

# 1st Place: Long-Term Survival Rate of Transcatheter Aortic Valve Replacement

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# Long-Term Survival Rate of Transcatheter Aortic Valve Replacement

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## Background

- Transcatheter aortic valve replacement (TAVR) is a very prevalent procedure for high and moderate risk patients with severe aortic stenosis.
  - Minimally invasive → a median sternotomy is **not** necessary
- Previous studies have found that survival rates for patients on dialysis are significantly lower than regular patients.
  - Renal dysfunction affects the outcome of TAVR
  - Long-term patient survival is not well known

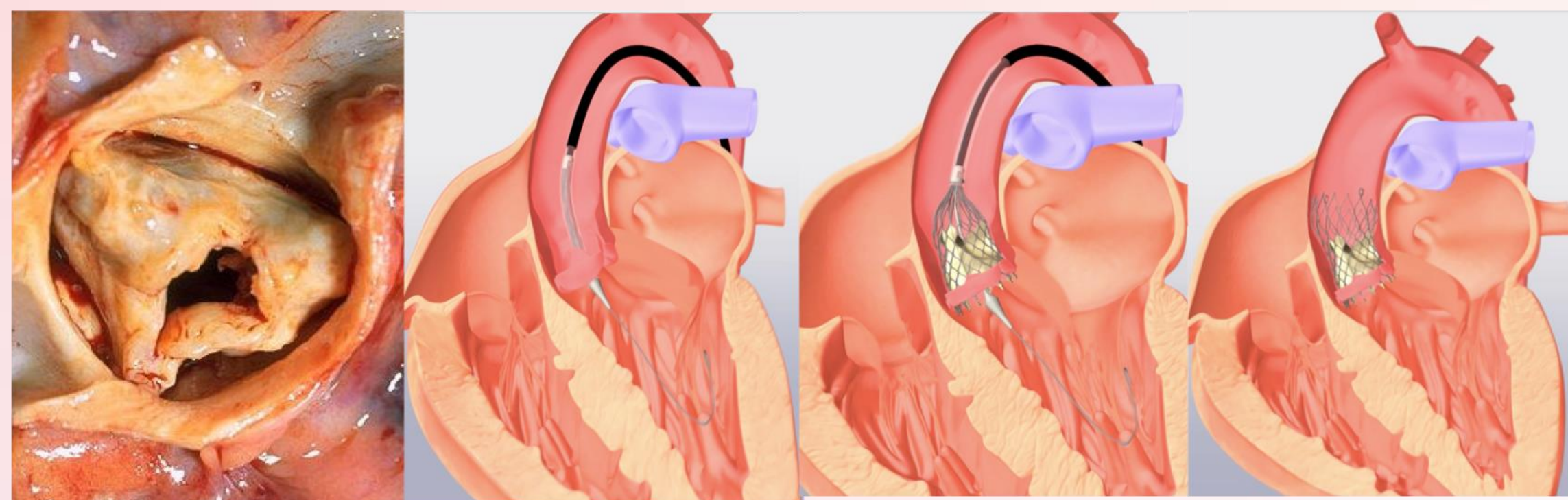


Figure 1: Diagram of TAVR Procedure and Aortic Stenosis

## Objective

- This study seeks to evaluate the survival rates of dialytic, chronic kidney disease (CKD), and standard TAVR patients

## Methods

Classified

- Single-center retrospective review of all TAVR patients from 2012-2019 at LVHN

Reviewed

- Specific patient data gathered and assessed through in-house database
- Data was recorded in the unique REDCap database

Analyzed

- Descriptive statistics were used to analyze the significance of patient survival rates

## Results

- 639 patients total standard patients
  - 150 died (23.47%)
  - Average survival time of 689.59 days (1.89 years)
- 26 patients were simultaneously on dialysis (9.49%)
  - 11 died (42.31%)
  - Average survival time of 569.55 days (1.56 years)
- 271 patients had CKD pre-TAVR
  - 69 died (25.46%)
  - Average survival time of 484.08 days (1.33 years)
- Average length of stay: 4.5 days

Factor	Number of events <sup>a</sup>		Number of censored <sup>b</sup>		Total sample size
	N	%	N	%	
0	149	23.31	490	76.69	639
1	69	27.82	179	72.18	248
2	11	42.31	15	57.69	26
Overall	229	25.10	684	74.90	913

Table 1: TAVR Patient Mortality Summary  
Factor 0: Standard    Factor 1: CKD    Factor 2: Dialysis

Perioperative	Risk Factor	N	%
	CKD	210	23.00
	Renal Failure	61	6.68
	Diabetes	320	35.04
	AFib	283	30.10
	CABG	251	27.49
	COPD	146	15.99
Postoperative	Complication	N	%
	Readmission	129	14.12
	Pacemaker	146	15.99
	Dialysis	11	1.20
	Paravalvular Leak	9	0.99
	Valve Failure	5	0.55
	Endocarditis	2	0.22

Table 2: Pre-TAVR Risk Factors and Postoperative Complications

## Conclusions

- Patients coincidentally on dialysis are at **higher risk** for the TAVR procedure.
  - Significant decrease in survival rates for hemodialytic patients compared to CKD and regular patients
- Long-term survival rates of non-dialysis patients illustrate success for TAVR
- Future research is encouraged to evaluate long-term outcomes of TAVR over ten years and understand the effects of pre-TAVR risk factors.

