ASSOCIATION BETWEEN RACE, ETHNICITY, AND SEX WITH PREHOSPITAL IDENTIFICATION AND OUTCOMES OF PATIENTS WITH STROKE

Abstract

Background: Stroke is a significant cause of morbidity and mortality. The American Heart Association projects a 20.5% increase in stroke cases by 2030. Previous research has reported racial, ethnic, and sex-based disparities in access to definitive treatments and outcomes for patients with stroke. However, there is little research on the impact of these factors on prehospital identification of stroke and linking this to patient outcomes.

Objective: This study determined the association between race, ethnicity, and sex and the rate of prehospital stroke identification and patient outcomes.

Methods: This is a multi-center, retrospective analysis of adult acute stroke patients presenting via Emergency Medical Services (EMS) between 01/01/2020 and 12/31/2022 who met criteria for inclusion into the local *Get with the Guidelines – Stroke* registry. A multivariable logistic regression modeled the association between sex, race, and ethnicity and EMS impression, adjusting for age, demographics, stroke severity, EMS, presentation with classic stroke symptoms, and EMS agency type (urban, suburban, or rural). Multivariable regression modeled discharge disposition, controlling for receiving hospital stroke certification, cardiovascular risk factors, acute intervention, and the above covariates.

Results: Out of 4,488 patients with a final hospital diagnosis of cerebrovascular accident or transient ischemic attack, 3,749 (83.5%) were identified and 739 (16.5%) were not identified as a suspected stroke by EMS. After adjusting for covariates, male and Hispanic patients had greater odds of identification as a stroke compared to female and non-Hispanic patients (adjusted OR [aOR] 1.26, 95% CI 1.08-1.47, aOR 1.92, 95% CI 1.29-2.87, respectively); non-White patients had similar odds of identification as a stroke compared to White patients (aOR 1.00, 95% CI 0.55-1.82). After adjusting for covariates, male patients had higher odds of being discharged to death or hospice compared to female patients (aOR 1.43, 95% CI 1.08-1.88). Race and ethnicity were not associated with discharge disposition after adjusting for covariates.

Conclusion: While both male and Hispanic patients are more likely recognized as stroke by prehospital clinicians, only male sex remained associated with a poor discharge disposition. Additional research into causes of these disparities in prehospital stroke identification may improve prehospital patient care, and change ultimate outcomes.