Perspectives from TAVR UNLOAD

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Disclosure of Relevant Financial Relationships

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- **Consultancy: Abbott Vascular; Abiomed; Adjust Medical SA; Alleviant Medical Inc.; AnchorValve; Anteris; Approxima Srl; Bolt Medical; Boston Scientific; Daiichi Sankyo; Haemonetics; LUMA Vision; Materialise; Medtronic; Percassist; Pie Medical; Polares; PulseCath BV; Secure Closure; Supira Medical; Siemens; Vivasure**

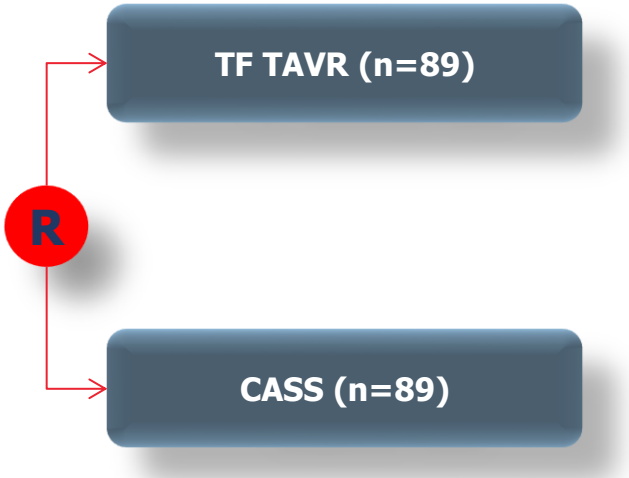
Faculty disclosure information can be found on the app.

TAVR UNLOAD Design

Investigator-initiated, international, randomized controlled, open label, superiority trial

TAVR UNLOAD

HFrEF & NYHA 2-4 & GDMT & moderate AS



Clinical surveillance & AVR upon progression to severe AS

Primary Endpoint

Hierarchical * occurrence of:

1. **All-cause death**
2. **Disabling stroke**
3. **Hospitalizations and equivalents**
4. **Change in KCCQ**

1st Key Secondary EP

Time-to-event analysis of:

Major adverse cardiac or cerebrovascular events (MACCE) defined as the composite of:

- **All-cause death**
- **All stroke**
- **Hospitalizations and equivalents**

* Using Finkelstein Schoenfeld method and presented as a win ratio
** Using Kaplan Meier Method and presented as Kaplan Meier curves

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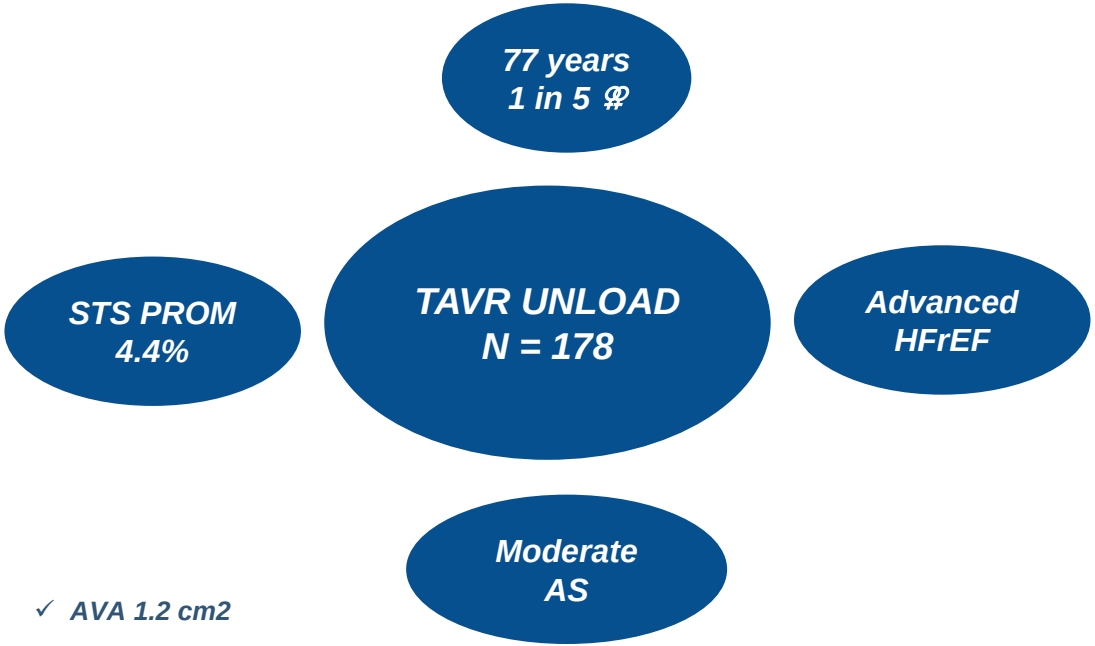
Patient Characteristics



