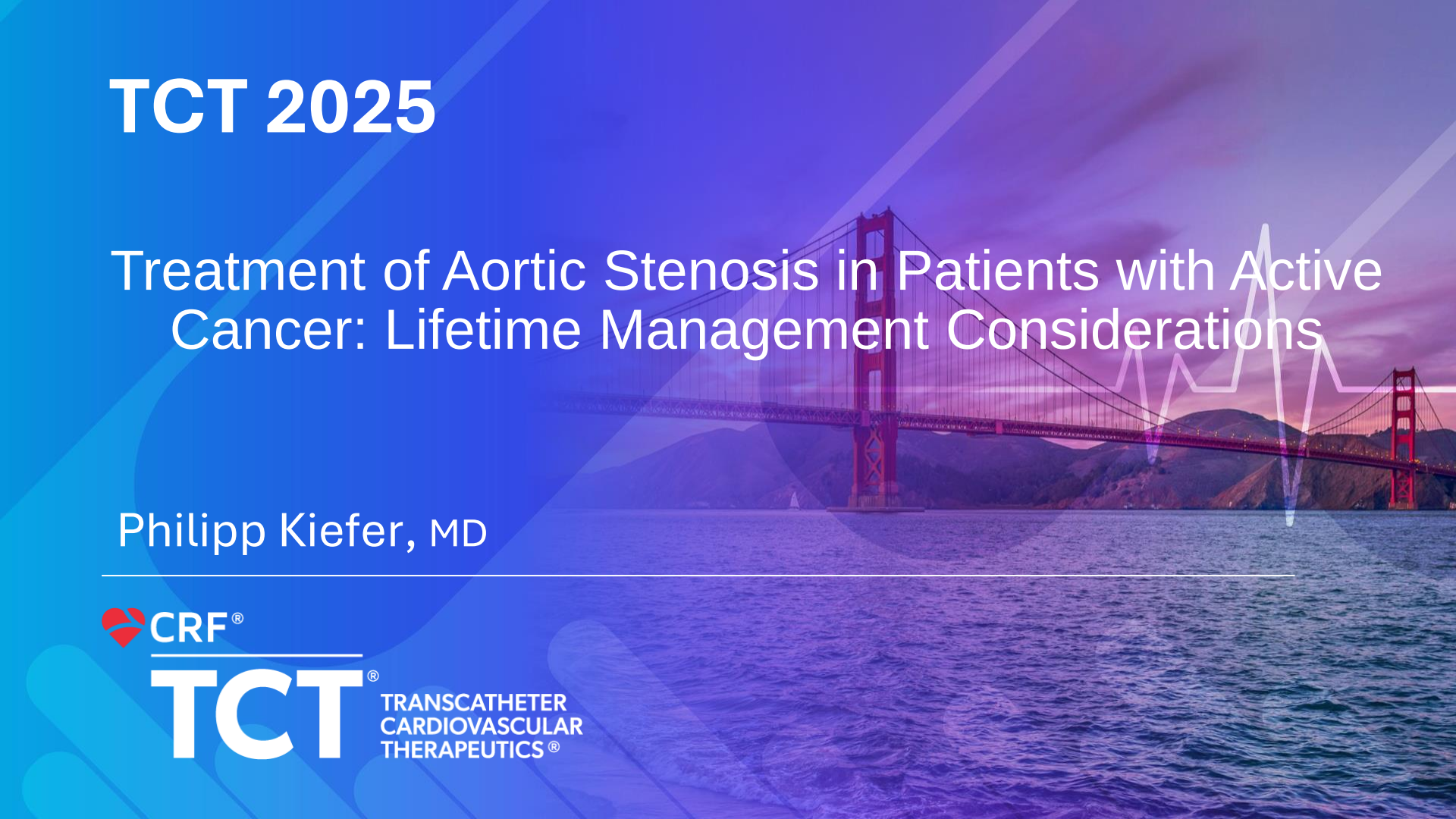
TCT 2025

Treatment of Aortic Stenosis in Patients with Active Cancer: Lifetime Management Considerations

Philipp Kiefer, MD



CRF®
TCT® TRANSCATHETER CARDIOVASCULAR THERAPEUTICS®

Disclosure of Relevant Financial Relationships

I, Philipp Kiefer DO NOT have any financial relationships to disclose.

