OBJECTIVES:
To determine the prevalence and risk factors for, and the association with in-hospital mortality of, AMI after AIS, and to study the effect of intravenous recombinant tissue plasminogen activator (rt-PA) in this setting. We hypothesized that AMI would be associated with lower survival rate at hospital discharge but that intravenous rt-PA would be associated with lower risk of AMI.

METHODS:
Cross-sectional study of data derived from the National Inpatient Sample (NIS) between 2002-2008. We searched for admissions of patients older than 18 years, with a primary diagnosis of AIS, and for those with AMI and those given rt-PA. Definitions were based on the ICD-9CM codes. Prevalence proportions were calculated over study period. Multivariate logistic models were fitted to assess for the impact of AMI on in-hospital mortality, and for rt-PA on AMI. For days to primary outcome (in-hospital mortality) analysis, Kaplan-Meier survival estimates and log-rank tests were used to compare the AMI and no-AMI groups within AIS.

RESULTS:
During study period, NIS recorded 613,174 AIS admissions, of which 10,901 were diagnosed with AMI for a prevalence of 1.7%. In multivariate analysis risk factors for AMI were older age (a OR 1.01, 95% CI, 1.01-1.02, P=<0.0001), women (aOR 1.1, 95% CI, 1.01-1.12, P=<0.0001), rt-PA administration (aOR 1.3, 95% CI,1.2-1.5, P=<0.0001), and black race (aOR 0.9, 95% CI,0.89-0.97, P=<0.0001). The total cumulative mortality of the cohort was 1.8%. In-hospital mortality was significantly associated with AMI (aOR 3.7, 95% CI,3.5-3.9, P=<0.0001), older age (aOR 1.03, 95% CI,1.03-1.03, P=<0.0001), women (aOR 1.04, 95% CI,1.02-1.1, P=<0.0001), and rt-PA administration (aOR 2.0, 95% CI,1.8-2.2, P=<0.0001), and black race vs. white (aOR 0.8, 95% CI,0.8-0.91, P=<0.0001).

On Kaplan-Meier analysis, the survival fractions for the AMI and no-AMI groups diverged significantly over time in AIS patients (log-rank p<0.0001).