Prognostic impact of SYNTAX II score in patients with cardiogenic shock complicating ST-elevation myocardial infarction: analysis of an 10-year all-comers registry

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Funding Acknowledgement: Type of funding source: None

Background: The SYNTAX II score (SS-II) can predict 4-year outcomes in patients with complex coronary artery disease and ST-segment elevation myocardial infarction (STEMI). Nonetheless, the prognostic value of SS-II for a cardiogenic shock (CS) in the setting of STEMI has not been assessed.

Purpose: This study aimed to investigate the predictive impact of SS-II in patients with CS complicating STEMI undergoing primary percutaneous coronary intervention, and whether SS-II adds prognostic information to predict major adverse cardiac events (MACE) and all-cause death in this population.

Methods: This prospective cohort study included 1965 consecutive patients with STEMI who underwent primary-PCI between January 2008 and December 2017. The cohort of patients with CS (n=153) was identified and divided into three groups based on SS-II tertiles [SS-II low tertile <38 (n=51), ≥38 SS-II intermediate tertile <47 (n=51), and SS-II high tertile ≥48 (n=51)].

Results: Amongst the cohort of patients with CS mean age was 68.4±14.0 years, 69.2% were male and 51.6% presented with anterior STEMI (mean SSII was 45.1±14). In-hospital mortality was significantly higher in the high SS-II tertile (85.7% vs. 38.9% vs 24.4%, p≤0.001) compared with SS-II intermediate and low tertiles. During follow-up (median 2.5 years), SS-II was positively correlated with MACE (89.3% (high SS-II) vs. 52.8% (int SS-II) vs. 42.2% (low SS-II), p≤0.001), and with all-cause mortality (89.3% vs 44.4% vs 26.7%, p≤0.001).

The SS-II was also an independent predictor of MACE (HR=1.042, 95% CI: 1.020–1.063, p=0.000) and all-cause mortality during follow-up (HR=1.056, 95% CI: 1.033–1.079, p=0.000)

Conclusion: In a real-world cohort of patients with STEMI related CS, the SS-II added important prognostic information, being an independent predictor of MACE and all-cause mortality during follow-up.
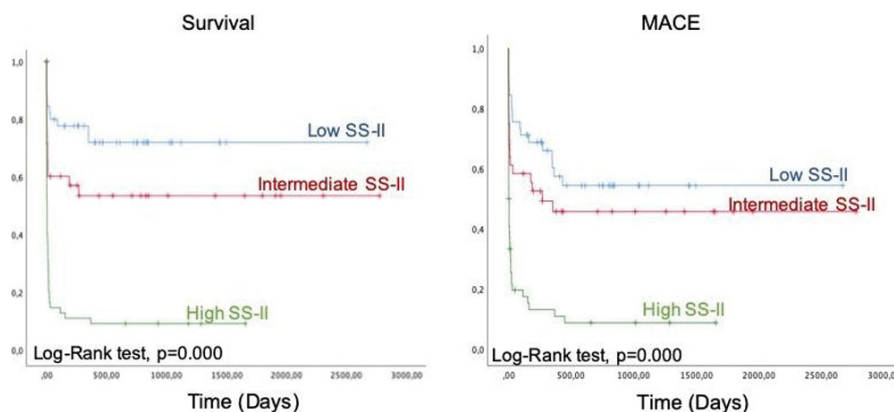
Image 1