Asymptomatic Intracranial Hemorrhages Correlate With Poor Patient Outcomes and NIHSS Predictivity: A Retrospective Analysis of Post-Thrombectomy Ischemic Stroke Patients

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Asymptomatic intracranial hemorrhage (aICH) patients present with either a decrease or no change in NIHSS scores, which may falsely indicate clinical improvement in the days leading up to their hemorrhage. Symptomatic intracranial hemorrhages (sICH), identified by rising NIHSS scores, indicating poor patient recovery, are associated with poor clinical and functional outcomes. However, no studies have yet found significant correlations between aICH and such outcomes, potentially leading to unsuitable treatments or discharge plans. Thus, this novel retrospective study analyzed the clinical (discharge dispositions and mortality rates) and functional outcomes (mRS scores) of aICH and investigated NIHSS score predictivity in 617 post-thrombectomy ischemic stroke patients using clinical datasets from Carestream PACS database. I analyzed clinical and functional outcomes in aICH, sICH, and no hemorrhage patient cohort. I created each patient cohort utilizing radiologists reports and NIHSS scores. Results showed aICH patients had a significantly higher mean mRS score than sICH patients and no hemorrhage patients ($p<0.0001$), suggesting that aICH patients have poor functional outcomes (such as impaired speech or motor skills). Additionally, aICH patients had significantly worse survival rates (81%) in comparison to sICH (94.34%) and no hemorrhage patients (92.26%) ($p<0.01$), suggesting poor clinical outcomes in aICH patients. An insignificant correlation was found between changes in NIHSS scores and functional outcomes ($p>0.05$), suggesting NIHSS scores are not a reliable aICH biomarker. These findings may be used to inform the standardization of treatments and appropriate usage of NIHSS scores in post-thrombectomy ischemic stroke patients.

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