

Supplementary Table 1: Studies on outcomes of Transcatheter Tricuspid Valve Interventions.

Study	Patients (n)	Age	Sex	NYHA- class	LVEF	AF	Primary endpoints	Outcomes
Tri-Valve registry¹	Total of 536 patients. 268 propensity-matched pairs Patients received either medical treatment or medical treatment plus	Mean age 77 years	56 % female	NYHA III-IV in 93 %	Mean 49 %	82 %	Composite of death at 1 year and HFH	1 Year Outcomes: The HR for the unadjusted composite of death and HFH was 0.60 (95 % CI; 0.46-0.79, p<0.01)

transcatheter intervention								
TRILUMINATE, RCT^{2,3}	Total of 350 patients. Patients received either medical treatment (n=175) or medical treatment plus T-TEER (n=175)	Mean age 78 years	56 % female	NYHA III-IV in 59 %	Mean 59 %	93 %	Hierarchical composite of death (all cause), TV-surgery, HFH and improvement in KCCQ >15 points by win ratio during 1- year and 2-year follow up	1 Year Outcomes: Win ratio 1.48 (1.06-2.13, p<0.01). -Death or TV surgery rate of 11.3 % in the control group and 10.6 % in the device group (p = 0.82) -HFH in 12.1 % in the control group and 14.9 % in the device group (p=0.40) -Change in KCCQ of 4.8+/- 18.3 in the control group and

15.2 +/-22.3 in the device

group (p <0.01)

2-Year Outcomes:

-HFH 0.26 event per patient-year in the control group and 0.19 event per patient-year in the device group; p=0.02

Freedom from all-cause mortality, tricuspid valve surgery, and tricuspid valve intervention higher in the device group compared to the control group (77.6% vs 29.3%; p <0.01) driven by TV intervention

								-84% of patients had moderate or less TR in the device group
TRISCEND II, RCT⁴	Total of 400 patients, randomized 2:1 to either transcatheter TV intervention or control	Mean age 79 years	75 % female	NYHA III-IV in 73 %	Mean 56 %	96 %	Composite hierarchical outcome; death, durable implantation of a right ventricular assist device or heart transplantation, TV surgery or intervention, HFH, KCCQ-score,	1 Year Outcomes; Win-Ratio favouring intervention 2.02 (95% CI: 1.56-2.62, p<0.01) -TR ≤ mild in 95 % compared to 14 % ≥moderate in control group -NYHA class I/II at 1 year compared with control: 89% vs 33% for severe TR and 94% vs 35% for massive/torrential TR

NYHA, 6-minute walking test	-Increases in mean 6-min walk distance at 1 year compared with control: 10.6 m for severe TR, control, minus 27 m (95% CI: -54.1--0.3, p=0.02) and 35 m for massive/torrential TR, control minus 5 m (95% CI: -34.8--24.1, p=0.03) 18 months Outcomes: -Kaplan Meier estimates on all-cause mortality in the intervention group with severe TR cohort had an
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estimated difference 0.2%
(95% CI: -11.6--11.9), p=0.98)
-Landmarked at 30 days, 18-
month mortality estimates
were $12.9 \pm 3.1\%$ for
intervention vs $13.5 \pm 5.1\%$
for control (-0.6%, CI -
12.3--11.2, p=0.93) in the
severe TR cohort. For the
massive/torrential TR cohort
the numbers were $12.7 \pm$
 3.0% for intervention vs 23.6
 $\pm 5.0\%$ for control (-10.9%, CI
-22.4-0.5), p=0.62)

Tri.FR, RCT⁵	Total of 300 patients. 150 were included in the medical treatment arm called control arm, 150 medical treatment and T-TEER called device arm	Mean age 78 years	66 % female	NYHA III-IV in 39 %	Mean 57 %	94 %	Clinical composite score including MACE, NYHA class and patient global assessment at 1 year	1 Year Outcomes; 74 % of the device arm had improvement in the clinical composite score compared to 41 % in the control arm (p<0.01) -78 % of the patients had a TR grade ≤2+ (moderate or less) compared to 11 % in the control group (p<0.01) -KCCQ difference between intervention and control at was +10 points in favour of intervention (p<0.01)
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bRIGHT, observational⁶	Total of 511, single arm	Mean age 79 years	56 % female	NYHA III- IV in 80 %	56 %	86 %	TR grade, KCCQ, NYHA at 1 year	<p>1 year Outcome: 317 patients analyzed.</p> <p>-Reduction of TR from massive or torrential to moderate or less was seen in 81 % of the patients</p> <p>-KCCQ overall summary score showed a mean improvement of 19 ± 26 points from baseline ($p < 0.01$)</p> <p>-Patients categorized as NYHA functional class I or II increased from 21% at baseline to 75% ($p < 0.01$)</p>
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Study acronyms and type of study are indicated next to study name.