- ✓ *55% NYHA III or IV*
- ✓ *45% HF hospitalization*
- ✓ *KCCQ OS @ baseline = 56*
- ✓ *LVEF 39%, LVEDD 6.6 cm*

- ✓ *AVA 1.2 cm2*
- ✓ *Mean gradient 22 mmHg*

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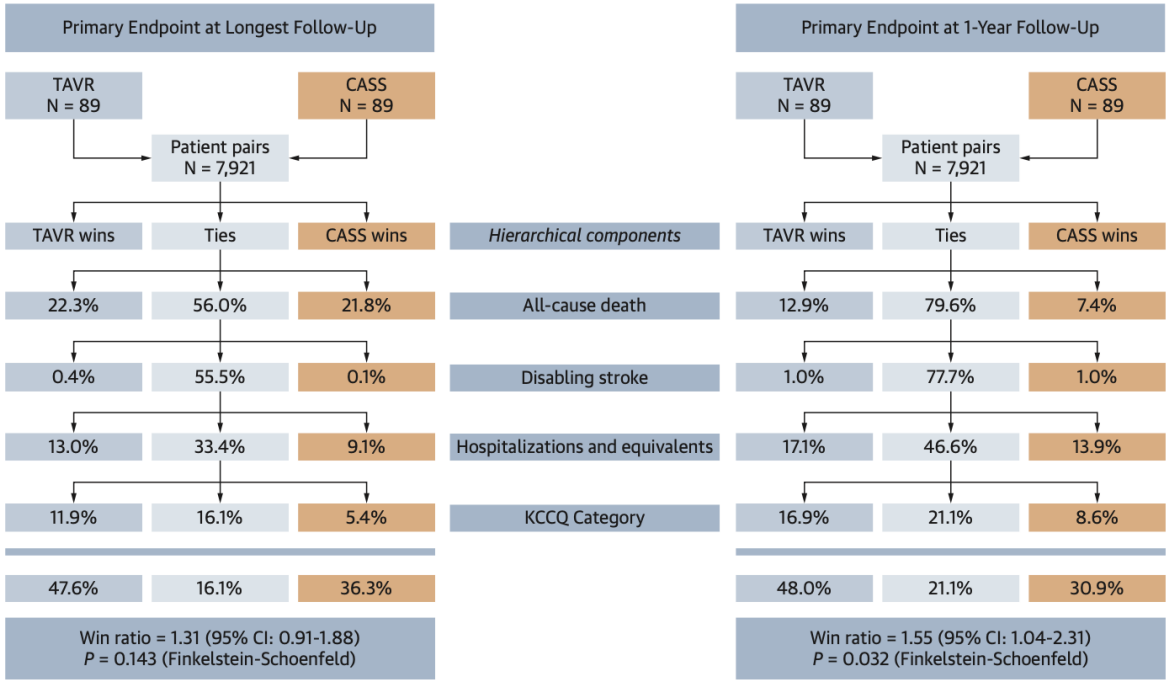
Primary Endpoint



