



Abstract E-005 Figure 2

Outcomes of all procedures showed that two patients only had residual stenosis 30 days after the intervention. Three patients experienced long-term complications (early stasis in an aneurysm remnant and brainstem infarct). No death was reported in any of the cases.

**Conclusion** This review demonstrates the feasibility and safety of robotic use for neurovascular interventions, including aneurysmal and CAS procedures. Future clinical investigations can potentially assess its usefulness for acute stroke interventions with inherent geographic locations.

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E-006

#### U.S. HEALTH CARE SYSTEM-WIDE TRANSITION FROM ALTEPLASE TO TENECTEPLASE BEFORE MECHANICAL THROMBECTOMY: FUNCTIONAL OUTCOMES, EARLY REPERFUSION RATES, INTRACRANIAL BLEEDING AND FEMORAL ACCESS SITE COMPLICATIONS

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**Background** The third generation thrombolytic tenecteplase (TNK) is a bioengineered variant of alteplase (TPA). With its genetic modifications, it overcomes TPA's major shortcomings resulting in a decreased plasma clearance, higher fibrin-specificity and improved resistance against plasminogen activator inhibitor 1. Mounting evidence established TNK as a non-inferior alternative to TPA in acute ischemic stroke (AIS). However, whether TNK exerts distinct benefits in large vessel occlusion (LVO) AIS is still being investigated. Here, the authors portray their first-year experience after a U.S. health-care system-wide transition from TPA to TNK as the primary thrombolytic.

**Methods** AIS patients who received intravenous thrombolytics between 01/2020 and 08/2022 were retrospectively reviewed.

All patients with LVO considered for mechanical thrombectomy (MT) were included in this analysis. In 05/2021, our healthcare system switched from TPA to TNK as the primary thrombolytic for all stroke patients facilitating the comparison of TPA versus TNK groups. Early recanalization was a composite variable of reperfusion >50% of the target vessel territory on cerebral angiography or rapid, significant neurological recovery averting MT. Intracranial hemorrhage (ICH) was assessed using the ECASS classification. Femoral access-site complications were grouped into major (requiring surgery) and minor (managed conservatively).

**Results** A total of 148 patients were included, 51/148 (34.5%) received TNK and 97/148 (65.5%) TPA. The MCA M1 (60.8%) and M2 (29.1%) were the most frequent sites of occlusion. Baseline demographics were similar between both groups. Spontaneous recanalization was significantly more frequently observed in the TNK compared to the TPA groups (23.5% vs. 10.3%,  $p=0.032$ ). Symptomatic ICH was observed in 2/51 (3.9%) and 1/97 (1.0%) of TNK and TPA patients ( $p=ns$ ). Hemorrhagic infarction and parenchymal hematoma (PH) types 1 and 2 were similar between groups (27.5% versus 25.8%). Additionally, PH2 rates did not differ between groups (5.9% vs. 7.2%). Among 137 patients undergoing transfemoral access with comparable technique, conservatively managed groin hematomas occurred in 2.2% and 4.3% of TNK and TPA patients ( $p=ns$ ). In each group, one patient (2.2% vs 1.1%) suffered arterial occlusion with necessity of open vascular surgery ( $p=ns$ ). Mortality and functional independence were similar at 90-follow-up (19.1% versus 21.1%, and 59.6% and 61.1%, respectively,  $p=ns$ ).

**Conclusions** The first-year experience demonstrates the effectiveness and safety of the transitioning from TPA to TNK. The higher early recanalization rates with TNK are striking. Additional studies are required to investigate whether TNK is superior to TPA in the setting of LVO stroke.

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