B.4

Time to intervention in anticoagulant-associated intracerebral hemorrhage: gaps in care and their effect on hematoma expansion

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doi: 10.1017/cjn.2025.10156

Background: In intracerebral hemorrhage (ICH), hematoma expansion (HE) is a major predictor of mortality and morbidity. A rapid approach, including oral anticoagulant (OAC) reversal and blood pressure (BP) reduction, both <60 min from arrival, improves outcomes. We aimed to evaluate current time metrics in the management of anticoagulant-associated intracerebral hemorrhage (AAICH) and their impact on HE in a high-income setting. Methods: Consecutive AAICH patients presenting to a high-volume stroke center (2017-2023) were retrospectively identified. Clinical and imaging data were merged, with baseline and follow-up hematoma volumes quantified using 3D Slicer segmentation software. Results: Of 75 AAICH patients, 62 received antihypertensives and 52 OAC reversal, with median(IQR) times to BP control: 87.5 (61-207) minutes and median time to OAC reversal: 67.5 (49-96) minutes. Only 14 (23%) and 23 (44%) achieved treatment targets <60 minutes, respectively, and 7 (9%) patients achieving both targets. HE occurred in 27 of 48 patients with follow-up imaging. Median time to target BP was significantly longer in those with HE (186.5 (87-317) min) compared to those without HE (70 (56-104) min), p=0.01. Conclusions: Current management of AAICH remains heterogeneous, with considerable treatment delays regarding BP control and OAC reversal. These findings support the implementation of standardized protocols to optimize AAICH treatment.

B.5

Does major depression after stroke influence the risk of suicide after stroke?

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doi: 10.1017/cjn.2025.10157

Background: Stroke survivors have a higher risk of depression and suicide, but how hospitalization for major depression modifies the risk of suicide after stroke is not well-known. Methods: We conducted a population-based matched cohort study of adults hospitalized with first-ever stroke between 2008 to 2017 matched 1:1 to the general Ontario population on age, sex, neighbourhood-level income, rurality, and comorbidities. Patients with major depression or deliberate self-harm prior to index event were excluded from both groups. We used cause-specific proportional hazards models to evaluate the association between stroke and suicide (defined as self-harm or death by suicide) and used an interaction term to assess effect modification of depression on stroke-suicide association. Results: We included 64,719 matched pairs of patients with stroke and without (45.5% female, mean age 71.4 years). Compared to matched controls, stroke survivors had a higher rate of suicide (11.1 vs. 3.2, HR 2.87 [2.35-3.51]). Depression was associated with a higher rate of suicide in both groups (HR 13.8 [8.82-21.61]). The interaction between stroke and depression was not significant ($P_{stroke*depression} = 0.51$). Conclusions: Hospitalization for depression does not modify the rate of suicide after stroke, suggesting the need to better understand the pathways leading to suicide after stroke.

B.6

Location-specific hematoma volume tolerances for spontaneous intracerebral hemorrhage

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doi: 10.1017/cjn.2025.10158

Background: Location-specific hematoma volume thresholds are associated with poor outcomes and can inform surgical trial inclusion criteria and clinical decision rules for hematoma evacuation. Methods: We performed a secondary analysis of the ATACH-2 and INTERACT2 clinical trials. We evaluated the associations between intraparenchymal location-specific hematoma volume cutoffs (basal ganglia, thalamus and lobar) and poor outcome (modified Rankin Scale 4-6). Using 24-hour CT scans, we calculated Youden's index for each hematoma location to determine the optimal location-specific volume thresholds that predict outcomes. We calculated odds ratios (OR) of poor outcome through multivariable logistic regression models for each location. Results: Out of 1691 patients, 919, 551 and 221 were diagnosed with basal ganglia, thalamus and lobar intracerebral hemorrhage (ICH), respectively. Location-specific hematoma volume cutoffs most predictive of a poor outcome (mRS 4-6) were 22.24 mL for basal ganglia ICH (OR 4.82, 95% CI 3.19-7.27), 8.13 mL for thalamus ICH (OR 2.73, 95% CI 1.62-4.59) and 21.99 mL for lobar ICH (OR 6.31, 95% CI 2.53-15.74). Conclusions: Hematoma volumes associated with poor outcomes vary by location, supporting the idea that location-specific "hematoma volume tolerances" exist. Our results provide important data on location-specific hematoma volume tolerances to inform clinical trials in ICH management.