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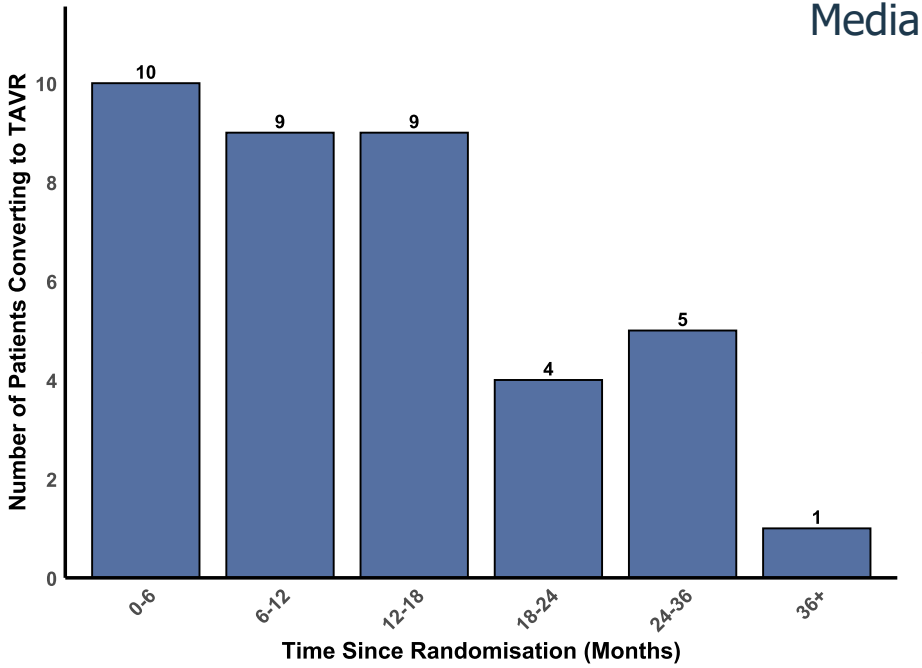
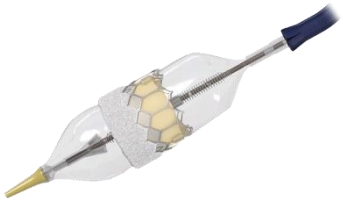
Conversion to TAVR in the CASS arm

N = 89
Allocated to CASS

N = 38 (43%)

Median: 366 days

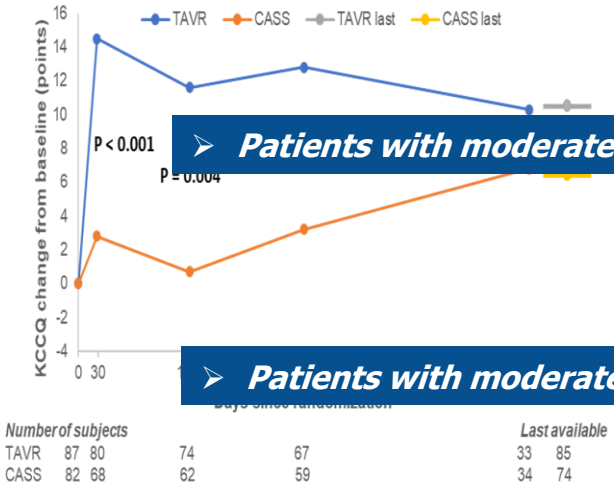




Ph. von Stein et al. Submitted

Quality of Life

OVERALL



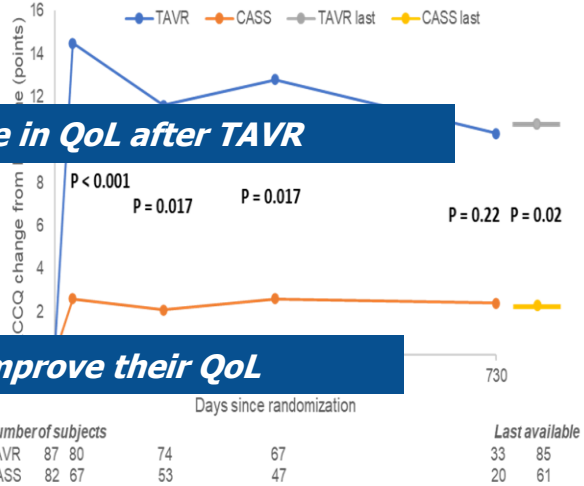
➢ ***Patients with moderate AS immediately improve in QoL after TAVR***

➢ ***Patients with moderate AS will need TAVR to improve their QoL***

Number of subjects					*Last available*	
TAVR	87	80	74	67	33	85
CASS	82	68	62	59	34	74

All available KCCQ-OS measurements

CASS censored @ TAVR



Number of subjects					*Last available*	
TAVR	87	80	74	67	33	85
CASS	82	67	53	47	20	61

KCCQ measurements with CASS patients censored at the time of TAVR

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TAVR Versus Surveillance in Patients with Moderate Aortic Stenosis and Heart Failure

