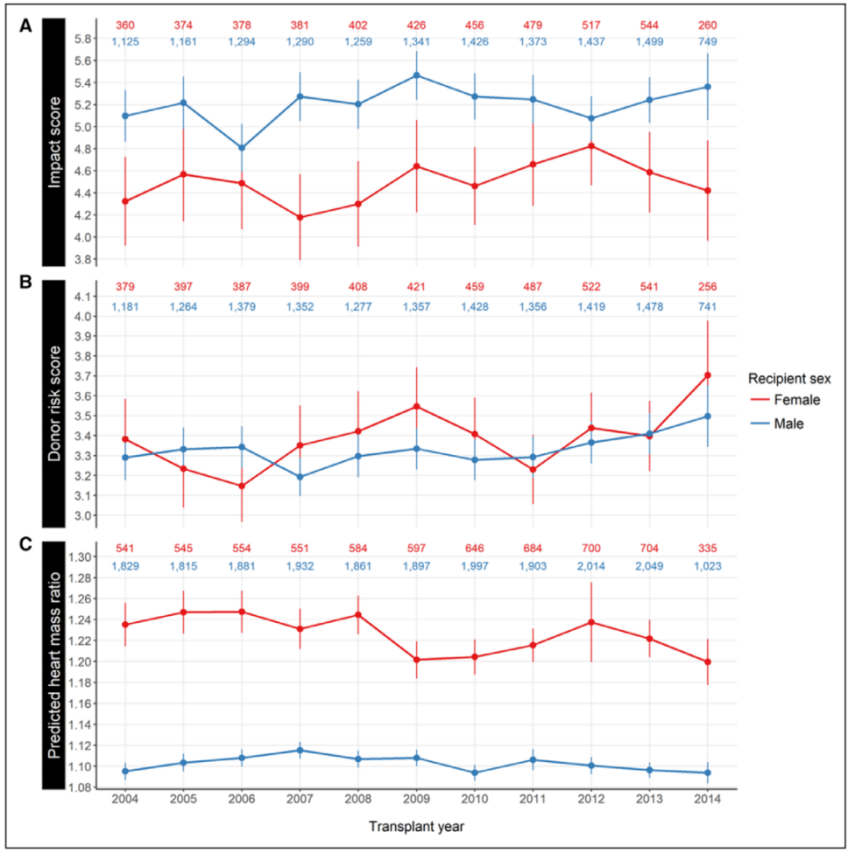
2nd propensity matching analysis included 5,488 recipients in each group:

- 1:1 Sex matched on **recipient and donor** characteristics
- ♀ recipients had **similar survival** (HR, 1.025; 95% CI, 0.941–1.116; *P*=0.57).

No difference in **overall survival** between ♂ and ♀ after HT

CENTRAL FIGURE

Trends for IMPACT, Donor Risk Score and Predicted Heart Mass stratified by Sex



REVIEWER'S COMMENTS

♀ who survive **to HT** have **lower risk features** but receive **hearts** from **higher risk donors represented**

Only 1 in 4 HT recipients globally is ♀ This difference may be related to the sex-specific natural progression of HF in addition to sex-based selection and referral bias.

Limitations:

Only survival analyzed as outcome. Events such as PGD, acute rejection, CAV, or infections were not analyzed. –

Relevant variables such as waitlist data, listing priority status at the time of transplantation, recipient, and donor race were not included, as not provided by the ISHLT registry

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Outcomes in patients undergoing cardiac retransplantation: A propensity matched cohort analysis of the UNOS Registry

Miller RJH et al.

Journal of Heart and Lung Transplantation October 2019
https://doi.org/10.1016/j.healun.2019.07.001

STUDY HIGHLIGHTS

Retrospective study of cardiac retransplantation (re-HTX) of the UNOS database (1996-2017)

62112 HTX

→2202 (3.5%) re-HTX at median 9.4 yrs

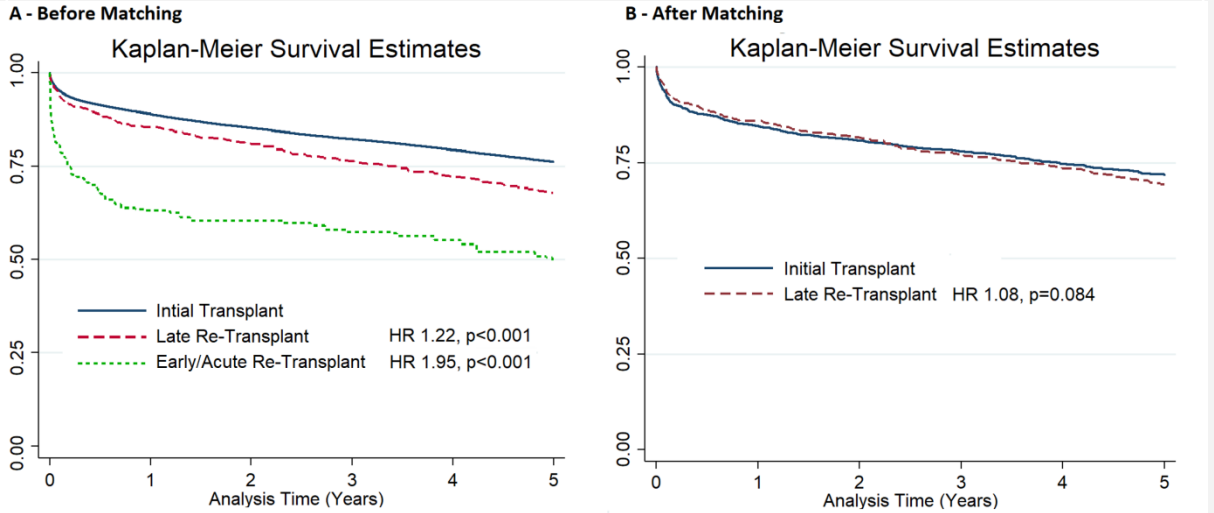
→349 (0.6%) early/acute re-HTX (E/A re-HTX) under 1 year after 1st HTX or for acute rejection (AR) at median 154 days

Late re-HTX vs Initial Transplant:
younger, less LVAD before HTX, more dialysis before HTX

Late re-HTX: not associated with an **increased** risk of **all-cause mortality** in adults **after propensity matching for donor and recipient characteristics**
(previously identified as independently associated with mortality by the SRTR and sensitization status)

In contrast, E/A re-HTX associated with increased all-cause mortality, even after propensity matching.

CENTRAL FIGURE



A:
Kaplan-Meier survival curves for all-cause mortality in all groups before propensity-score matching.

B:
Kaplan-Meier survival curves for all-cause mortality after propensity-score matching (model 1)

REVIEWER'S COMMENTS

Factors to consider regarding outcomes in re-HTX patients:

- Re-sternotomy
- Exposure to previous allograft + sensitization → increased risk for CAV
- More dialysis before re-HTX → increased 1-year-mortality post-HTX
- Cumulative exposure to CNI → supports late re-TX for CAV or graft failure

Limitations:

*several measures of PRA as a single variable representing sensitization
*re-HTX =selected group
*differences after matching may impacted findings
*no assessment of clinical outcomes or quality of life as well as cost and ethical concerns