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TCT-804 Outcomes of Trans-Carotid TAVR in a high-Volume Center

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Background

- Transcatheter aortic valve replacement (TAVR) has become standard of care for most patients with severe symptomatic aortic stenosis. Transfemoral access (TF) is preferred access and remain gold standard.
- Registry based data has shown that in upto 20% of the patients TF access is not feasible due to many patients related factors.
- Given exponential growth in the volume of TAVR procedures, there is an unmet need to establish other optimal alternative access when TF access is not feasible.
- We look to compare short-term outcomes by access route at a single center, high-volume, trans-carotid (TC), TAVR program.

Methods

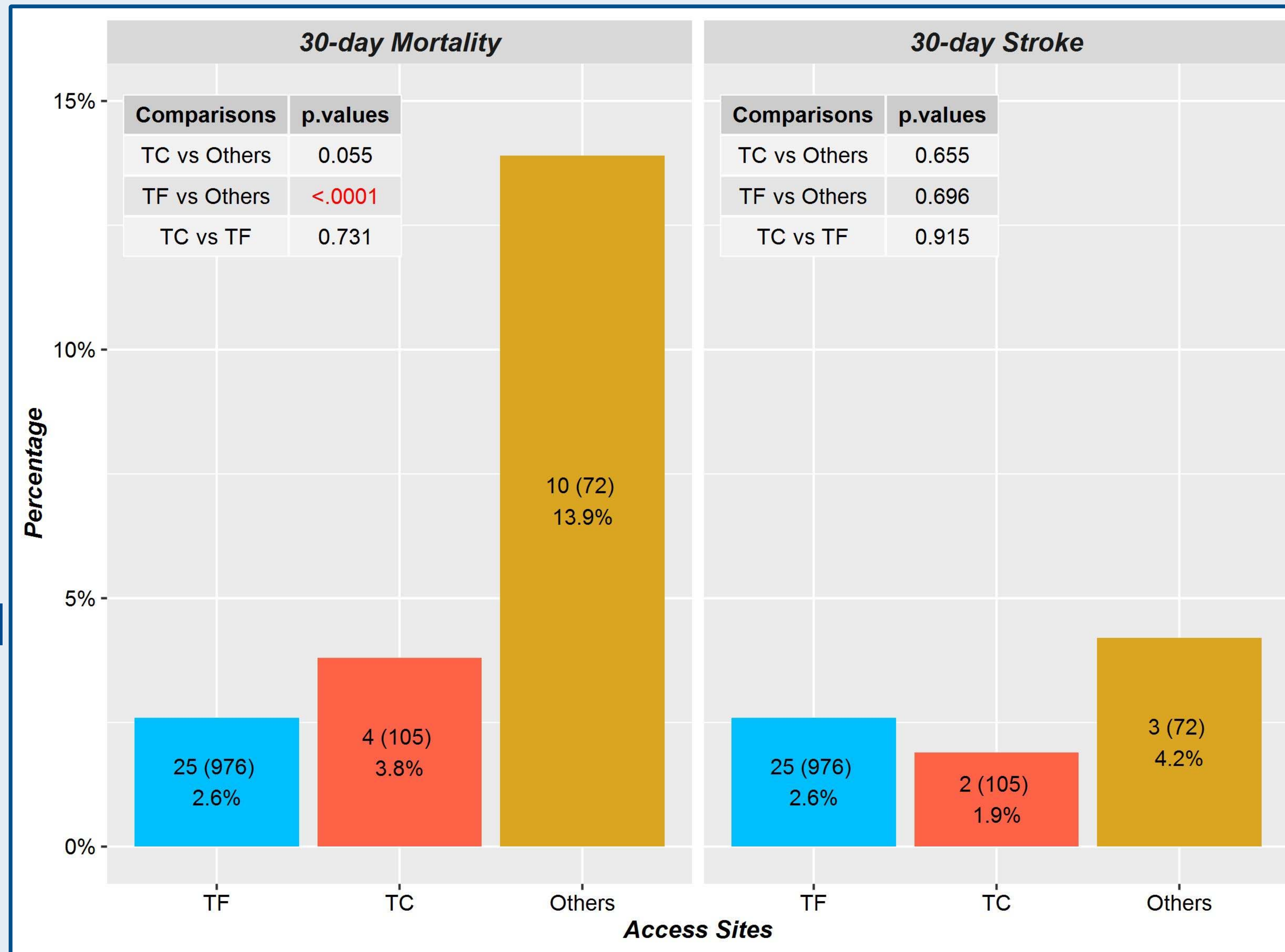
- All patients undergoing TAVR at Providence Heart Institute between 9/2012 and 9/2018 were included in the study.
- Baseline demographics and 30-day outcomes were obtained from data that our institution submitted in compliance with TVT reporting and were also reviewed and confirmed.
- Logistic model or ANOVA were considered for categorical and continuous responses and simulation-based adjustments were applied for pairwise comparison. All significant tests were performed independently across factors (Univariate tests without covariates).