Background

- Patients with severe AS and cancer are often denied for treatment
- Still a lack of knowledge and evidence for patients with active cancer
- Cancer treatment has improved– improved life expectancy

Background

ESC European Society of Cardiology
European Heart Journal (2025) **00**, 1–102
https://doi.org/10.1093/eurheartj/ehaf194

ESC GUIDELINES

2025 ESC/EACTS Guidelines for the management of valvular heart disease

In patients with active or stable cancer and severe AS, both TAVI and SAVR can be considered based on life expectancy, age, prognosis, and disability following cancer treatment, with a trend towards more TAVI utilization.[185] TAVI procedural complication rates appear similar compared with those of control subjects without cancer.[186] To avoid futility, treatment decisions discussed by the Heart Team should involve the treating oncologists.[5,182]

Aim of the study

- Outcomes on patients with Aortic stenosis and active cancer treated
  - surgical aortic valve replacement (SAVR)
  - transcatheter aortic valve implantation (TAVR)

Methods

- Single center, retrospective analysis
- All consecutive patients with active cancer and AS between 2014-2020
  - SAVR or TAVR
  - Life expectancy > 1y
  - Heart Team Assessment
- Primary Outcome: In-Hospital and Mid-Term Survival
- Secondary Outcome: Freedom from Valve-related Reintervention

Results: Demographics

Patient preoperative characteristics	TAVR n = 172	SAVR n = 39	p-value
Age, years	79.0 ± 5.7	69.0 ± 7.9	**<0.001**
Female	75 (43.6)	13 (33.3)	0.24
EuroSCORE II, %	3.6 (2.4 – 6.3)	0.9 (0.8 – 1.4)	**<0.001**
EuroSCORE II > 8%	33 (19.2)	0	**0.001**
EuroSCORE II < 4%	95 (55.2)	38 (97.4)	**<0.001**
Body mass index, kg/m²	26.5 (24.0 – 30.1)	30.3 (27.0 – 32.7)	**0.001**
Hyperlipidemia	110 (64.3)	24 (61.5)	0.74
Arterial hypertension	159 (92.4)	37 (94.9)	0.59
Diabetes mellitus Type 2	73 (42.4)	14 (35.9)	0.45
Chronic obstructive pulmonary disease	19 (11.0)	0	**0.028**
Bicuspid aortic valve	0	10 (25.6)	**<0.001**
Prior cerebrovascular event	16 (9.3)	5 (12.8)	0.55
Coronary artery disease	78 (45.3)	21 (53.8)	0.34
Prior myocardial infarction	18 (10.5)	3 (7.7)	0.77
Atrial fibrillation	64 (37.2)	11 (28.2)	0.29
NYHA class:			
I	9 (5.2)	3 (7.7)	0.47
II	36 (20.9)	16 (41.0)	**0.009**
III	107 (62.2)	20 (51.3)	0.21
IV	20 (11.6)	0	**0.029**
NYHA class III or IV	127 (73.8)	20 (51.3)	**0.006**

Results

Cancer specific data	TAVR n = 172	SAVR n = 39	p-value
Location of cancer: *			
Breast	19 (11.0)	2 (5.1)	0.38
Lung	10 (5.8)	5 (12.8)	0.16
Esophageal or stomach	5 (2.9)	0	0.59
Colon	13 (7.6)	1 (2.6)	0.47
Radiation therapy	17 (9.9)	4 (10.3)	1.00
Chemotherapy	38 (22.1)	5 (12.8)	0.27
Hormonal therapy	13 (7.6)	0	0.13
Surgery for cancer	54 (31.4)	16 (41.0)	0.25
Skin	12 (7.0)	2 (5.1)	1.00
Bladder	6 (3.5)	1 (2.6)	1.00
Kidney	8 (4.6)	4 (10.3)	0.24
Female genital	6 (3.5)	1 (2.6)	1.00
Prostate	32 (18.6)	4 (10.3)	0.25
Hematopoietic	44 (25.6)	10 (25.6)	1.00
Other location	6 (3.5)	2 (5.1)	0.64

