Subarachnoid Hemorrhage in the “Stroke Belt” of the United States: The MUSC experience

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INTRODUCTION
South Carolina is located in the “Stroke Belt” of the United States. A region including 11 Southeastern states: AL, AR, GA, IN, KY, LA, MS, NC, SC, TN, VA. Incidence of stroke and cardiovascular disease are significantly higher compared with the remaining states (SC ranks on number 5 in stroke). SAH has a prevalence of 6 cases per 100,000 in the United States. African American females have a significantly higher risk for SAH compared to whites. African Americans are the largest minority group in South Carolina, counting for 30% of the state’s population.

OBJECTIVES
-Identify prevalence of SAH among ethnic groups in South Carolina.
-Discuss need for neurocritical care network based on regional differences, as well as national and international patient population.
-Provide education for ethnic groups at risk and implement preventive medicine guidelines.

MATERIAL AND METHODS
Comparison with statewide, national and international data

RESULTS: MUSC
172 patients with SAH were admitted to the NSICU at MUSC between 2005 and 2008. South Carolina has a total population of 4.6 Mio, with 3.06 Mio Caucasians and 1.46 Mio African Americans.

RESULTS: SOUTH CAROLINA
We admitted an average of 43 patients per year, SAH Hunt & Hess and Fisher grade 3/3, age 53.25 years, 71% female vs 29% male, 37.31% of total patients were African American, 61% Caucasian/White, 67% of the African Americans were female. We see a trend towards younger age on admission: from 55 to 51 years. We see an increase of high grade Hunt Hess/ Fisher 4/4 SAH admissions for the years 2007 and 2008 compared to 2005 and 2006.

RESULTS: NATIONWIDE

1) African Americans have twice the mortality to die from stroke compared with Caucasians
2) African Americans have more severe and disabling strokes compared with Caucasians
3) African American women have a lower 1-year survival following ischemic stroke compared with Caucasians
4) Among those aged 20-44 years of age, African Americans are 2.4 times more likely to have a stroke compared with Caucasians
5) 50% of African American women will die from stroke or cardiac diseases

CONCLUSIONS
SC has an above national average percentage of African American population. We admitted significantly more African American women, at younger age with high grade SAH to our NSICU compared to national and international data. We see also an increase of high grade SAH in the years 2007 and 2008 compared to 2005 and 2006. Patients with SAH have various ethnic, socioeconomic, cultural, age and gender specific differences that play a significant role in patients’ outcome. Neurocritical care networks spanning over different states and countries are necessary for research and development of guidelines and therapies for all patients, however regional hot spots for SAH need greater support. Patient education should focus on specific risk profiles such as gender and ethnic groups to guide preventive treatments. Individualized treatment guidelines are needed to lower the risk of unfavorable outcomes.

REFERENCES
-National Stroke Association 2013
-South Carolina Department of Health Behavioral Risk Factor Surveillance Report 2005 and 2010