A Conversion-Censored Analysis of the TAVR UNLOAD Trial

Philipp von Stein, MD *on behalf of the TAVR UNLOAD investigators*

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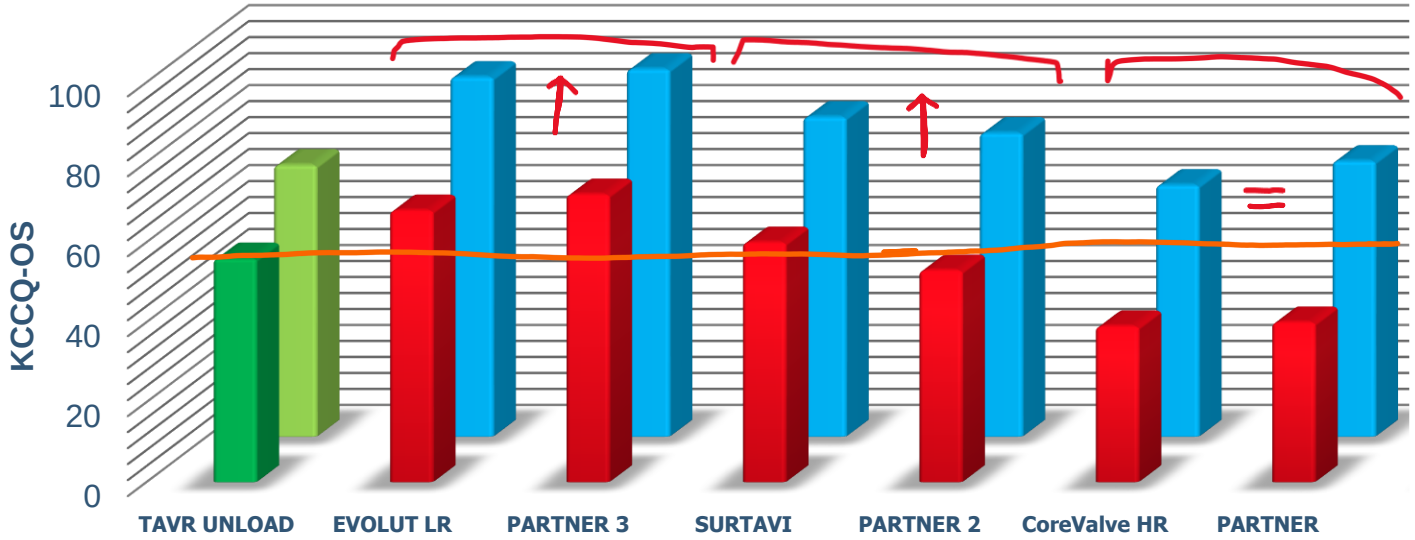
KCCQ Change post TAVR



Ischemic vs. non-ischemic CMP

Effects on EF & QoL

Change in LVEF at 1-year

TAVR


+4.6±9.1%
(P=0.003)


+8.4±10.6%
(P=0.001)

CASS


+4.1±8.6%
(P=0.005)


+6.9±10.6%
(P=0.029)

Change in KCCQ-OS at 1-year

TAVR


+12±21
(P<0.001)


+13±24
(P=0.011)

CASS

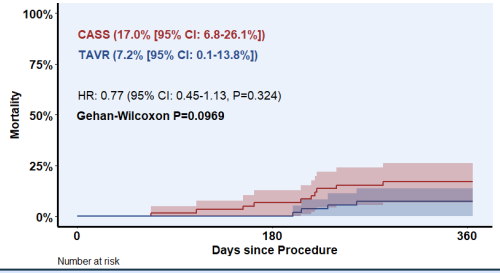

+4±24
(P=0.330)

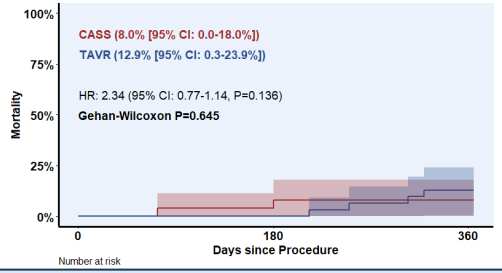

+2±22
(P=0.656)

