

# Association between gender and receipt of magnetic resonance imaging (MRI) in stroke patients from Puerto Rico

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## Abstract

**Introduction:** Stroke is the fifth principal cause of death in the United States and Puerto Rico and a prime cause of adult disability. Women tend to have worse outcomes post-stroke. Initial diagnoses and management of stroke include the use of computed tomography (CT) and magnetic resonance image (MRI) scans. MRI scans are more sensitive and more specific than CT scans. Still, CT scans are used more commonly. Whether differences in the choice of imaging techniques exists for gender and whether that can be a potential reason for gender differences in post-stroke outcomes it is yet unknown. The study is directed to evaluate the association between gender and receipt of a MRI in stroke patients in the Puerto Rico population. **Methods:** We did a secondary analysis of data collected from patients who suffered from a stroke and who participated in the Puerto Rican Cardiovascular Surveillance System (PRCSS) in 2007, 2009 and 2011. The main independent variable was gender (male and female). The dependent variable will be receipt of a MRI (alone or in combination with any other imaging modality as recorded in the medical charts). Multivariate logistic regression was used to assess for the independent associations. P-value < 0.05 for a two tailed test was considered to be statistically significant. SPSS software was used for analysis. **Results:** A total of 1,950 patients suffered from an ischemic stroke and participated at the PRCSS. We excluded 595 patients due to BMI  $\geq 35$  (n=135) or no recorded BMI (n=460). MRI was used for 50% of participants. Women were 85% less likely to receive a MRI compared to men in both the unadjusted (OR=0.85, 95% CI=0.11-0.20, p-value <0.001) and after adjusting for BMI, age, marital status, hypertension, and transient ischemic attacks (TIA) (OR=0.15; 95%CI: 0.11-0.20). No other variables assessed had significant independent association with the receipt of a MRI. **Conclusions:** We found evidence of gender disparities in the receipt of MRI during hospitalization for stroke in patients in the Puerto Rico. Women were less likely to receive MRI compared to men. Further research on potential reasons for such disparities, increasing awareness, and testing intervention as to decrease these potential disparities are needed.

**Keywords:** gender; Magnetic Resonance Imaging; stroke

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