



POSTER

Relationship between density of thrombus on admission CT and mechanical thrombectomy inefficacy

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Abstract

Background and Objectives: Ischemic stroke is one of the major causes of death and disability. Vessel opening is one of the goals of treatment and earlier recanalization correlates with better outcomes. During some interventions, we noticed that many of our pulls were unsuccessful, even though the same technique and devices were used. Is there any thrombus characteristic on the admission CT scan, including its density in Hounsfield Unit (HU), that can predict the failure of a recanalization (patients with Thrombolysis in Cerebral Infarction (TICI) < 1) following Mechanical Thrombectomy?

Methods: We selected the patients that underwent Mechanical Thrombectomy in our centre for anterior circulation acute stroke (with or without previous tPA) with a final TICI < 1; and the patients with a final TICI = 3 (complete recanalization). Then, we retrospectively reviewed the admission non-contrast CT scans of these two groups, comparing the clot characteristics, including the absolute clot density in HU.

Results: We identified 117 patients with anterior circulation stroke treated with mechanical thrombectomy. In the TICI < 1 group (11.11 of the patients), we observed lower density value of the clot (mean absolute HU 46.5 ± 7.33) vs. the TICI = 3 group (13.67) with higher density value of the clot (mean absolute HU 56.06 ± 3.57). Within the observed groups, we did not identify any other consistent thrombus characteristic.

Conclusion: In this retrospective study, we observed that failure of recanalization during mechanical thrombectomy correlates with lower HU values of the thrombus. This aspect may be related to the composition of the thrombus, formed mostly of fibrin and platelets, as opposed to those constituted mainly by red blood cells. Such information could be used in decision making when estimating recanalization success rate with endovascular treatment approaches.

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