Results

- Total of 1153 TAVR were performed at Providence Heart Institute between 9/2012 and 9/2018.
- 976 (85%) were performed via TF access, 105 (9%) via TC access and 72 (6%) via other access group (transapical, axillary or transaortic).
- TF group had significantly lower STS score, peripheral vascular disease and COPD, compared to TC and other access.
- Other access had significantly higher days in ICU and overall hospital compared to TF and TC. Even though TC access had higher ICU length of stay, overall hospital stay was similar to TF.
- 30-day mortality was higher in other access group (13.9%) compared to TF 2.6% (P <0.0001) and TC (P <0.055).
- There was no statistically significant difference in 30-day stroke rates among all accesses; TF 2.6%, TC 1.9% and others 4.2%.

30-day Mortality and Stroke rates among different access

TF = Trans-femoral, TC = Trans-carotid, Others = (Trans-apical, aortic or axillary)



TC TAVR can be safely performed with similar 30-day stroke and mortality outcomes as TF access

Baseline Demographics

Overall population N=1,153	TF N=976	TC N=105	Others N=72
Age Mean(SD)	81 (10)	80 (8)	82 (8)
Sex (Female) N(%)	477 (49)	54 (51)	40 (56)
BMI Mean(SD)	29.0 (8)	27.8 (7)	27.3 (5)
Race (White) N(%)	948 (97)	101 (96)	70 (97)
Diabetes N(%)	340 (35)	47 (45)	31 (43)
Insulin dependence N(%)	123 (13)	20 (19)	13 (18)
Moderate to severe chronic lung disease N(%)	139 (14)	31 (30)	21 (30)
Hypertension N(%)	858 (88)	96 (91)	64 (89)
Immunosuppression N(%)	88 (9)	9 (9)	10 (14)
Creatinine level Mean(SD)	1.3 (1.0)	1.4 (1.4)	1.3 (0.9)
Dialysis N(%)	37 (4)	5 (5)	2 (3)
Cerebrovascular disease N(%)	111 (11)	18 (17)	23 (32)
Peripheral vascular disease N(%)	235 (24)	92 (88)	52 (72)
Previous stroke N(%)	114 (12)	14 (13)	7 (10)
Previous CABG N(%)	188 (19)	29 (28)	27 (38)
Previous valve procedure N(%)	116 (12)	13 (12)	7 (10)
NYHA class 3 or 4 N(%)	580 (59)	62 (59)	37 (51)
Ejection fraction Mean(SD)	57 (15)	57 (14)	59 (13)
Inoperable patients N(%)	109 (11)	17 (16)	37 (51)
STS-PROM Mean(SD)	6.0 (3.6)	7.1 (5.2)	8.3 (5.8)

Values colored in red: P < 0.05 when compared to TF access
Cells colored in blue: P < 0.05 in comparison between TC and others

Preoperative & Procedure Outcomes

Overall population N=1,153	TF N=976	TC N=105	Other N=72
Preoperative AV Gradient (SD) Mean	40 (15)	36 (13)	39 (11)
Fluoroscopy time Median (IQ)	9.3 (6.9)	8.7 (4.8)	10.8 (7.6)
PRBC use N(%)	54 (6)	5 (5)	11 (15)
PRBC units transfused Mean (SD)	3.4 (2.5)	4.2 (1.8)	3.7 (3.6)
Procedure Time Median (IQ)	62 (28)	67 (20)	100 (39)
ICU (Hours) Median (IQ)	0 (26)	26 (8)	46 (47)
Postop LOS Median (IQ)	2 (2)	3 (1)	6 (6)

Values colored in red: P < 0.05 when compared to TF access
Cells colored in blue: P < 0.05 in comparison between TC and others

Conclusions

- TC TAVR can be safely performed with similar 30-day mortality outcomes as TF access.
- Mortality significantly increased with other accesses compared with TF access.