

Paper: Favorable first-pass recanalization rates with NeVa™ thrombectomy device in acute stroke patients: Initial clinical experience

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Abstract

Background:

The NeVa thrombectomy device (Vesalio LLC, Nashville, USA) has been reported to succeed in large vessel occlusion thrombectomy in animal, in-vitro, and clinical studies. Designed with Drop Zone technology, a closed distal tip, and strong expansive radial force, the device demonstrated particular efficiency in resistant “white” thrombi in preclinical research. Our goal is to determine the safety and performance of this novel stent retriever on first-pass rates and overall recanalization.

Methods:

The Interventional Neurology Database is a prospectively maintained database of anterior and posterior circulation stroke thrombectomy cases. We retrospectively analyzed cases where the NeVa™ thrombectomy device was used as the first-line treatment strategy. Data collection occurred between January 2019 and January 2020. First-pass recanalization, final recanalization, 90-day functional outcome, complication, and bleeding rates are reported.

Results:

118 patients were treated with the NeVa thrombectomy device. The mean patient age was 69 ± 14 years, the median baseline National Institutes of Health Stroke Scale was 14, and the median initial Alberta Stroke Program Early Computed Tomography score was 8. The median time from groin puncture to successful recanalization was 29 min (interquartile range (IQR): 20–40). First-pass recanalization rates were 56.8% (modified treatment in cerebral infarction (mTICI) 2b/3) and 44.9% (mTICI 2c/3). Final successful recanalization rate was 95.8% (thrombolysis in cerebral infarction 2b/3). Favorable functional outcome (modified Rankin Scale 0–2) was 53% in the “first-pass” subgroup and 42.4% in the total patient population. The median number of passes to achieve the final recanalization score was 1 (IQR 1–2). The rate of embolization into new territory was 1.7%. Four patients (3.3%) had symptomatic hemorrhage.

Conclusions:

In our experience, the NeVa device demonstrated high first-pass and overall recanalization rates along with a good safety profile.

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