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Prognostic value of capillary index score in acute ischemic stroke endovascular treatment

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Objective: To assess the prevalence of a capillary index score (CIS) and its relationship with clinical outcome in patients with acute ischemic stroke treated by endovascular thrombectomy.

Methods: from Month 2013 to December 2015, in Department of Neurology, Central Hospital of Baotou all 46 patients hospitalized for acute stroke patients were selected continuously. Pretreatment diagnostic cerebral angiograms were evaluated to identify subjects meeting the inclusion criteria to accurately ascribe a CIS. The patients with mRS ≤ 2 were divided into a good prognosis group (n = 21), those with mRS > 2 were divided into a poor prognosis group (n = 25) according to the modified Rankin Scale (mRS) scores after 3 months of treatment. The clinical data of both groups were analyzed, including age, sex, history of diabetes, pretreatment systolic blood pressure, pretreatment IV tPA, time to tPA, the National Institutes of Health Stroke Scale (NIHSS) score, Alberta stroke program early CT score (ASPECTS), stroke onset to first reperfusion time, CIS and mTICI score. The influencing factors of prognosis were further analyzed with multivariate Logistic regression analysis.

Results: There were no significant differences in age, sex, history of diabetes, pretreatment systolic blood pressure, pretreatment IV tPA and time to tPA between the 2 groups (all $p > 0.05$). There were significant differences in the NIHSS score (15 ± 3 vs. 19 ± 4), ASPECTS score [8(7,10) vs. 6 (5,8)], fCIS (85.7% vs. 44%), stroke onset to first reperfusion time [(363 \pm 42) min vs. (398 \pm 53) min] and mTICI (2b,3) [100%(21/21) vs. 68% (17/25)] (all $p < 0.05$). Multivariate Logistic regression analysis showed that the CIS (OR = 7.2, 95%CI : 2.900 ~ 34.000, mTICI (2b,3) (OR = 5.6, 95%CI : 1.800 ~ 19.300) were the prognostic risk factors for patients with acute ischemic stroke treated by endovascular thrombectomy. Conclusions CIS and modified thrombolysis in cerebral infarction were strong predictors of outcome after endovascular reperfusion. Using the CIS to improve patient selection could be a powerful strategy to improve rate of good outcomes in endovascular therapy.