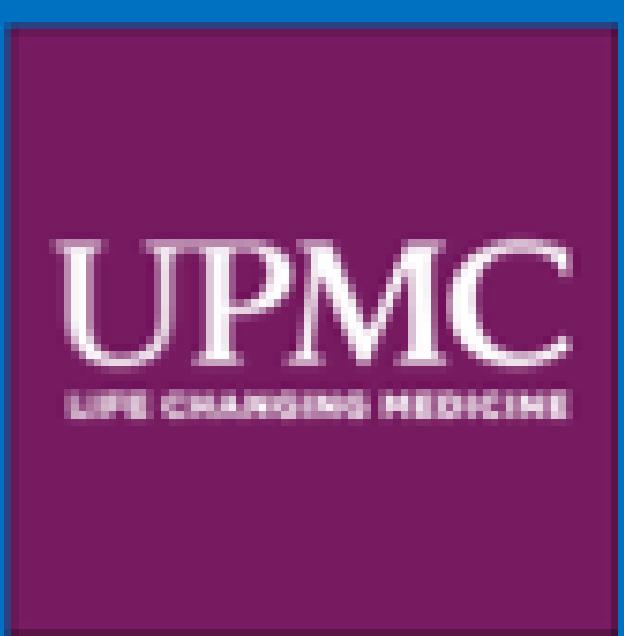




# The Trend and Feasibility of Transcarotid Approach in Transcatheter Aortic Valve Replacement



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## Background

While the transfemoral approach is the commonly used access site for transcatheter aortic valve replacement (TAVR), it is often precluded due to challenging anatomy or diseased arteries. Therefore, alternative access sites have been considered, including transaxillary/transsubclavian, transapical, transaortic, transcaval, and transcarotid approaches.

## Methods

**Setting:** single institution, university-affiliated tertiary hospital

**Data:** Institutional TVT database

**Study period:** 2012- 2024

**Inclusion:** All patients who underwent transcatheter aortic valve replacement

**Outcomes:** long-term survival, perioperative complications

## Limitations

- First, single-institutional study limits the generalizability.
- Second, alternative access may inherit selection bias. For example, some patients with carotid stenosis may be excluded from transcarotid approach.