Results

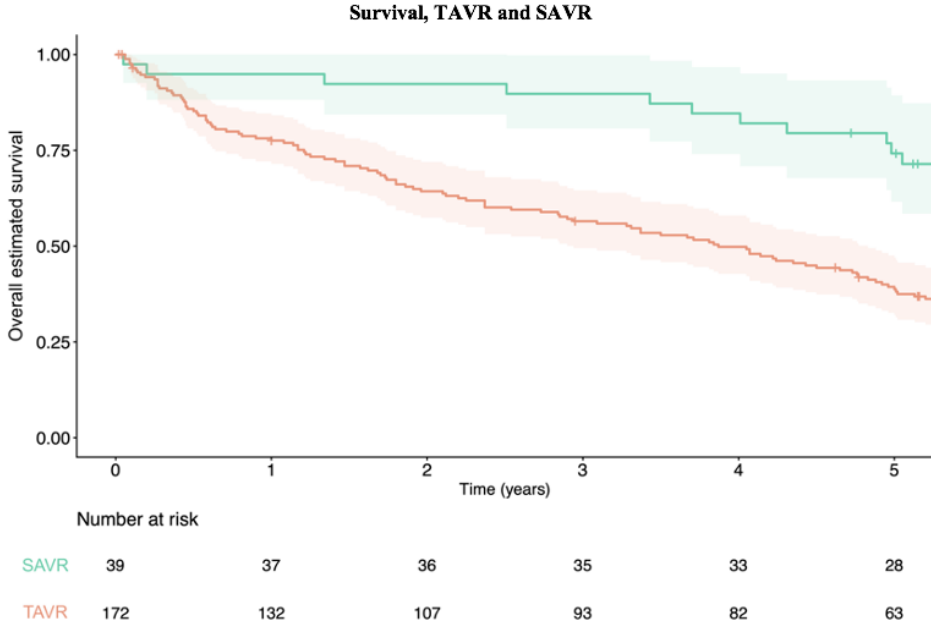
Intraoperative data			
Transfemoral/transaxillary AVR access:	165 (95.9)	-	-
Minimally invasive SAVR	-	17 (43.6)	-
Size of the valve, mm	27.0 (26.0 – 29.0)	24.1 (23.0 – 25.0)	**<0.001**
Model of the SAVR and TAVR valves: Medtronic CoreValve (BS) Lotus Valve Edwards Sapien 3 Edwards Sapien XT SJM Portico Symetis Acurate Medtronic Engager Valve CoreValve Evolute	 25 6 69 2 4 8 1 47		
Jena Valve Boston Lotus Edge Boston Acurate Neo 2 Carpentier-Edwards Perimount Magna Ease Aortic 3300 TFX Carpentier-Edwards Perimount Aortic Model 2900 SJM Trifecta Perigon Medtronic Model 400 SJM-Epic-Aortic Model E L-A Sorin Perceval Edwards Inspiris Resilia Model 11500A	1 3 6	 3 28 2 2 1 2 1	

