see Transfemoral stenting.

Transfemoral access is predominantly used for mechanical thrombectomy in patients with stroke with a large vessel occlusion. Following the interventional cardiology guidelines, routine transradial access has been proposed as an alternative, although its safety and efficacy remain controversial. We aim to explore the noninferiority of radial access in terms of final recanalization.

Methods: The study was an investigator-initiated, single-center, evaluator-blinded, noninferiority randomized clinical trial. Patients with stroke undergoing mechanical thrombectomy, with a patent femoral artery and a radial artery diameter ≥2.5 mm, were randomly assigned (1:1) to either transradial (60 patients) or transfemoral access (60 patients). The primary binary outcome was the successful recanalization (expanded Treatment in Cerebral Ischemia score, 2b-3) assigned by blinded evaluators. We established a noninferiority margin of -13.2%, considering an acceptable reduction of 15% in the expected recanalization rates.

Results: From September 2021 to July 2023, 120 patients were randomly assigned and 116 (58 transradial access and 58 transfemoral access) with confirmed intracranial occlusion on the initial angiogram were included in the intention-to-treat analysis. Successful recanalization was achieved in 51 (87.9%) patients assigned to transfemoral access and in 56/58 (96.6%) patients assigned to transradial (adjusted 1 side risk difference [RD], -5.0% [95% CI, -6.61% to +13.1%]) showing noninferiority of transradial access. Median time from angiosuite arrival to first pass (femoral, 30 [interquartile range, 25-37] minutes versus radial: 41 [interquartile range, 33-62] minutes; P<0.001) and from angiosuite arrival to recanalization (femoral: 42 (IQR, 28-74) versus radial: 59.5 (IQR, 44-81) minutes; P<0.050) were longer in the transradial access group. Both groups presented 1 severe access complication and there was no difference in the rate of access conversion: transradial 7 (12.1%) versus transfemoral 5 (8.6%) (P=0.751).

Conclusions: Among patients who underwent mechanical thrombectomy, transradial access was noninferior to transfemoral access in terms of final recanalization. Procedural delays may favor transfemoral access as the default first-line approach.