

First-of-its-kind study associates obesity with poorer stroke outcomes in non-white patients

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Research led by LSU Health New Orleans faculty has found that obesity contributed to poorer outcomes in non-white patients who had hemorrhagic strokes. It is one of the few studies examining outcomes of patients with obesity following intracerebral haemorrhage (ICH) and is the first such study conducted within the stroke belt of the US with a racially diverse population. The findings were published this month in *Obesity Science & Practice* Early View.

"We reported on the racial differences in outcome of [patients](#) with obesity following hemorrhagic stroke (intracerebral hemorrhage)," says lead author Dr. Ifeanyi O. Iwuchukwu, LSU Health New Orleans Assistant Professor of Neuroscience. "We defined good outcome based on the likelihood of discharge home or a rehabilitation center."

The retrospective study examined data on 428 patients from the Get with the Guideline-Stroke database. Data included demographics; medical history; clinical, laboratory, and imaging characteristics; BMI and obesity classification; as well as discharge disposition. Fifty percent of the patients were female, 49.1% were non-white (43.7% African-American, 0.9% Asian, 1.9% non-white Hispanic and 2.6% others), and the white population consisted of non-Hispanic whites.

The initial results show that several of the variables were different between the BMI categories - gender, histories of congestive heart failure and diabetes, as well as blood pressure measurements and HbA1c. Good outcome discharge disposition differed significantly

across BMI categories. Overall comparison of the white and non-white populations showed age, admission systolic blood pressure, anticoagulant use and ICH location were significantly different between the groups. The difference on outcomes where comparisons were performed within each race group was unexpected.

"In the study group, non-white patients with obesity fared worse than non-white patients without obesity," notes Dr. Iwuchukwu. "A similar finding was not observed in white patients with obesity."

Obesity is an established risk factor for cardiovascular disease including acute cerebrovascular disease - acute ischemic and hemorrhagic strokes. Conversely, several previous reports indicated obesity is associated with better outcomes following several acute conditions - heart failure, carotid endarterectomy, sepsis, bypass surgery and vascular surgery. This phenomenon is known as the "obesity paradox."

"Our findings are important as a previous study on outcomes of 'patients with obesity' following [hemorrhagic stroke](#) (intracerebral hemorrhage) suggested that obesity was associated with improved outcomes," Iwuchukwu added. "Importantly, our study differs as our study population included a large African-American population compared to the prior study, which was primarily an Asian population in South Korea. Our study is significant because epidemiologically, ICH is a common type of stroke amongst 30-50 year old African-Americans, and obesity was an independent predictor of outcomes in our study cohort."

Stroke is the fifth leading cause of death in the United States and is a leading cause of chronic disability. According to the Centers for Disease Control and Prevention (CDC), African-Americans are at greater risk of having a stroke. Compared to whites, they are twice as likely to have a stroke, have strokes at younger ages, and are more likely to have more severe strokes or die from them.

"This is the first study to report poor health outcomes following stroke in predominantly African-American versus Caucasian patients with obesity," concludes senior author Dr. Melinda Sothern, Professor and Jim Finks Endowed Chair in Health Promotion at LSU Health New Orleans School of Public Health. "Patients without obesity were less likely to need rehabilitation and more likely to return home following a stroke event. Findings highlight the need to address the nutritional needs of minority populations at high risk for cardiovascular disease in order to reduce the burden of [obesity](#) on recovery following [stroke](#)."

More information: I. Iwuchukwu et al, Racial differences in intracerebral haemorrhage outcomes in patients with obesity, *Obesity Science & Practice* (2018). [DOI: 10.1002/osp4.167](https://doi.org/10.1002/osp4.167)

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