

EVALUATION OF THE PREDICTORS OF HEMORRHAGIC TRANSFORMATION AFTER INTRAVENOUS THROMBOLYSIS IN HYPERACUTE ISCHEMIC STROKE IN A TERTIARY NEUROLOGY HOSPITAL OF BANGLADESH

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Background: Hemorrhagic transformation (HT) is a major complication after intravenous thrombolysis (IVT) in hyperacute ischemic stroke and may worsen early outcomes. The aim of the study to evaluate baseline clinical, hemodynamic, and laboratory predictors of HT among hyperacute ischemic stroke patients treated with IVT in a stroke unit of a referral neuroscience hospital. **Methods:** This observational study was conducted in the Stroke Unit of the National Institute of Neurosciences & Hospital (NINS&H), Dhaka, Bangladesh, from March 2024 to March 2025. A total of 100 patients aged 18–80 years who received IV rt-PA within 4.5 hours of symptom onset were included. HT was categorized as hemorrhagic infarction (HI1/HI2) or parenchymal hematoma (PH1/PH2) on follow-up imaging. Data were analyzed with IBM SPSS Statistics version 27. Group comparisons were performed between patients with and without HT, and univariate logistic regression was used to estimate odds ratios (ORs). **Results:** HT occurred in 12/100 (12.0%) patients (HI1 2.0%, HI2 8.0%, PH1 1.0%, PH2 1.0%). Patients with HT were older, more frequently smokers, had higher baseline and repeat NIHSS, higher admission blood pressures, and higher baseline glucose and HbA1c. In univariate models, significant predictors included age >65 years (OR 10.04), smoking (OR 11.30), lower GCS score (OR 4.72 per 1 unit decrease), higher baseline NIHSS (OR 1.87 per point), higher SBP (OR 2.02 per 10 mmHg), higher baseline glucose (OR 1.40 per mmol/L), higher HbA1c (OR 2.80 per 1%), hypertension (OR 9.17), diabetes (OR 7.26), dyslipidemia (OR 27.72), prior stroke (OR 11.54), and higher ASPECTS score (OR 4.22 per point). **Conclusion:** HT after IVT was associated with older age, smoking, greater stroke severity, elevated blood pressure, dysglycemia, and vascular comorbidities. Routinely available baseline variables may help stratify HT risk & guide monitoring intensity after thrombolysis.

Keywords: Acute ischemic stroke; intravenous thrombolysis; hemorrhagic transformation; NIHSS; risk factors

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