**Background:** Rapid supply of coronary blood flow in the occluded coronary artery is the principle aim of early ST-elevation myocardial infarction (STEMI) therapy. Although coronary blood flow has been supplied, insufficient myocardial reperfusion mainly at the level of micro vascular circulation has been assessed a large number of patients. Electrocardiographically by measuring ST-segment resolution (STR) after procedure is an easy and good indicator for the evaluation of reperfusion failure. The CHA2DS2-VASc risk score is used to predict the risk of thromboembolism in non-valvular AF patients. Its usefulness in predicting AF in the development of STR failure in patients presenting with STEMI is unknown. We evaluated the predictive value of the CHA2DS2-VASc score in patients with STR failure following STEMI.

**Methods:** Models including clinical and laboratory parameters were constructed to test the predictive value of CHA2DS2-VASc and CHA2DS2-VASc-HS scores. Patients were divided into two groups: those with STR> 70 % and those without STR> 70. Predictors of STR failure were determined by multivariate regression analysis.

**Results:** Multiple regression analysis showed that CHA2DS2-VASc-HS score, Anterior STEMI, peak CK-MB level and symptom to percutaneous coronary intervention time were associated with development of STR failure in patients presenting with STEMI. ROC curve analyses showed that CHA2DS2-VASc and CHA2DS2-VASc-HS scores were significant predictors for STR failure.

**Conclusion:** CHA2DS2-VASc and CHA2DS2-VASc-HS scores predict STR failure in patients presenting STEMI.