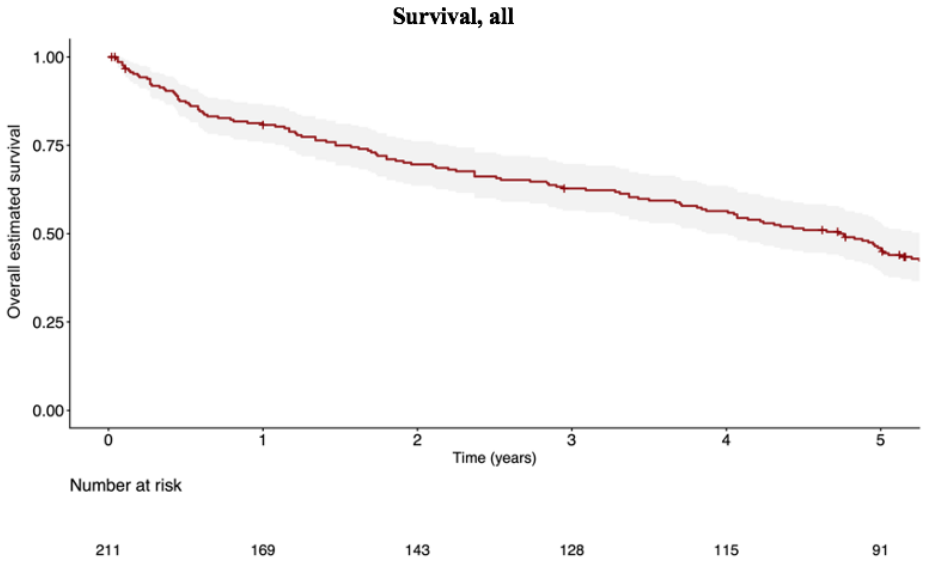
*Only cases with active cancer included (i.e. history of cancer = treated cancer of other origin was excluded/ignored). Also, patients with active endocarditis or prior AV surgery excluded.

Results: Outcomes

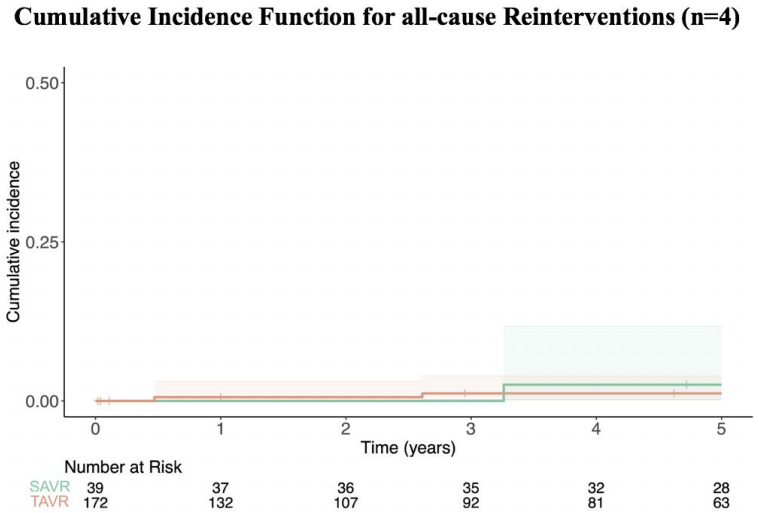
Outcomes	TAVR n = 172	SAVR n = 39	p-value
30-day mortality	2 (1.2)	1 (2.6)	0.46
In-hospital mortality	0	0	1.00
Myocardial infarction	0	1 (2.6)	0.18
Reexploration due to bleeding (any)	37 (21.5)	3 (7.7)	0.068
Acute renal failure requiring dialysis	0	1 (2.6)	0.18
Stroke	8 (4.7)	0	0.36
Tracheostomy	0	0	1.00
Pacemaker implantation	31 (18.0)	3 (7.7)	0.15
Wound infection	0	1 (2.6)	0.18
TAVR with conversion to open surgery	0	-	-
Hospital stay, days	10.0 (6.0 – 17.0)	13.0 (9.5 – 17.5)	**< 0.005**
Mean AV gradient at discharge	9.0 (7.0 – 12.0)	10.0 (7.0 – 13.0)	0.12
Max AV gradient at discharge	16.0 (12.0 – 21.0)	19.0 (14.0 – 24.0)	0.10