No significant interaction for HF etiology

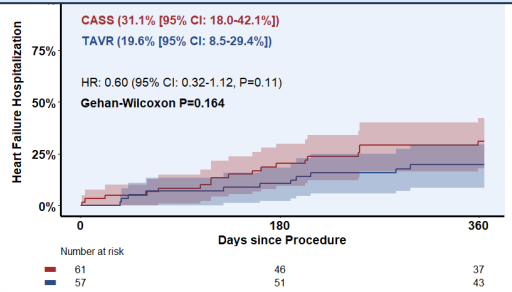
Ischemic vs. non-ischemic CMP

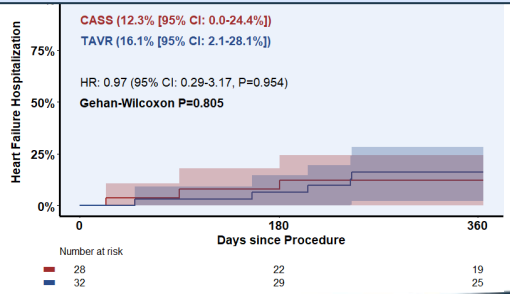
Effects on Survival & HFH



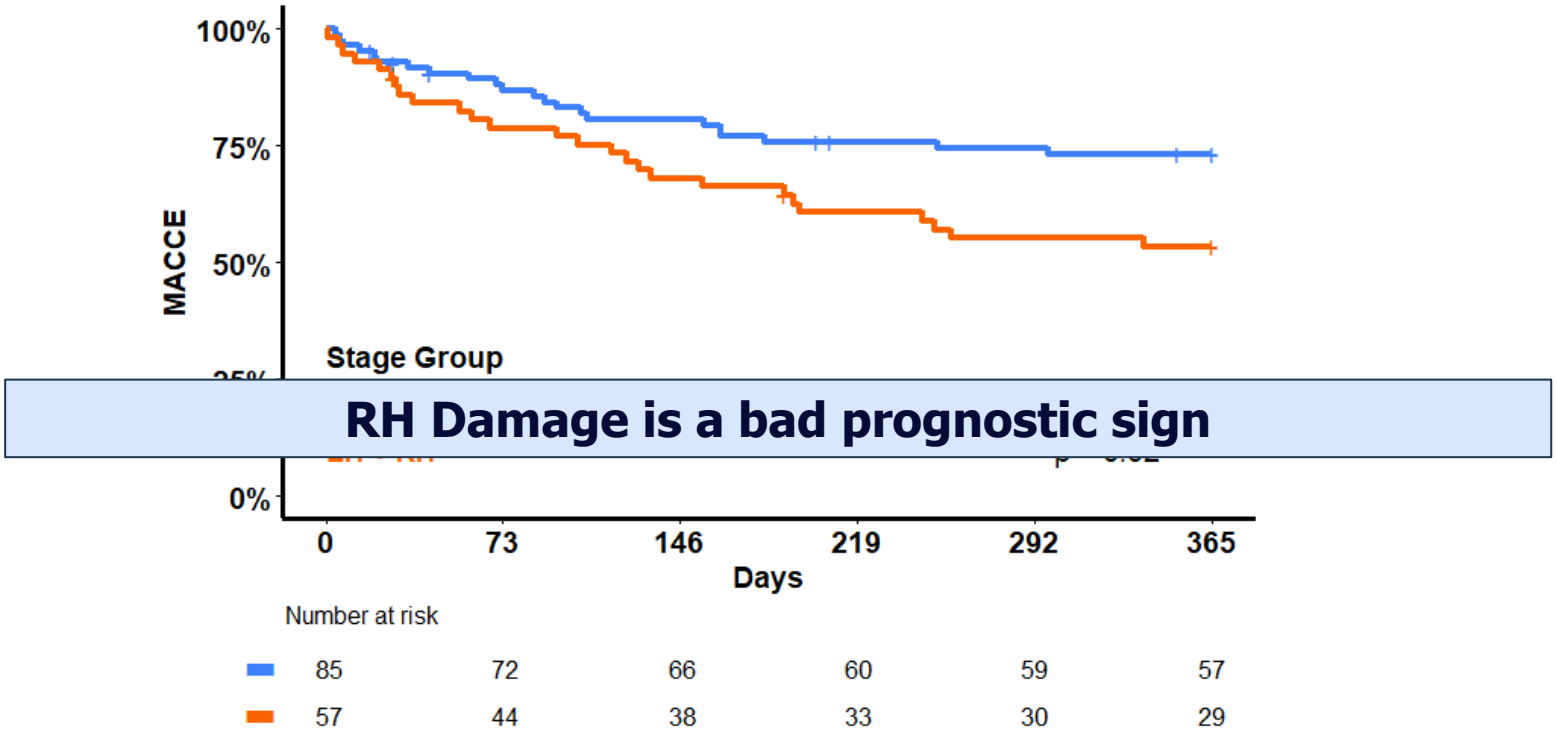


