Objective: To investigate the influence of lipid ratios on the 30-day functional outcome in patients who have suffered acute ischemic stroke in Lagos.

Methods: A hospital-based case-control study in which admitted patients with first-ever acute ischemic stroke were categorized based on NIHSS scores, had their fasting lipid profile assayed (i.e. TC, LDL-C, HDL-C and TG), lipid ratios determined (i.e. TC/HDL-C; LDL-C/HDL-C; TG/HDL-C) and their functional outcome after 30 days assessed using the Modified Rankin Scale. The relationship between the lipid ratios and the outcome was determined.

Results: A total 101 stroke cases and 102 age and gender matched controls were recruited. Absolute serum TC, LDL-C and TG were significantly higher in stroke cases than in controls (p<0.05). The ratios of TC/HDL-C, LDL-C/HDL-C, and TG/HDL-C in stroke cases and controls i.e. 4.9±1.6 vs. 4.2±1.3; 3.4±1.5 vs. 2.8±1.2; and 2.9±1.8 vs. 2.2±1.4 did not differ significantly (p >0.05 in all instances). Normal serum TG was significantly associated with an unfavourable functional outcome after 30 days (p<0.05) while elevated serum LDL-C was significantly associated with more severe ischemic stroke (p<0.05). In the multivariate regression analysis, admission NIHSS scores and GCS scores were the only two independent predictors of short-term functional outcome and case fatality (P<0.0001 respectively).

Conclusion: The study did not demonstrate any significant relationship between admission serum lipid ratios (TC/HDL-C, LDL-C/HDL-C, and TG/HDL-C) and short-term functional outcome or case fatality at 30 days following acute ischemic stroke. Admission GCS and NIHSS scores are independent predictors of acute ischemic stroke outcome. Elevated serum LDL-C may be
associated with more severe ischemic stroke while normal serum TG may not be protective against unfavourable outcome following acute ischemic stroke.