RACE AS A SOCIAL DETERMINANT OF POOR OUTCOMES FOLLOWING UNRUPTURED ANEURYSM SURGERY

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Introduction Racial disparities have been documented across medical fields including stroke. However, the extent and consequence of disparities in the care of cerebral aneurysms is incompletely defined. Our objective was to determine whether racial disparities exist in the outcomes following unruptured aneurysm repair.

Methods Data from the 2012-2015 National Inpatient Sample (NIS) database was analyzed. Patients who underwent either open or endovascular treatment of unruptured intracranial aneurysms were included (n = 11663). Patients missing race data, those of super-minority (n<100) race (n = 1202), and those admitted with concurrent head trauma (n = 110) or AVM (n = 71) were excluded. The exposure of interest was race. The primary outcome was occurrence of a poor outcome, defined as occurrences of one or more of: in-hospital mortality, discharge to a nursing facility or hospice, placement of a tracheostomy tube, or placement of a gastrostomy tube. Secondary outcomes were hospital length of stay and any complication experienced (i.e. surgical, infectious, medical). Multivariate logistic and linear regression was performed for each outcome correcting for potentially confounding variables such as age, sex, procedural type, elective procedure, obesity, diabetes, tobacco, severity of illness, and hospital type. Given the number of comparisons, statistical significance was a priori defined as p<0.01.

Results 7478 White, 1460 Black, 1086 Hispanic, and 279 Asian patients were included in the final analysis. Black patients experienced the greatest rate of complications (24%) and poor outcomes (13%). After adjusting for confounding variables, Black patients demonstrated greater odds of poor outcomes (OR: 1.32; 95% CI: 1.07, 1.62; p = 0.008) compared to White patients. Black (B: 0.04; 95% CI: 0.03, 0.06; p <0.001) and Hispanic (B: 0.04; 95% CI: 0.02, 0.05; p...
patients experienced slightly longer length of stay compared to White patients. The odds of experiencing any complication were similar across races.

**Conclusion** In this nationwide analysis, racial disparities were present in that Black patients were at increased odds of poor outcomes and both Black and Hispanic patients experience longer lengths of stay when compared to White patients after adjusting for several possible confounding factors. In the shared effort to provide equitable care, an important first step is analyzing and acknowledging the differences in objective outcomes as racial disparities in neurosurgery. Understanding the specific factors underlying the differences, such as possible differences in care access, is the next step to improve health equity in cerebrovascular neurosurgery.


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**Abstract P-060**

**APPLICATION OF NON-DESTRUCTIVE MECHANICAL CHARACTERIZATION TESTING FOR CREATING IN VITRO VESSEL MODELS WITH MATERIAL PROPERTIES SIMILAR TO HUMAN NEUROVASCULATURE**

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**Introduction/Purpose** Vessel models are a first step in developing endovascular medical devices. These models are often made from glass or silicone, which do not accurately represent the mechanical properties of human vasculature, limiting their use to basic training and proof-of-concept testing. This study outlines methods to quantitatively compare the mechanical properties of both human vascular tissue and synthetic biomaterials to create representative vessel models.

**Abstract P-060 Figure 1** Left – non-destructive mechanical testing of human tissue. No disruption of tunica or endothelial layer. Middle – destructive mechanical testing, apparent tunica and endothelial disruptions. Right – coefficient of friction lubricity of the human donor, compared to VC-A30 (dark gray) and silicone (black)