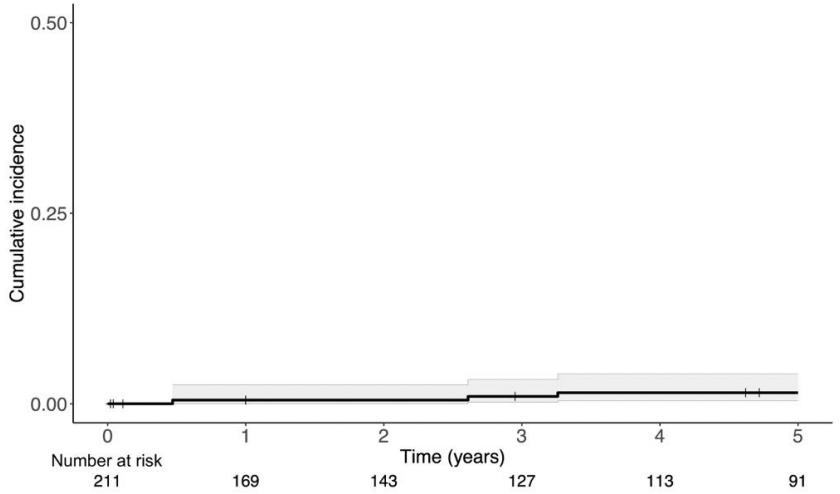
Results: Survival





Results: Re-Intervention

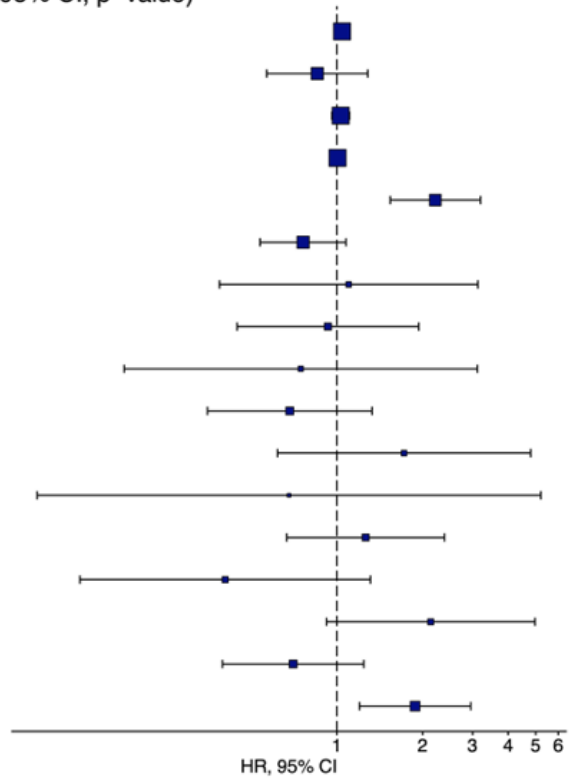




Results: Cox Regression

Cox proportional hazard model for predictors of long–term mortality: HR (95% CI, p–value)

Age, years	1.04 (1.02–1.07, p=0.002)
Female gender	0.85 (0.57–1.28, p=0.445)
Biological valve size, mm	1.03 (0.96–1.11, p=0.409)
LVEF at discharge, %	1.00 (0.99–1.02, p=0.579)
Atrial fibrillation	2.22 (1.54–3.19, p<0.001)
Diabetes mellitus type 2	0.76 (0.54–1.08, p=0.121)
Pancreatic cancer	1.10 (0.39–3.13, p=0.859)
Lung cancer	0.93 (0.45–1.94, p=0.845)
Liver cancer	0.75 (0.18–3.12, p=0.688)
Breast cancer	0.68 (0.35–1.33, p=0.261)
Esophageal or stomach cancer	1.72 (0.62–4.79, p=0.299)
Brain cancer	0.68 (0.09–5.21, p=0.709)
Colon cancer	1.26 (0.67–2.39, p=0.475)
Rectal or other intestinal cancer	0.40 (0.12–1.31, p=0.131)
Female genital cancer	2.14 (0.92–4.97, p=0.078)
Radiation therapy	0.70 (0.40–1.24, p=0.225)
Chemotherapy	1.88 (1.20–2.95, p=0.006)



Conclusion

- TAVR and SAVR are both liable lifetime management options
- No preferential procedure for certain type of cancer
- Heart Team decision is key
- Oncologists should be involved