CAUSES AND IMPACT OF INCOMPLETE REPERFUSION IN ETICI 2B: INSIGHTS FROM THE ESCAPE-NA1 TRIAL

1,2P Cimflóva, 1H Kappellof, 1N Singh, 1A Seghal, 1,2JM Ospel, 1,2F Bala, 1,2M Almekhlafi, 1M Tymianski, 1,2MD Hill, 1,M Goyal. 1University of Calgary, Department of Radiology, Calgary, Canada; 2University of Calgary, Department of Clinical Neurosciences, Calgary, Canada; 3University of Amsterdam, Department of Radiology and Nuclear Medicine, Amsterdam, Netherlands; 4University Hospital of Basel, Department of Radiology, Basel, Switzerland; VioVo, Toronto, Canada

10.1136/neurintsurg-2022-ESMINT.18

Introduction The degree of mTICI 2b reperfusion varies from 51%-89% in acute stroke patients treated with mechanical thrombectomy(MT)1. Incomplete reperfusion could be due to either focal occlusion (residual thrombus, fragmented/migrated thrombus) or slow flow2. With advancing endovascular techniques, residual distal/medium vessel occlusions can be targets for MT or intra-arterial thrombolysis3,4,5.

Aim We investigated the causes of IR and evaluated whether they could be a target for MT. Secondly, we assessed the proportion of incomplete reperfusion leading to infarction on follow-up imaging.

Methods Patients from the ESCAPE-NA1 trial with final mTICI 2b were included. Residual occlusions were evaluated on the final DSA run. The potential targets for MT were assessed as follows: a) single MT-accessible occlusion, b) single MT-accessible occlusion+small/multiple MT-accessible occlusions, c) single non-MT-accessible occlusion, d) multiple small/nom-MT-accessible occlusions or slow flow.

Infarction in the incomplete reperfusion territory was assessed on follow-up CT/MR.

Results Of 1105 patients in ESCAPE-NA1,443(40.1%) were included with a median of 1 MT pass (IQR1–2). A single MT-accessible occlusion was found in 61/443 cases (13.8%), a single MT-accessible occlusion + multiple small non-MT-accessible occlusions in 86/443(19.4%), a single non-MT-accessible occlusion in 36/443(8.1%), and multiple small non-MT-accessible occlusions or slow flow in 260/443 cases (58.7%). Overall, incomplete reperfusion was associated with infarction in 238/443 cases (53.7%), no infarction in 104/443(23.5%) and complete reperfusion was associated with a median of 1 MT pass (IQR1–2).

Conclusion Incomplete reperfusion was most often caused by multiple small non-MT-accessible occlusions and was associated with development of infarct on follow-up imaging in more than half of the patients.

References
1. Cimflóva PP, Kappellof H, Singh N, Seghal A, Ospel JM, Bala F, Almekhlafi M, Tymianski M, Hill MD, Goyal M. University of Calgary, Department of Radiology, Calgary, Canada; University of Calgary, Department of Clinical Neurosciences, Calgary, Canada; University of Amsterdam, Department of Radiology and Nuclear Medicine, Amsterdam, Netherlands; University Hospital of Basel, Department of Radiology, Basel, Switzerland; VioVo, Toronto, Canada.