AF = Atrial fibrillation. CI = confidence intervals. LVEF = Left ventricular ejection fraction. HFH = Heart failure hospitalization. HR = Hazard ration. KCCQ = life quality according to Kansas City Cardiomyopathy Questionnaire. MACE = Major Adverse Cardiovascular Event. NYHA-class indicates function level according to New York Heart Association classification. RCT = Randomized Controlled Trial. TR = Tricuspid valve Regurgitation. TV-surgery = Tricuspid valve surgery. PGA = Patient global assessment score.

Supplementary Table 2. Studies analyzing efficacy of Transcatheter Aortic Valve Implantation (TAVI) versus medical therapy alone among patients at different surgical risks.

Study	Year	Age	Sex	Surgical risk grade	LVEF	Primary endpoints	Outcome	Sub analyses of LVEF
PARTNER⁷	2010	82 years	83 % male	11 %	54 %	All-cause death at 1 year follow-up	1 Year Outcome: Better outcome in the TAVI-group. Rates of death was 31 % in TAVI-group versus 51 % in standard therapy group (not eligible for surgery) (p<0.01)	No
PARTNER 2⁸	2016	82 years	54 % male	6 %	56 %	Composite of all-cause death and disabling stroke at 2 years in intention-to-treat	2 Years Outcome: No significant difference in the rates of the composite endpoint. End point detected in 19 % in the TAVI-group	No

group, TAVI versus surgery. 2 years follow up time versus 21 % in the surgery group (p=0.25)

PARTNER 3⁹	2019	73 years	68 % male	2 %	66 %	Composite of death, stroke or rehospitalization comparing TAVI and surgery. 1 year follow up time	1 Year Outcome: Primary endpoint occurred in 8.5 % in TAVI-group and 15.1% in the surgery group (p<0.01)	No
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CoreValue US pivotal¹⁰	2014	83 years	48 % male	10 % in extreme risk group	55 %	Comparing three groups. Patients with extremely high surgical risk received TAVI and their endpoint was	1 Year Outcome: In the extreme risk group, TAVI was non inferior to surgery. In the high-risk group, the TAVI-group had all cause death rates at 24.1 % and surgery 18.2 %, TAVI being superior to surgery	No
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7 % in
high-risk
group

all cause mortality
and stroke, non-
inferiority. Patients
with high surgical
risk were
randomized to
surgery or TAVI
and primary end
point was
mortality, non-
inferiority and
superiority testing.
1 year follow up
time

SURTAVI¹¹	2017	80 years	58 % male	4.4 %	Unkn	Composite of own death from any cause or disabling stroke at 2 years	2 Years Outcome: Statistically significant difference in favour of TAVI. The rate of the primary endpoint was 12.6 % of the TAVI-group and 14.0 % of the surgery group	Sub-analyses on LVEF >50 % and LVEF ≤ 50% was performed for the outcome of stroke without any significant differences in event rates
EVOLUT¹²	2023	74 years	64 % male	2 %	62 %	Non hierarchal in the TAVI- group	3 Year Outcome: Trend towards favour of TAVI with p=0.05.	No

disabling stroke at 3 years
 The primary endpoint incidence was 7.4 % in the TAVI-group and 10.4 % in the surgery group

NOTION¹³ 2024 79 years 53 % male 3 % Unkn Composite of all-own cause death, stroke or MI comparing TAVI and surgery, 10 years follow up time 10 Years Outcome: No difference in the primary endpoint with 65.5% in both the TAVI group and the SAVR group LVEF >50% at 3 months was not a predictor of all-cause death.

RHEIA¹⁴ 2024 73 years 0 % male 2 % 67 % Composite of all- for TAVI- group rehospitalization for valve- or procedure-related 1 Year Outcome: Incidence of the primary endpoint was significantly lower in the TAVI-group compared to the surgery group, 8.9 % and 15.6 % respectively) No

symptoms or

worsening heart

failure at 1 year

EARLY	2024	76 years	71 % male	2 %	Baseli	Composite of	Approx. 3.8 Years Outcome:	Yes, but only
TAVR¹⁵					ne for	death, stroke, or	The primary endpoint occurred in 26.8	change in LVEF
					all	unplanned	% of the TAVI-group compared to 45.3	in the arm
					unkno	hospitalization for	% in the clinical surveillance group	converting to
					wn	cardiovascular		AVR
						causes comparing		
						patients		
						undergoing TAVI as		
						asymptomatic or		
						per guidelines		
						timed TAVI.		

Median follow up

time was 3.8 years

Study acronyms are given. Year indicate year of publish. Surgical risk grade indicates estimated risk of 30-day mortality based on Society of Thoracic Surgery Predictors of Mortality (STS PROM) scores. LVEF = Left ventricular ejection fraction.

Values are mean (\pm SD) and n (%) if not otherwise specified.

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