OBJECTIVES: The aim of the study was to assess the relationship between baseline and post-procedural Thrombolysis In Myocardial Infarction (TIMI) epicardial blood flow grade and mortality in patients with acute coronary syndromes (ACS) who were treated with early percutaneous coronary intervention (PCI).

BACKGROUND: The impact of baseline and post-procedural TIMI flow grade on mortality in patients with ACS has been insufficiently studied.

METHODS: This prospective registry included 10,455 patients with ACS who underwent coronary angiography and PCI: 2,853 patients with ST-segment elevation acute myocardial infarction, 3,060 patients with non-ST-segment elevation acute myocardial infarction, and 4,542 patients with unstable angina. The primary outcome was 1-year mortality.

RESULTS: At 1 year, there were 976 deaths: 117 deaths among patients with TIMI flow grade 0 to 1, 105 deaths among patients with TIMI flow grade 2, and 754 deaths among patients with TIMI flow grade 3 (Kaplan-Meier estimates of mortality 28.3%, 18.4%, and 8.0%, respectively; odds ratio: 1.66, 95% confidence interval [CI]: 1.57 to 1.76, p< 0.001, for TIMI flow grade 0 to 1 vs. TIMI flow grade 2 and odds ratio: 2.51, 95% CI: 2.06 to 3.06, p< 0.001, for TIMI flow grade 2 vs. TIMI flow grade 3). By using the Cox proportional hazards survival model,
we identified post-PCI TIMI flow grade (hazard ratio: 0.60, 95% CI: 0.52 to 0.70; p< 0.001, for 1 grade increase in TIMI flow grade) but not baseline TIMI grade (hazard ratio: 1.08, 95% CI: 0.96 to 1.22; p = 0.20, for 1 grade increase in TIMI flow grade) as an independent correlate of 1-year mortality.

CONCLUSIONS: In patients with ACS treated with early PCI, post-procedural TIMI flow grade but not baseline TIMI flow grade is an independent correlate of 1-year mortality.