Background: Intracardiac mural thrombi are a rare complication of ST-elevation myocardial infarction (STEMI). There are limited data on contemporary trends in incidence and outcomes of mural thrombus in STEMI patients.

Methods: We analyzed the 2003-2011 Nationwide Inpatient Sample databases to identify all patients aged ≥ 18 years admitted with a primary diagnosis of STEMI. Patients with postinfarction intracardiac mural thrombus were then identified using ICD-9 code 429.79. Temporal trends in incidence of mural thrombus, incidence of acute ischemic stroke in STEMI patients with mural thrombus and in-hospital mortality were examined.

Results: From 2003-2011, of 2,213,830 patients hospitalized with STEMI, 4,001 (0.18%) patients had a mural thrombus documented. The incidence of mural thrombus in STEMI patients increased from 0.14% in 2003 to 0.19% in 2011 (P_{trend}<0.001). Patients with anterior STEMI were more likely to have a mural thrombus than patients with non-anterior STEMI (0.40% versus 0.08%, P<0.001). The incidence of mural thrombus in patients with anterior STEMI increased from 0.31% to 0.44% (P_{trend}<0.001), whereas there was no change in incidence of mural thrombus in patients with non-anterior STEMI (P_{trend}=0.953). Patients with cardiogenic shock complicating STEMI were more likely to have a mural thrombus (0.39% versus 0.16%, P<0.001). In STEMI patients with mural thrombus, the incidence of acute ischemic stroke increased from 5.3% to 8.1% (P_{trend}<0.001; adjusted OR 1.197, 95% CI 1.109-1.291) and in-hospital mortality increased from 13.7% to 14.6% (P_{trend}=0.041, adjusted OR 1.056, 95% CI 1.002-1.113).

Conclusion: Over the last several years, there has been an increase in the incidence with which intracardiac mural thrombus were reported in STEMI patients. Mural thrombi were more commonly seen in patients with anterior STEMI and in patients with cardiogenic shock complicating STEMI. In STEMI patients with mural thrombus, there has been an increase in incidence of acute ischemic stroke and risk-adjusted in-hospital mortality.