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Thrombus Burden Predicts LVEF But Not Infarct Size after Primary PCI In Patients With ST-Segment Elevation Myocardial Infarction

[Purpose] The aim of this study was to evaluate if thrombus burden accessed by optical coherence tomography predicts the outcomes of primary percutaneous coronary intervention in patients with ST-segment elevation myocardial infarction (STEMI).

[Methods] A total of 31 STEMI patients with LAD as culprit lesion and received stenting within 12 h from symptom onset were included. Optical coherence tomography was performed before stenting to measure thrombus burden. Thrombus burden was calculated as thrombus volume divided by lumen volume over a 30 mm measurement length of the culprit lesion. Primary end point was left ventricular ejection fraction (LVEF) and late gadolinium enhancement (LGE) by cardiac magnetic resonance at 30 days.

[Results] Thrombus burden was negatively correlated with LVEF at 30 days (r=-0.36, p<0.05) and so was the maximum thrombus-to-lumen area ratio (r=-0.38, p<0.05) but neither was related to LGE at 30 days (both p>0.05).

[Conclusion] STEMI patients with greater thrombus burden had worse cardiac dysfunction but not greater myocardial damage compared with those with smaller thrombus burden.