

# Stroke in Young Adults: Risk Factors in Relation to Gender and Race

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## Abstract

### Introduction

The rate of stroke in younger age group is increasing significantly, with greater economic impact by leaving patients disabled for the rest of their life. Primary stroke prevention guidelines recommend regular screening and treatment of risk factors for stroke. However, to-date, there are no specific recommendations for primary stroke prevention for the younger population. Although hypertension, hyperlipidemia, obesity and smoking are the known risk factors of stroke, the relationships between these risk factors and gender and race among young stroke patients are not clear.

## Objectives

- To compare the rates of Hypertension, Hyperlipidemia, obesity, and smoking between male and female young patients with stroke; and among different racial groups [African American (AA), Hispanic versus others]
- Young adults are defined as patients greater than 18 years and younger than 50 years of age.
- The long-term goal of this retrospective study is to identify the important risk factors in young adults with stroke in different races and gender to create educational and preventive measures in this patient population.

## Methods

- A retrospective chart review using descriptive-correlational design.
- A convenience sample of 180 patients were selected from two hospitals in multi hospital system in mid-Atlantic region between January 1<sup>st</sup>, 2013 to July 31<sup>st</sup>, 2016.

### Inclusion criteria:

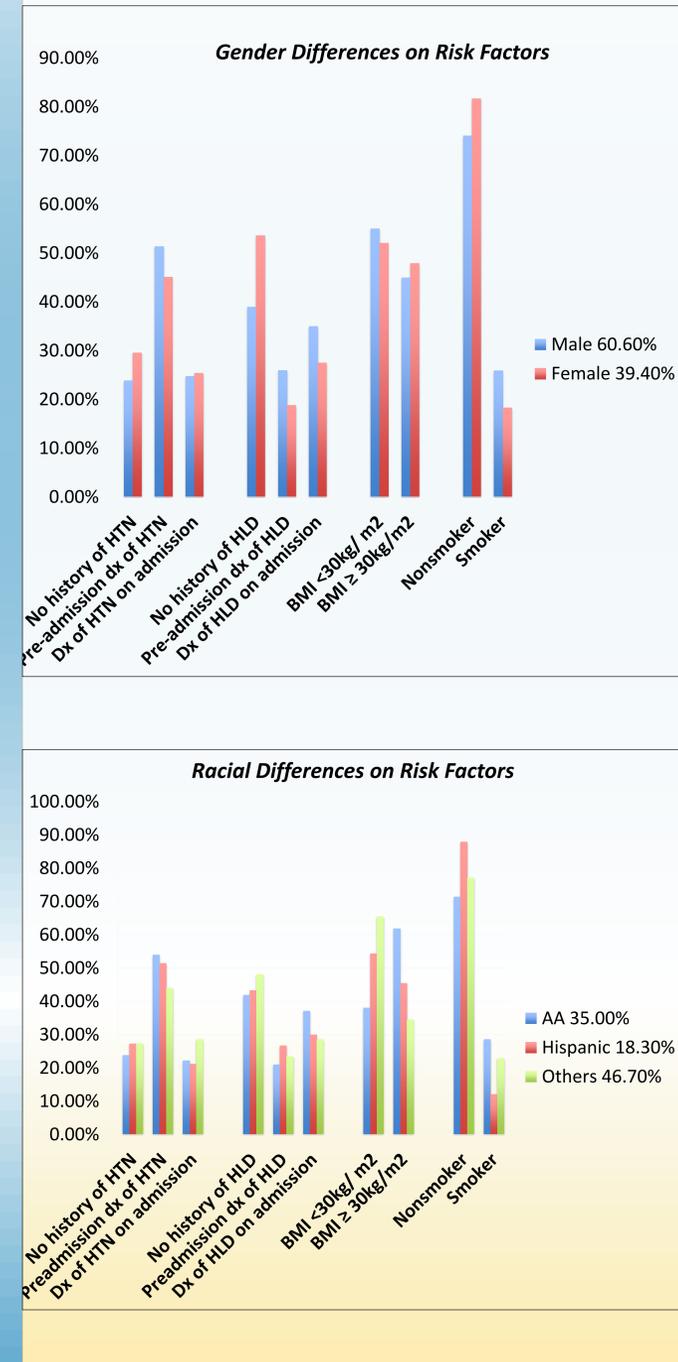
- Age 18 to 50 years
- Diagnosis of ischemic and hemorrhagic stroke
- Dependent variables: hypertension, hyperlipidemia, obesity, smoking; each dichotomous variable
- Independent variables: gender, race/ethnicity
- Demographic variables: Age (years), and Marital status (married/ not married)
- Clinical characteristics: type of stroke, results of CT and MRI of brain, angiogram/ CT perfusion, Patent Foramen Ovale (PFO), Atrial Fibrillation (Afib), hypercoagulopathy

### Analysis:

- SPSS 23 is used to analyze the data
- Descriptive Statistics
- Chi-square analysis
- Alpha is set at 0.05

*There are no relevant conflicts of interests to disclose*

## Results in A Glance



## Outcomes

- The majority of patients were male (60.6%)
- 63(35%) were African Americans, 33 (18.3%) were Hispanics, and 84 (46.7%) were other races.
- There were no gender differences on the risk factors
- 26.1% of patients had no history of hypertension
- 45.0% had no history of hyperlipidemia
- 53.9% were not obese
- 77.1% were not smokers.

## Conclusion

- There was a significant difference among race/ethnicity on obesity, with African American patients more likely to be obese (61.9%) when compared to Hispanics (45.5%) and other races (34.5%) ( $X^2=10.87, p<0.01$ ).
- No major differences on risk factors were identified between gender and among racial/ethnic groups. Further studies are needed to investigate risk factors for stroke among young adults.

## Bibliography

- Maaijwee, N.M., Rutten-Jacobs, L.C., Schaapsmeeders, P., Dijk, E.J., Leeuw, F.E. (2014). Ischemic stroke in young adults: risk factors and long-term consequences. *Neurology*, 10, 315-326
- Meschia, J.F., Bushnell, C., Boden-Albala, B., Braun, L.T., Bravata, D.M., Chaturvedi, S., Creager, M.A., Eckel, R.H., Elkind, M.S.V., Fornage, M., Goldstein, L.B., Greenberg, S.M., Horvath, S.E., Iadecola, C., Jauch, E.C., Moore, W.S., Wilson, J.A. (2014). Guidelines for the primary prevention of stroke a statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*, 45(12), 3754-3832.
- Trivedi, M.M., Ryan, K.A., & Cole, J.W. (2015). Ethnic differences in ischemic stroke subtypes in young-onset stroke: the stroke prevention in young adults study. *BMC Neurology*, 15, 221-228
- Yao, X., Lin, Y., Geng, J.L., Sun, Y.M., Chen, Y., Shi, G.W., Xu, Q., & Li, Y.S. (2012). Age and gender specific prevalence of risk factors in patients with first-ever ischemic stroke in china. *Stroke Research And Treatment*, 2012136398.

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