MetroHealth Medical Center

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Abstract Submission Form

Poster Title: **The Clinical Impact of Anticoagulants and Platelet Aggregation Inhibitors on Spontaneous Intracerebral Hemorrhage**

Authors: **Varunil N. Shah, Ravi Dhamija, Michael L Kelly MD, David Kaelber MD, PhD, MPH, Deven Reddy MD**

Presenter's Name: **Varunil N. Shah**

Location of Laboratory: **TriNetX database study, access through MetroHealth**

Category: **Clinical Research**

Introduction: Nontraumatic spontaneous intracerebral hemorrhage (sICH) is bleeding within the brain parenchyma and can associated with hypertensive damage to blood vessels, aneurysmal rupture, arteriovenous malformations, amyloid angiopathy, cancer, infections, thrombosis, and other conditions. This study aims to determine the clinical impact of platelet aggregation inhibitor (PAI) and anticoagulant (AC) medication on patients with spontaneous ICH.

Methods: This was a retrospective study that utilized the US collaborative network (with NLP) on the TriNetX Analytics network. From the database using ICD-10 codes, three groups were created: sICH patients on AC but not on PAI (sICH-AC), sICH patients on PAI but not on AC (sICH-PAI), and sICH patients on neither PAI nor AC (sICH-N). Patients in these groups had this condition met 30 days prior to their sICH and one day prior to their sICH. One-to-one propensity matching was completed based on demographics and cardiological, neurological, endocrine, and respiratory conditions. Odds Ratios with 95% confidence intervals (CI) were calculated. The primary outcome was mortality at 30 days and 1 year.

Results: The US collaborative network (with NLP) consisted of 100,860,005 patients. There were 222,174 patients in the sICH-N group, 31,464 patients in the sICH-AC group, and 17,694 in the sICH-PAI group. After 1-to-1 propensity matching the sICH-AC and sICH-N groups, patients in the sICH-AC group had a odds ratio for mortality of 1.253 (95% CI: 1.180-1.294, $p<0.0001$) at 30 days and 1.46 (95% CI: 1.406-1.517, $p<0.0001$) at one year compared to the patients not taking AC or PAI. Additionally, after propensity matching the sICH-PAI group and the sICH-N group, patients in the sICH-PAI group had a odds ratio of 0.721 (95% CI: 0.677–0.796, $p<0.0001$) for mortality at 30 days and 0.822 (95% CI: 0.781–0.865, $p<0.0001$) at one year. After propensity matching and comparing the sICH-PAI and sICH-AC groups, patients in the sICH-PAI group had a odds ratio for mortality of 0.579 (95% CI: 0.544–0.616, $p<0.0001$) at 30 days and 0.567 (95% CI: 0.540–0.596. $p<0.0001$) at 1 year.

Conclusions: According to the findings, patients on anticoagulants are at a significantly higher risk for mortality following a sICH compared to patients on platelet aggregation inhibitors and patients not on PAI or AC. In addition, patients on PAIs fair better suggesting a potential protective effect.