## Disclosures

None

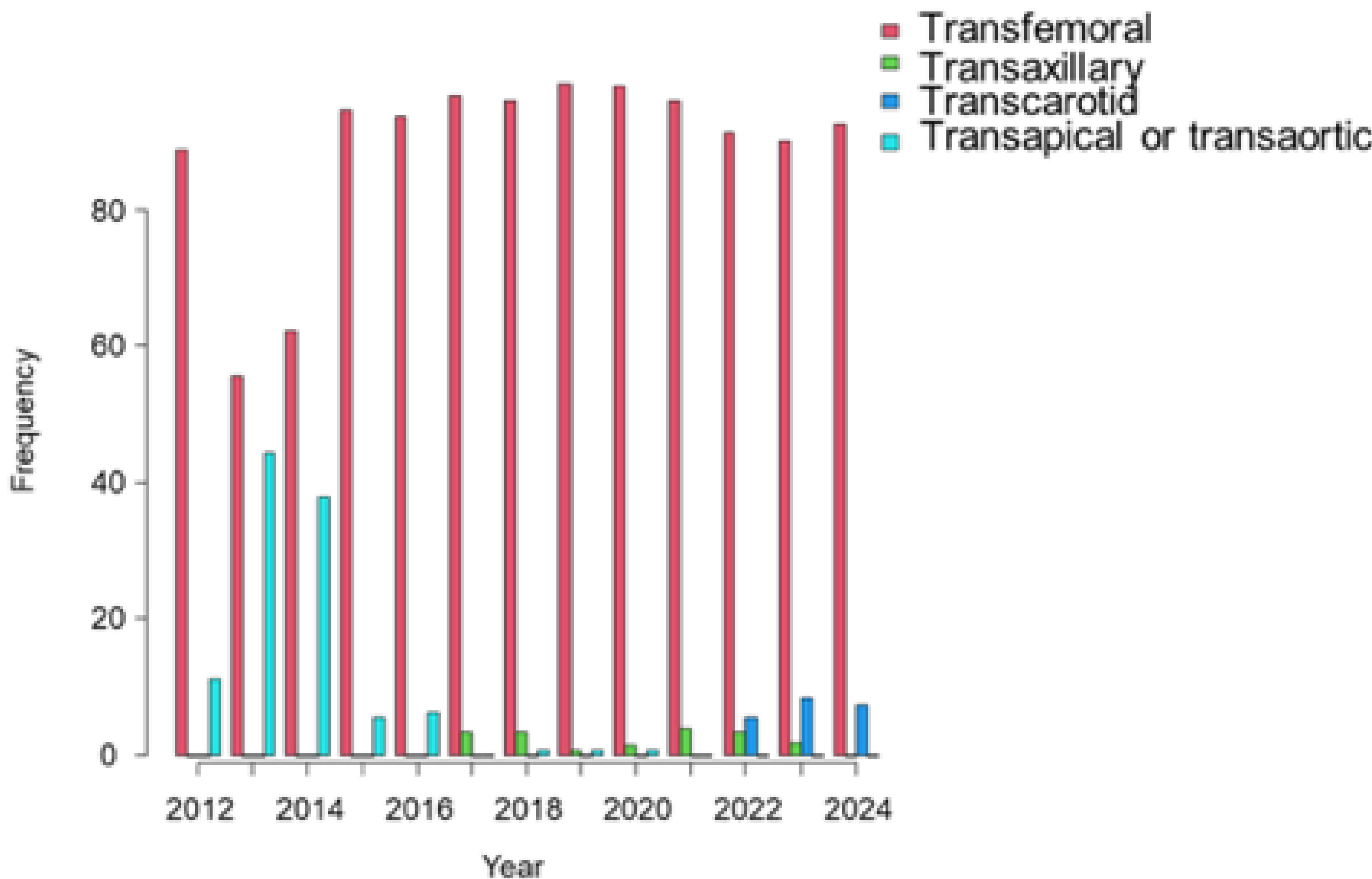


Figure 1. Trend of alternative access

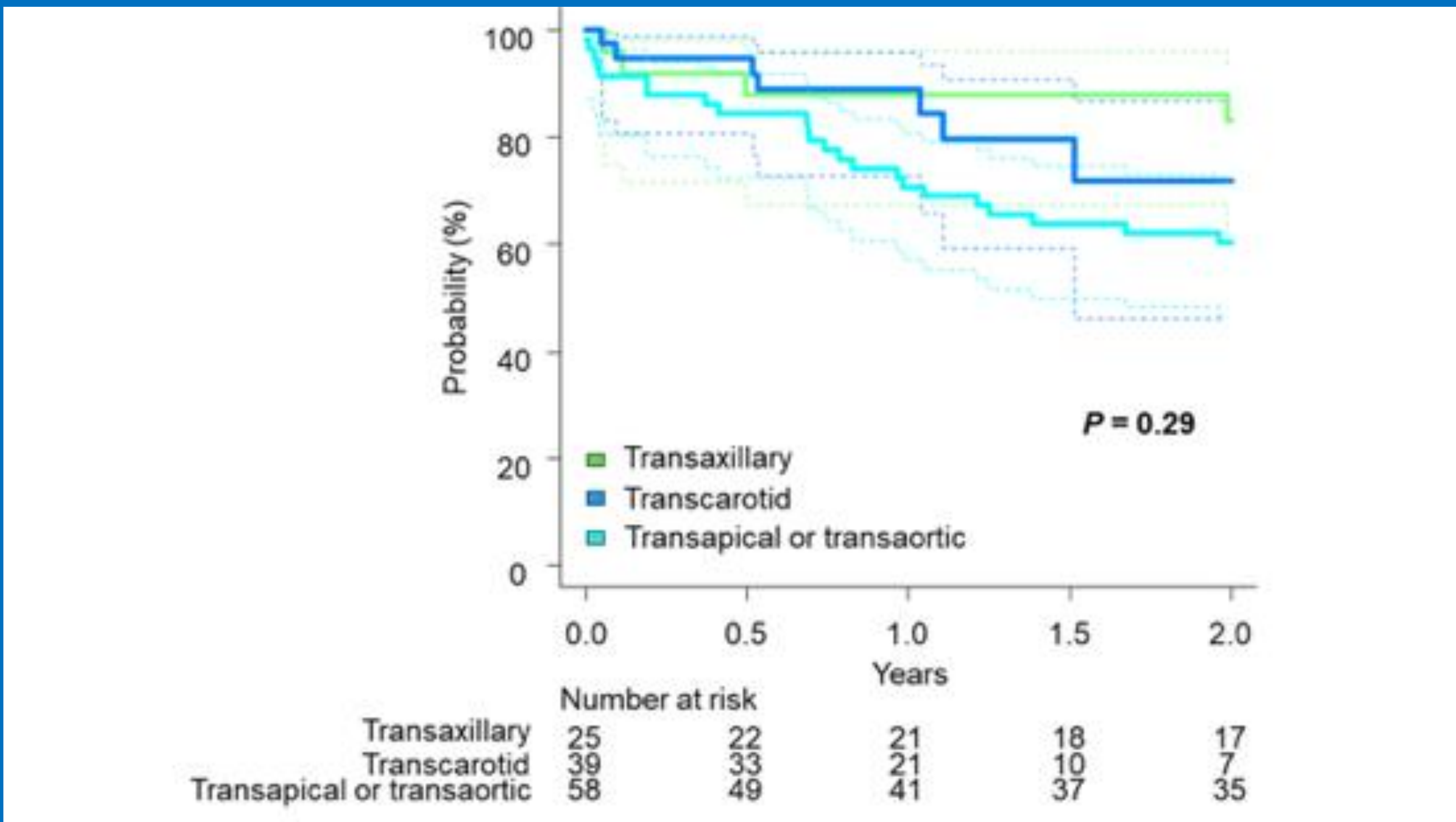


Figure 2. Long-term survival after TAVR with alternative access

## Tables

| Table 1. Baseline Characteristics    |                       |                      |                                       |           |
|--------------------------------------|-----------------------|----------------------|---------------------------------------|-----------|
| Variables                            | Transaxillary<br>N=27 | Transcarotid<br>N=39 | Transapical or<br>transaortic<br>N=58 | P - value |
| Age (mean ± SD, years)               | 77.8 ± 6.6            | 79.5 ± 8.7           | 78.5 ± 7.42                           | 0.65      |
| Male                                 | 17 (65.4)             | 20 (62.5)            | 26 (44.8)                             | 0.12      |
| White                                | 25 (96.2)             | 32 (100.0)           | 58 (100.0)                            | 0.18      |
| Comorbidity                          |                       |                      |                                       |           |
| Hypertension                         | 23 (88.5)             | 30 (93.8)            | 52 (89.7)                             | 0.75      |
| Diabetes mellitus                    | 8 (30.8)              | 15 (46.9)            | 21 (36.2)                             | 0.42      |
| Peripheral vascular disease          | 22 (84.6)             | 19 (59.4)            | 38 (65.5)                             | 0.10      |
| Cerebrovascular disease              | 4 (15.4)              | 8 (25.0)             | 11 (19.0)                             | 0.64      |
| Chronic lung disease                 | 17 (70.8)             | 10 (37.0)            | 28 (48.3)                             | 0.049     |