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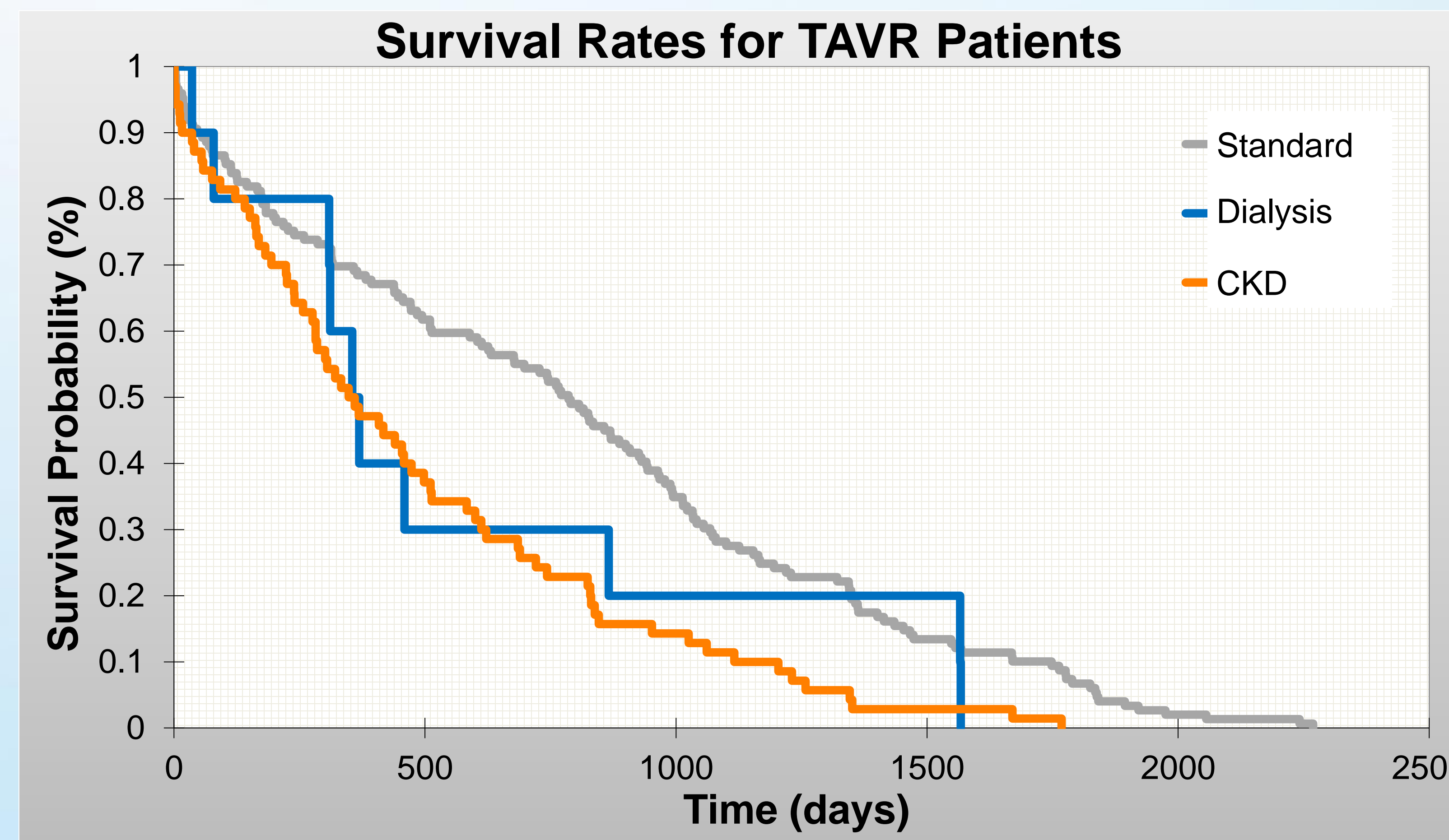


Figure 2: Kaplan-Meier Curve of TAVR Patients  
The sudden, large drops in the dialysis curve illustrates a decreased survival rate for patients on dialysis. The data suggests that this is statistically significant,  $p < 0.001$ .