No significant interaction for HF etiology

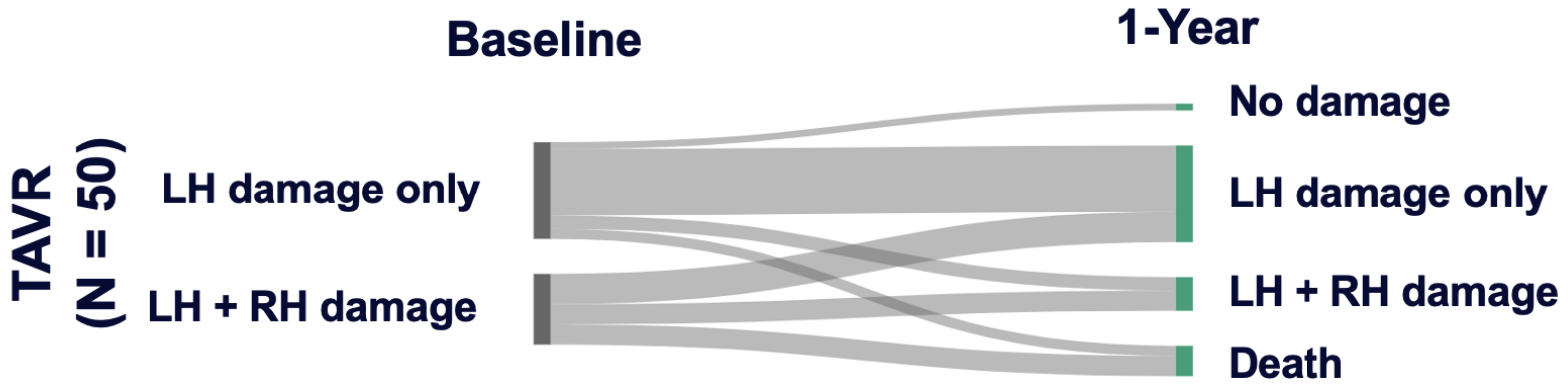




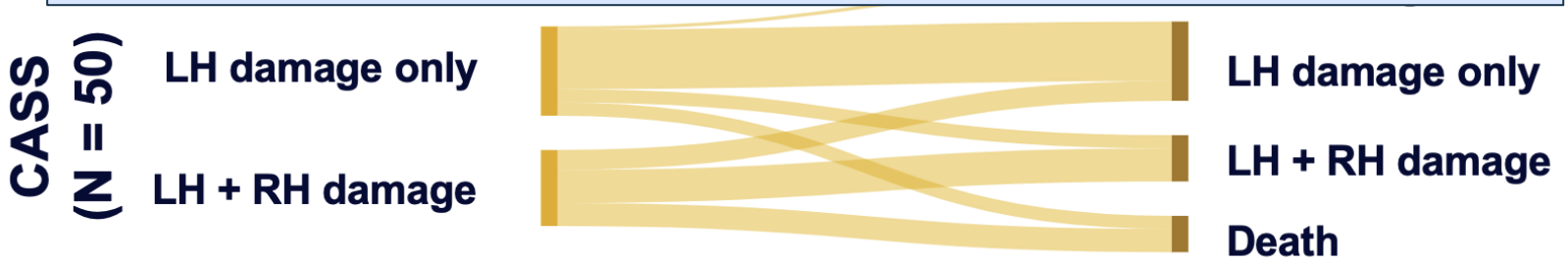
Impact of Cardiac Damage @ Baseline



Will Cardiac Damage heal?