| Conduction deficit                   | 13 (50.0)             | 13 (40.6)            | 24 (42.1)                             | 0.74      |
| Ejection fraction (mean ± SD, years) | 53.4 ± 12.4           | 56.9 ± 11.5          | 51.2 ± 14.7                           | 0.16      |
| STS risk score (mean ± SD, years)    | 6.39 ± 4.7            | 5.99 ± 3.4           | 10.1 ± 5.7                            | < 0.001   |

| Table 2. Outcomes                          |                       |                      |                                       |           |
|--------------------------------------------|-----------------------|----------------------|---------------------------------------|-----------|
| Variables                                  | Transaxillary<br>N=27 | Transcarotid<br>N=39 | Transapical or<br>transaortic<br>N=58 | P - value |
| Mortality 30 day                           | 1 (4.0)               | 1 (2.6)              | 5 (8.6)                               | 0.42      |
| Stroke                                     | 2 (7.4)               | 3 (7.7)              | 3 (5.2)                               | 0.86      |
| Vascular complication<br>requiring surgery | 0 (0.0)               | 1 (2.6)              | 1 (1.7)                               | 0.72      |
| Device migration                           | 0 (0.0)               | 0 (0.0)              | 1 (1.7)                               | 0.56      |
| Unplanned cardiac surgery                  | 1 (3.7)               | 0 (0.0)              | 1 (1.7)                               | 0.5       |

## Conclusions

The transcarotid approach has become a more popular alternative access during TAVR. The transcarotid approach offers similar outcomes compared to other alternative access sites and is a feasible alternative for other access sites.