Comparison of clinical outcomes after transcarotid and transsubclavian versus transfemoral TAVI: a propensity-matched analysis

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Transcarotid (TC) and transsubclavian (TSc) accesses are increasingly used as alternative approaches for TAVI when the transfemoral (TF) access is not suitable. However, concerns remain about the risk of peri-procedural stroke and long-term outcomes following TC or TSc TAVI.

The present study sought to compare early- and long-term outcomes of TC/TSc vs. TF TAVI after propensity-score matching.

260 patients who underwent TAVI through a TF (n=220), TC (n=32) or TSc (n=8) approach at our institution during a 4 years period were identified. A 1:1 matching based on the propensity-score was performed, leading to a population of 40 TF and 40 TC/TSc. Primary endpoints were early complications whereas secondary endpoints were long-term outcomes.

There was no difference in the baseline characteristics. At 30-day post-TAVI, there was no difference in mortality and stroke rates between TF and TC/TSc TAVI (5% vs. 5% mortality, p=1.0 and 2 vs. 1 stroke, p=1.0). After a median follow-up of 21 months, the risk of death (p=0.950), stroke (p=0.817) and myocardial infarction (p=0.155) did not differ between the 2 groups.

After propensity-score matching, no significant difference in early and long-term outcomes was observed between TF and TSc/TSc TAVI. These findings should encourage Heart-Teams to consider a TC or TSc approach when TF access is not available.

Table 1. 30-day and 1-year outcomes according to the arterial access (TF vs. TC/TSc)

| Variables	TF-TAVI (n=40)	TC/TSc-TAVI (n=40)	p-value
30-day outcomes			
All-cause mortality	2 (5.0)	2 (5.0)	1.000
All-stroke	2 (5.0)	1 (2.5)	1.000
Life-threatening bleeding	4 (10.0)	1 (2.5)	0.375
Acute kidney injury stage 2 or 3	2 (5.0)	1 (2.5)	1.000
Major vascular complication	6 (15.0)	6 (15.0)	1.000
Coronary obstruction	0	0	–
Early safety composite endpoint (VARC-2)	10 (25.0)	8 (20.0)	0.804
1-year outcomes			
All-cause mortality	6 (15.0)	7 (17.5)	1.000
Cardiovascular mortality	5 (12.5)	3 (7.5)	0.727
Stroke	3 (7.5)	2 (5.0)	1.000
Myocardial infarction	0 (0)	2 (5)	0.500
MACCE	8 (20.0)	9 (22.5)	1.000
Readmission for heart failure	6 (15.0)	2 (5)	0.219
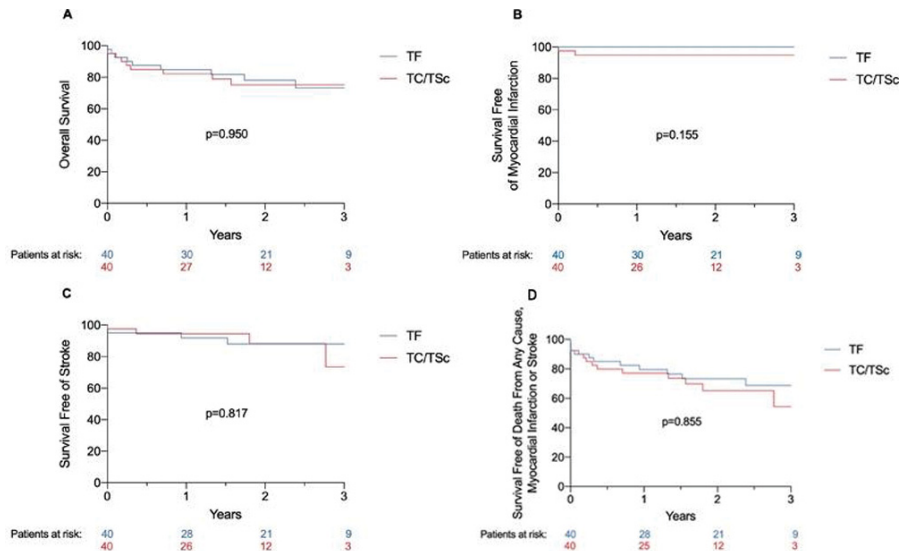
Figure: Kaplan-Meier Analysis for Overall Survival (A), Myocardial Infarction (B), Stroke (C) and MACCE (D) according to the arterial access (Transfemoral (TF) vs. Transcarotid (TC)/Transsubclavian (TSc))

Figure 1