Background Mechanical thrombectomy (MT) indications for acute stroke treatment have expanded in the last few years to include medium vessel occlusions. However, limited data is available about the safety and efficacy of MT in the distal anterior cerebral artery (ACA) segments (A2/A3). This study aims to assess the feasibility and outcomes of MT in stroke patients presenting with acute A2 and A3 occlusions in a large multicenter registry.

Methods This is a retrospective analysis from the Stroke Registry of Europe (SURE) multicenter registry. The SURE registry contains data on >10,000 patients suffering an acute ischemic stroke from 180 centers and 16 countries in Europe. We included all patients with acute A2 or A3 occlusions treated with MT from January 1, 2014, to December 31, 2020. Primary outcome of this analysis was the modified Thrombolysis in Cerebral Infarction (mTICI) 2B or 3. Periprocedural complications were defined as those occurring within 24 hours of MT. Intra-arterial tPA prior to MT was used in 4 (14.8%) patients, and symptomatic hemorrhage (sICH) occurred in 1 (3.7%) patient. At 90 days, 17 (63%) patients achieved functional independence (mRS 0-2).

Conclusion In this multicenter study, MT for distal ACA occlusions in the A2/A3 segments seem to be feasible and associated with low complication and symptomatic hemorrhage rates. Future studies are needed to compare the functional outcome of MT versus medical management for stroke patients presenting with A2/A3 occlusions.


Introduction Hereditary Hemorrhagic Telangiectasia (HHT) is a genetic condition associated with a high burden of arteriovenous malformations (AVMs) in multiple organs. Brain AVMs (bAVMs) are of particular clinical significance due to the increased risk of morbidity and mortality if ruptured. Patients with HHT can present with multiple bAVMs of varying sizes and lesions of smaller size, while still clinically significant, may not be readily detected on lower field strength MRI scans although they can be visualized on digital subtraction angiography (DSA). To date, several groups have reported initial findings of 7 Tesla (7T) MR Angiography (MRA) in patients with bAVMs and noted that performance of 7T MRA is superior to 1.5T for detection of bAVMs, provides higher quality images and inter-rater agreement than 3T MRA, and is comparable to DSA. However, none of these studies evaluated lesions associated with HHT. Here, we describe a pilot investigation of 7T Time of Flight MR Angiography (TOF MRA) in a patient who was previously found to have 11 bAVMs on DSA, and compare imaging findings to those identified in earlier scans at lower field strengths.

Materials and Methods Imaging: A volunteer was scanned in a Siemens 7T whole-body human MR system with a Nova Medical 32-channel head coil array. Results from the latest study were compared to reference images collected on GE Signa HDxt whole-body human MR systems at 1.5T and 3T with a 16-channel head coil array, and Siemens AXIOM-Artis biplane angiography system. Readers: Images were each