

MetroHealth Medical Center

RESEARCH DAY 2023

Abstract Submission Form

Poster Title: Diuretic use Associated with Increased Mortality in Geriatric Traumatic Brain Injury Patients.

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Category: Clinical Research

Introduction:

Diuretics are commonly used in elderly patients with many hemodynamic effects on blood volume, cerebral spinal fluid levels, and electrolyte balance. This population has higher risk of falls and subsequent traumatic brain injuries (TBI); however, the association between prior diuretic use and TBI outcomes is unknown.

Objective:

To identify associations between prior diuretic use and outcomes one-month post-TBI.

Methods:

We performed a retrospective review of 56 US Healthcare Organizations through the US Collaborative Network in TriNetX. We identified TBI patients ≥ 65 years with six-month history of general diuretics, no diuretics, furosemide, or thiazide use prior to TBI. A 1:1 propensity-matched and Kaplan-Meier analysis performed to assess outcomes one-month post-TBI.

Results:

After propensity matching (n=58,024), the diuretics group had increased mortality (OR=1.685, 95% CI=[1.617, 1.756]) and lower survival (88.23% vs. 92.57%, $p < 0.001$) compared to the no diuretic group. Post matching (n=23,492), the furosemide group had increased mortality (OR=1.874, 95% CI=[1.756, 1.999]) and lower survival compared to the thiazide group (87.49% vs. 92.94%, $p < 0.001$). Rates of post-TBI complications were higher in the diuretics and furosemide groups compared to the no diuretics and thiazide groups respectively ($p \leq 0.001$).

Conclusion:

To our knowledge this is the first study exploring the relationship between diuretic use prior to TBI and TBI outcomes. Respectively, the diuretics and furosemide groups had higher mortality and complication rates compared to the no diuretics and thiazide groups. Our findings could be explained by diuretic-induced hemodynamic changes or confounding factorings that predispose patients to worse injuries and TBI outcomes.