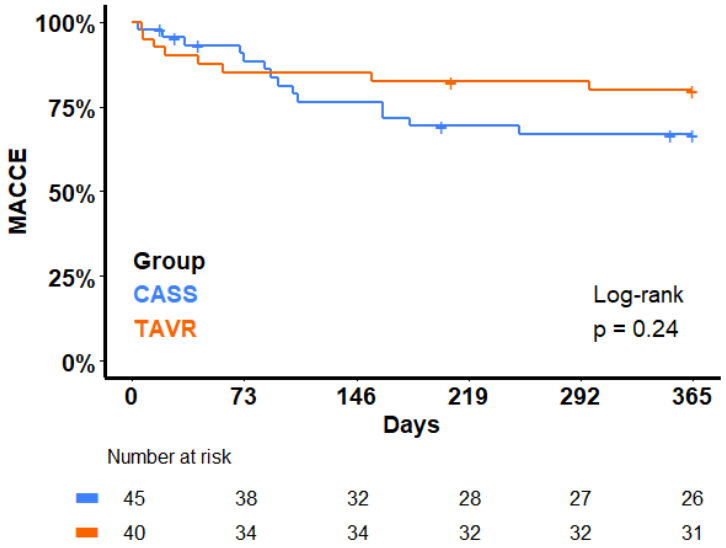


Fate of Damage after TAVR is unpredictable

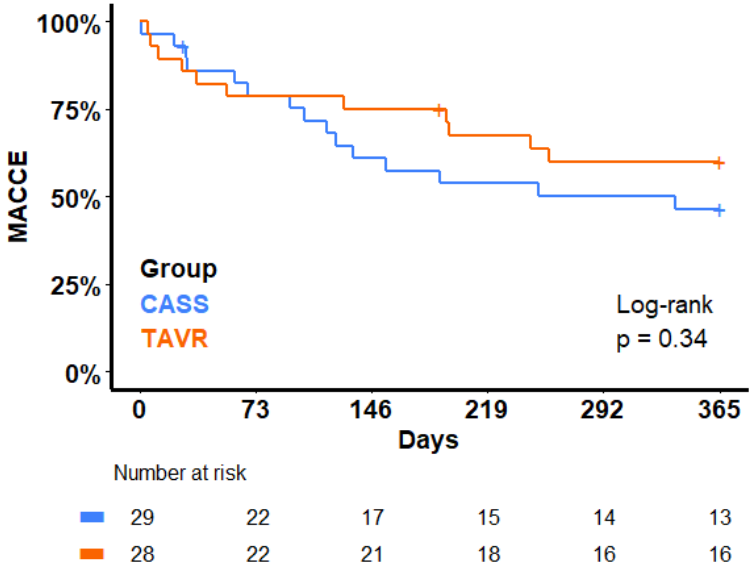


Cardiac Damage & TAVR response

LH Damage Cohort



LH + RH Damage Cohort



Retrospective propensity matched analysis @ EMC

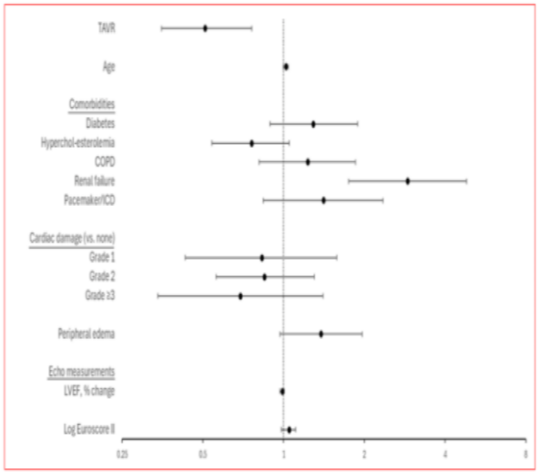
TAVR for moderate AS reduces mortality

Complete patient cohort

TAVR patients (n=115)
Clinical surveillance (n=220)

Univariable hazard ratio for TAVR vs. CS:
0.92, 95% CI: 0.68-1.26, p=0.611

Adjusted hazard ratio for TAVR vs. CS:
0.51, 95% CI: 0.35-0.76, p=0.001

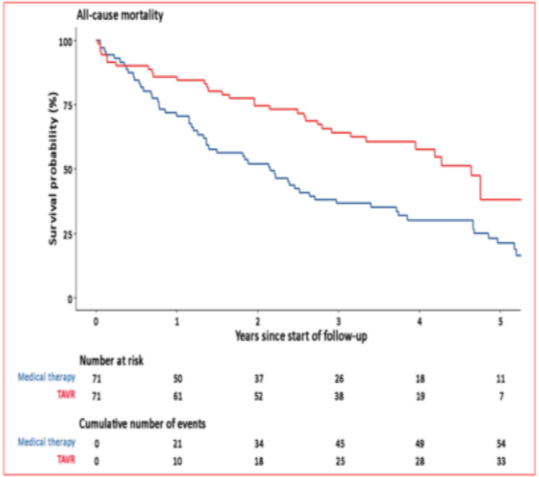


Propensity matched patient cohort

TAVR patients (n=71)
Clinical surveillance (n=71)

Matching variables:
Age, sex, coronary artery disease, cardiac damage, NYHA class, LVEF, peak velocity, mean gradient, and logistic EuroSCORE II

