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Recommended Citation

Houck J, Stead T, Banerjee P, Ganti L. HUP2 - Hispanics have higher grade intracerebral hemorrhage compared to non-Hispanics. Presented at: International Stroke Pre-Conference; February 18, 2020; Los Angeles, CA.

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Hispanics have Higher Grade Intracerebral Hemorrhage Compared to Non-Hispanics

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February 2020

This research was supported (in whole or in part) by HCA and/or an HCA affiliated entity. The views expressed in this publication represent those of the author(s) do not necessarily represent the official views of HCA or any of its affiliated entities.

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Introduction

Racial and Ethnic disparities in Stroke are an important area of investigation. In this study the authors sought to determine whether Hispanics have worse intracerebral hemorrhage as measured by the intracerebral hemorrhage score (ICH) score

Methods

Prospective observational study of consecutive patients with discharge diagnosis of acute nontraumatic intracerebral hemorrhage (ICH) presenting to conducted at a county ED with 53% Hispanic population (predominantly Puerto-Rican).

Independent variables were Hispanic ethnicity, age and gender. Dependent variable was the ICH Score, composed of five variables including the Glasgow Coma Score, age, ICH volume, presence of intraventricular hemorrhage, and whether the hemorrhage was of infratentorial origin.

Results

The cohort (n=179) was 47% Hispanic, 44% White, 10% Black. Median age was 65 years (IQR 51-77). 53% were female. Cohorts were matched on median sBP, dBP, BMI, HbA1C, age, gender, ED NIHSS, median modified Rankin score at discharge, % in-hospital death, and % discharge home, These baseline characteristics of Hispanics and non-Hispanics were comparable (P= non-significant, z test for proportions).

ICH scores ranged from 0-5, (median =2, IQR 1-3.75). Median ICH score for Whites =1.5, for Blacks 2.25, and for Hispanics 2.5. Wilcoxon's nonparametric rank-sum test on ICH score demonstrated that Hispanics had significantly higher ICH scores, $p = 0.0102$. In a multivariate linear regression model incorporating Hispanic ethnicity, age and gender, Hispanic ethnicity was significantly associated with higher ICH scores ($P = 0.0065$).

Results

Overall, this multivariate logistic regression model was robust, with an R2 statistic =17%. Furthermore, neither age nor gender were significant in the multivariate model or in univariate analysis. A univariate model accounting for only Hispanic ethnicity found that Hispanic ethnicity was significantly associated with higher ICH scores (P = 0.0057, 95%CI -1.0225 to -0.1847), with an R2 statistic =15.5%.

Conclusion

In this single center cohort of acute nontraumatic intracerebral hemorrhage, Hispanics had significantly worse bleeds as measured by the ICH score, even after accounting for age and gender, and examining cohorts that were matched by baseline characteristics such as BP and BMI. These findings warrant further study and perhaps community education to address gaps.