

ASSOCIATION BETWEEN LESION TOPOGRAPHY AND CARDIOMETABOLIC RISK PROFILES IN ISCHEMIC STROKE AND INTRACEREBRAL HEMORRHAGE: A HOSPITAL-BASED CROSS-SECTIONAL STUDY FROM BANGLADESH

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Background: Stroke is a major cause of death and disability worldwide. Lesion location influences stroke presentation, prognosis, and underlying mechanisms. However, evidence linking lesion topography with vascular risk factors in Bangladesh remains limited. This study examined the association between lesion location and cardiometabolic risk factors among patients with ischemic stroke and intracerebral hemorrhage (ICH). **Methods:** This hospital-based cross-sectional study was conducted at Shaheed Suhrawardy Medical College Hospital, Dhaka, from January to December 2025. A total of 334 adults with imaging-confirmed stroke were enrolled, including 198 ischemic stroke and 136 ICH cases. Lesion locations were determined by CT and/or MRI and categorized by vascular territory for ischemic stroke and anatomical location for ICH. Sociodemographic characteristics and vascular risk factors were collected using a structured case record form. Associations between lesion location and risk factors were evaluated using chi-square tests and multivariable logistic regression. **Results:** The mean age was higher in ischemic stroke than ICH (63.0 ± 12.3 vs 59.1 ± 13.2 years; $p = 0.021$). Hypertension was more common in ICH (79.4%) than ischemic stroke (67.7%) ($p = 0.018$), whereas diabetes mellitus and dyslipidemia were more frequent in ischemic stroke (49.5% vs 30.1% and 52.5% vs 27.9%; both $p < 0.001$). Anterior circulation infarction was the most common ischemic lesion (52.5%), while deep hemorrhage predominated in ICH (58.1%). Hypertension independently predicted deep ICH (AOR 2.74; 95% CI 1.39–5.41; $p = 0.003$). Diabetes mellitus, dyslipidemia, and arrhythmia were independently associated with anterior circulation infarction. **Conclusion:** Stroke lesion location is associated with distinct vascular risk profiles. Hypertension is strongly linked to deep ICH, whereas metabolic and cardioembolic factors are associated with anterior circulation ischemic infarction, highlighting the importance of targeted prevention strategies.

Keywords: Stroke; ischemic stroke; intracerebral hemorrhage; lesion location; hypertension; diabetes mellitus; dyslipidemia.

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