

Secondary Prevention Among Uninsured Stroke Patients: A Free Clinic Study

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Secondary Prevention Among Uninsured Stroke Patients: A Free Clinic Study

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Introduction

- Stroke is the 5th leading cause of death in the United States, and an estimated 80% of strokes are preventable.
- Major modifiable risk factors for stroke include lack of exercise, poor diet, obesity, hypertension, hyperlipidemia, diabetes, alcohol use, and smoking.
- According to the American Heart Association and American Stroke Association, patients with a history of stroke should be prescribed aspirin and other medications according to their modifiable risk factors.
- There is limited research about stroke management in the uninsured and underserved populations in the United States.

Problem Statement

We sought to identify specific areas for future intervention so that access to post-stroke care and risk factor management can be improved for this vulnerable population of uninsured patients seen at free clinics.

- A retrospective chart review was conducted to manually collect chronic disease parameters from electronic medical records and paper charts at nine free clinics in the Tampa Bay area in Florida.
- Logistic regression was used to model stroke history as a function of each demographic or behavioral risk factor of interest after controlling for age (entered as a quadratic term); measures of association are thus presented as age-adjusted odds ratios (aOR). Missing risk factor values were excluded from the calculation of aOR and confidence intervals. Welch's t-test was used to test differences in mean age between study groups (patients w/ history of stroke vs uninsured patients without history of stroke).
- Stroke patients with pertinent comorbidities were assessed to determine the proportion receiving appropriate medications.

Characteristic	Total (N)	Non Stroke- (%)	Stroke N (%)	aOR (95% CI)
Mean (SD)	43.3	43.1 (15.4)	56.0 (11.2)	
<45y	3247	3233 (50.1%)	14 (13.1%)	Ref Group
45y-65y	2965	2888 (44.8%)	77 (72.0%)	6.16 (3.59-11.37)
>65y	346	330 (5.1%)	16 (15.0%)	11.20 (5.41-23.45)
Sex				
Female	3910	3865 (60.0%)	45 (42.1%)	Ref Group
Male	2642	2580 (40.0%)	62 (57.9%)	2.01 (1.36-2.97)
Race/Ethnicity				
White	1330	1291 (27%)	39 (42.9%)	Ref Group
Black	622	611 (12.8%)	11 (12.1%)	0.87 (0.44-1.73)
Asian	148	145 (3.0%)	3 (3.3%)	0.51 (0.15-1.69)
Other race	46	46 (1.0%)	0 (0.0%)	-
Hispanic, all races	2725	2687 (56.2%)	38 (41.8%)	0.46 (0.29-0.73)
Employment/Salary				
Employed	1939	1920 (54.5%)	19 (25%)	Ref Group
Unemployed	1658	1601 (45.5%)	57 (75%)	2.87 (1.69-4.87)

Table 1. Demographics of the study sample including age, sex, race, employment status.

*Age-adjusted odds ratios and 95% confidence intervals. Odds ratios associated with age categories are crude odds ratios.

Chronic Disease	N	Currently Prescribed Medication N (%)
Secondary Stroke (Aspirin)	107	47 (43.9%)
Secondary Stroke (Statin)	107	42 (39.3%)
Hypertension	79	64 (81.0%)
Diabetes Mellitus	43	31 (72.1%)

Table 2. Percentages of stroke patients receiving medications for their comorbid cardiovascular risk factors.

- Patients with a history of stroke are more likely to have a history of current or past alcohol use than non-stroke patients, but this value did not reach statistical significance.
- Stroke patients were more likely to be unemployed than non-stroke patients, despite the uninsured status of all patients ($p < .001$)
- Stroke patients were most likely to be of Caucasian race/ non-Hispanic ethnicity (42.9%).

- Our study reveals the following findings about stroke patients seeking care at free clinics in the Tampa Bay area:
- pharmacologic secondary stroke prevention with aspirin and statins is underutilized
- diabetes and hypertension medications are underutilized
- stroke patients are more likely to be current alcohol and tobacco users
- stroke patients are more likely to be male
- Non-Hispanic Caucasian individuals were more likely to have a stroke history than Hispanic individuals. Nationally, those of African American race and Hispanic ethnicity are more likely to experience a stroke.

- Uninsured patients with a diagnosis of stroke may not be adequately medicated with aspirin, statins, anti-hypertensives, and anti-diabetic medications.
- The cause is likely multifactorial.
- Future studies are needed to determine cause and potential interventions for these observed disparities.
- This study should bolster awareness of disparities related to the uninsured and cerebrovascular disease.
- This study reflects themes studied in the Health Systems portion of SELECT, particularly the iron triangle of healthcare (cost/quality/access). Quality of care and access to care are areas that should be improved for uninsured stroke patients.

REFERENCES

1. American Heart Association & American Stroke Association. (2018). *About Stroke- Treatment*. Retrieved from https://www.strokeassociation.org/STROKEORG/AboutStroke/Treatment/Stroke-Treatment_UCM_492017_SubHomePage.jsp

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