Hazard ratio for TAVR vs. CS:
0.50, 95% CI: 0.33-0.75, p<0.001



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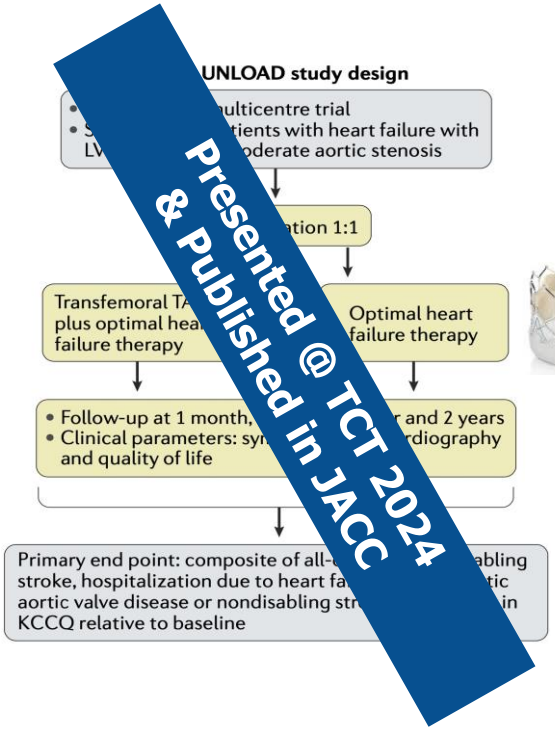
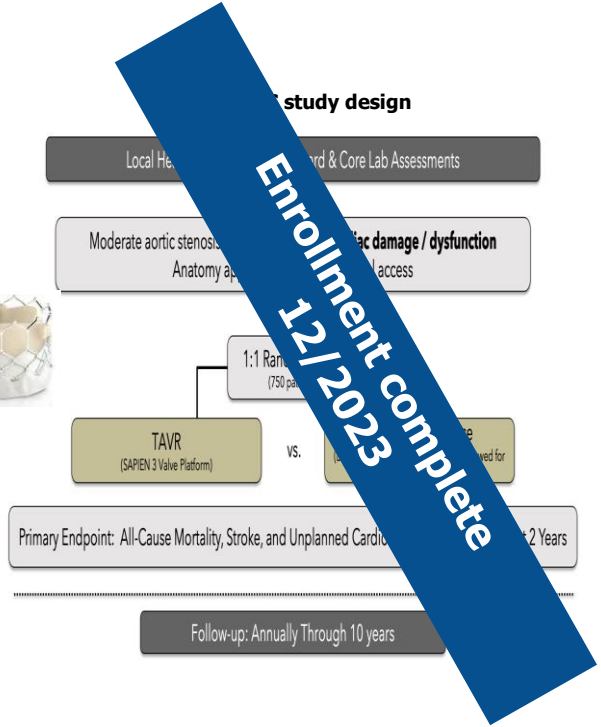
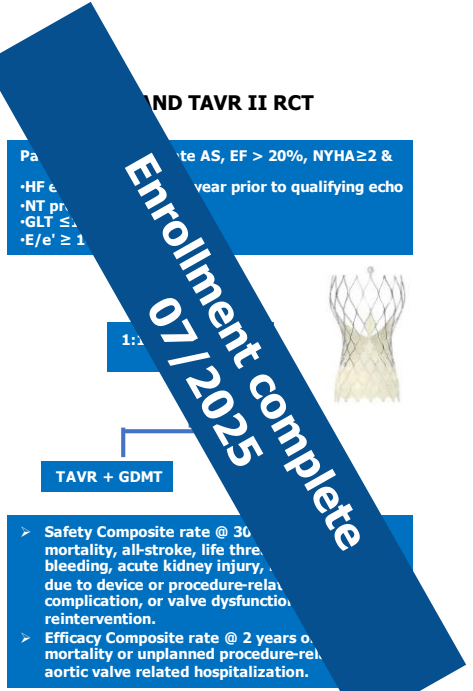
Moderate AS Landscape after TAVR UNLOAD







Presented @ TCT 2024 & Published in JACC

Enrollment complete 12/2023

Enrollment complete 07/2025

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Takeaways

- TAVR for moderate AS in patients with HFrEF on GDMT = safe & no effects on hard clinical endpoints vs. CS
- TAVR immediately improves quality of life of HFrEF patients with moderate AS
- QoL effect resembles the effect in high-risk TAVR trials and TEER effect in COAPT
- For HFrEF + moderate AS
  - Intensify AS follow up
  - Proceed with TAVR when intractable symptoms