

CRT-800.35

Transcatheter Aortic Valve Implantation for Severe Aortic Stenosis at a Safety Net Hospital



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BACKGROUND Access to contemporary device based therapy in cardiovascular medicine is often limited by socioeconomic status. Although transcatheter aortic valve implantation (TAVI) is widely available in the United States, use of this therapy in a safety net hospital has not been described. The Objective of the current analysis is to describe a cohort of indigent patients with severe aortic stenosis (AS) undergoing TAVI at an urban safety net hospital.

METHODS From June, 2011 until September, 2016, 401 patients underwent TAVI at Keck Medicine of USC. Patients with insurance (n=350) were excluded yielding 49 indigent patients. Patient characteristics, procedural variables and outcome were collected using the STS/ACC/TVT Registry and were compared to PARTNERS High Risk Study.

RESULTS Mean age was 71±13 years, 55% male with mean ejection fraction 47±19%. Mean STS Score was 4.4±3.5; 7 patients (14%) with an STS score ≥ 8. Eighty-six percent of patients had high risk comorbid conditions, not adequately captured by traditional risk score assessment. Three patients (6%) had a hostile chest, 5 (10%) had cirrhosis, 9 (18%) had an ejection fraction < 30% and 11 (22%) had frailty. Patient characteristics were significantly different compared to those enrolled in PARTNERS High Risk Study (Table). Device success was 100% and device migration/embolization was 0%. In-hospital mortality and 30-Day mortality were both 0%.

CONCLUSION Indigent patients receiving transcatheter aortic valve implantation at a safety net hospital have unique high risk features with 86% of patients not adequately described by traditional risk score assessment. Procedural and short term outcome was excellent suggesting that this therapy can be effectively applied in this patient cohort. Additional follow up is required to ensure acceptable long term outcome.

predominant (77%) and the comparison of the baseline characteristics are shown in Table 1. Gender and age were comparable, however apical type had higher history of hypertension while lower history of diabetes, hyperlipidemia, or smoking. Non-apical type had lower ejection fraction (mean 38.4% versus apical type 41.8%) and statistically significant higher incidence of ejection fraction below 40%.

CONCLUSION Apical and non-apical Takotsubo syndrome had similar baseline characteristics however the incidence of low ejection fraction was higher in non-apical type.

Comparison between Apical and Non-apical type

	Apical	Non-apical
Female	94.7%	88.2%
Age	66	69
Hypertension history	61.4%	35.3%
Diabetes history	10.5%	29.4%
Hyperlipidemia history	45.6%	70.6%
Smoking history	21.1%	35.3%
BP	128/73	120/69
HR	89	81
Ejection Fraction	41.8%	38.4%

CRT-800.37

Outcomes of Transcatheter and Surgical Aortic Valve Replacements: A Population-based Analysis



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BACKGROUND Transcatheter aortic valve replacements (TAVR) were indicated for the treatment of severe, symptomatic aortic stenosis in inoperable patients in 2011 and high risk, operable patients in 2012. The purpose was to examine the performance of TAVR in comparison to surgical aortic valves (SAVR) in a nationally representative population.

METHODS Patients were identified from the 5% Medicare data (1997-2014 for SAVRs and 2011-2014 for TAVRs). Post-operative rates of mortality, mechanical complications, infection, valve re-implantation were evaluated in patients aged 80+. Medicare payments for surgical hospitalization (\$June 2015) were assessed.

RESULTS The following number of valve procedures were identified: 17,413 tissue valves, 10,781 mechanical valves, and 1,377 TAVR. Over 67% of the patients implanted with surgical valves were aged 65-79, whereas 74% of TAVR patients were over 80 years old. The adjusted 10-year mortality, complication, infection and revision risks projected for patients aged 80+ using a multivariate Cox model are presented in the table below. Of note is the significantly high risk of re-implantation for TAVR. Average Medicare payments for patients aged 80+ implanted with tissue valves and TAVRs were \$63.1k and \$53.1k, respectively.

CONCLUSION After adjusting for sex, morbidity level, and other factors, the risk of mortality, complications, and reoperation were higher for TAVRs in comparison to SAVRs, but not significantly in all cases. As TAVR becomes more commonplace in the moderate and low risk groups, a comparison of the long-term outcomes in a nationally representative population will be necessary to assess their safety and efficacy.

10-year mortality, complication, infection, and revision risks

Device	Mortality (Hazard Ratio [#])	Mechanical Complication (Hazard Ratio [#])	Infection (Hazard Ratio [#])	Re-implantation/ Reoperation rates (Hazard Ratio [#])
Tissue Valve	78.9%	3.6%	5.6%	0.4%
TAVR	88.9% (1.48, 1.28-1.71)*	9.3% (2.68, 1.29-5.58)	3.7% (0.64, 0.31-1.34)	2.9% (8.52, 2.12-34.17)*

Relative to tissue valves
*p<0.005

Table. Comparison of patients in current study to those enrolled in PARTNERS High Risk Study.

Characteristic	Current Study	PARTNERS High Risk	p value
Age, years	71±13	84±7	<0.001
Male	55%	58%	0.69
STS Score	4.4±3.5	11.8±3.3	<0.001
Ejection fraction < 20%	15%	0%*	<0.001
Oxygen dependent	7%	9%	0.50
Dialysis dependent	4%	0%*	<0.001
Cirrhosis	10%	2%**	<0.001

*Exclusion criteria for PARTNERS High Risk; **Liver disease defined as history of any liver condition.

CRT-800.36

Comparison Of Clinical Characteristics Of Apical Versus Non-apical Takotsubo Syndrome



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BACKGROUND Takotsubo syndrome is an intriguing phenomenon of a transient, reversible heart failure syndrome. The classically described apical type has been extensively published, however the detailed characteristics of the non-apical variant type remains to be determined.

METHOD We retrospectively reviewed 75 cases of Takotsubo syndrome diagnosed between October 2004 and August 2016. The baseline characteristics were analyzed and compared between the apical and the non-apical types.

RESULT In our whole cohort, the baseline characteristics for gender and age were 93% female with median age of 69. Apical type was