

Baseline shock index-creatinine clearance score and long-term mortality after ACS.

Results from 24 years of follow-up of the ABC study on heart disease.

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Background:

Shock Index-Creatinine Clearance score (SI-C) is an updated version of the shock index that includes renal function. Recent studies reported its potential as a novel and simple risk stratification tool for predicting in-hospital mortality in acute coronary syndrome (ACS) patients.

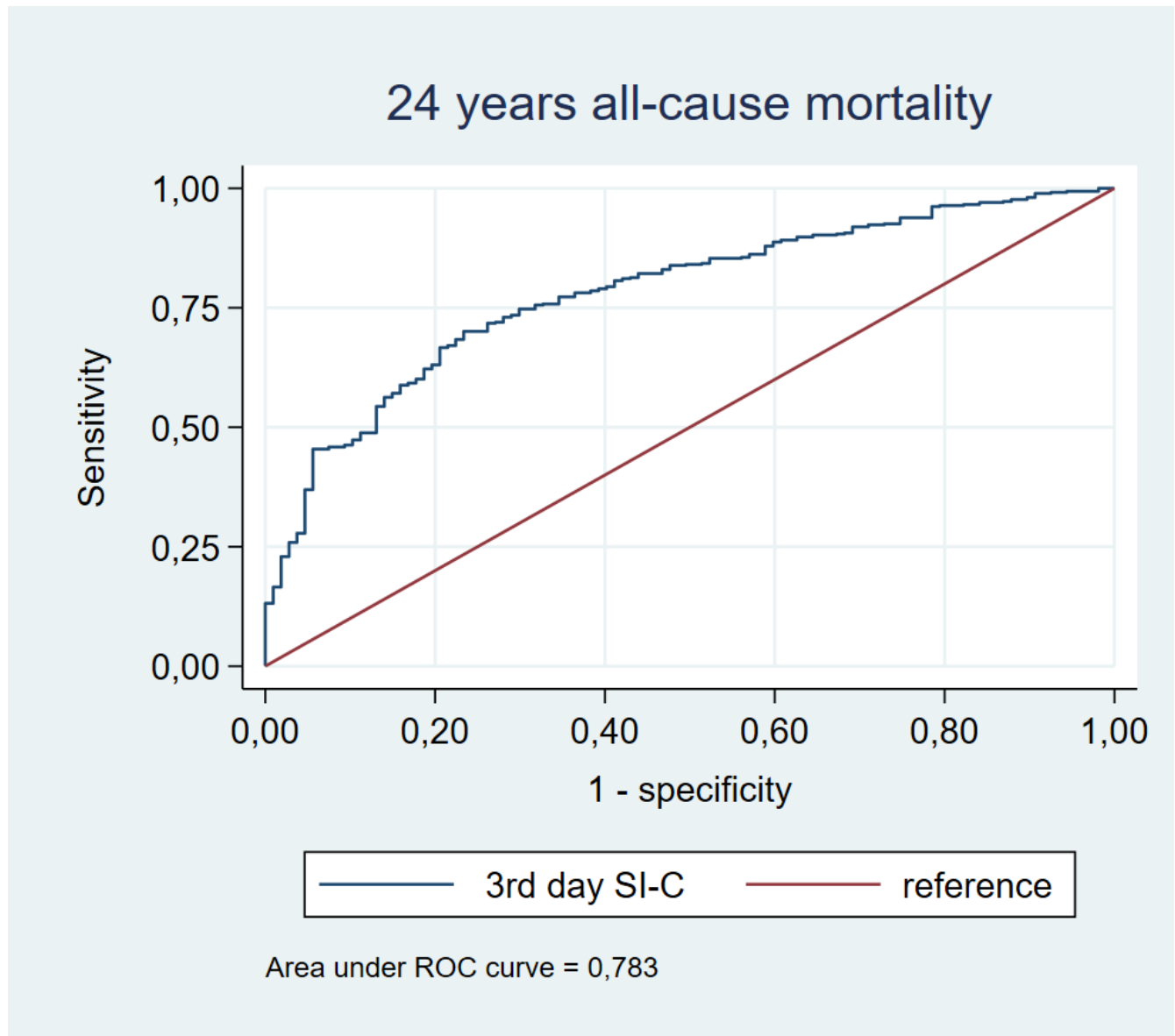
Purpose: To assess the long-term predictive value of baseline SI-C score in patients after ACS.

Methods: This preliminary prospective analysis included 589 patients with ACS admitted to three Italian hospitals and discharged alive. Baseline clinical and laboratory data were collected within the first 7 hospitalization days and baseline SI-C score was calculated as $[(SI \times 100) - \text{estimated creatinine clearance}]$. Patients were prospectively followed for 24 years or until death.

Results: Virtually all patients completed the follow-up, representing 7066 person-years. Patients' mean age was 66 ± 12 years, 70% were males, and 482 (82%) had died during follow-up. Compared to those who survived, deceased patients were significantly different in many of the baseline clinical characteristics. They also showed a significantly higher SI-C values (-11 ± 25 vs. -36 ± 23 , $p < 0.0001$). The predictive value of SI-C for 24-year mortality was very good (area under the curve = 0.783, 95% CI: 0.738-0.827, $p < 0.001$). The cumulative risk was significantly higher in the upper SI-C tertile (log-rank = 162.1, $p < 0.001$). Unadjusted Cox regression survival analysis showed that the SI-C score was significantly associated with long-term all-cause mortality (HR: 2.1, 95%CI 1.8-2.3, $p < 0.0001$). Similar results were obtained with the fully adjusted model.

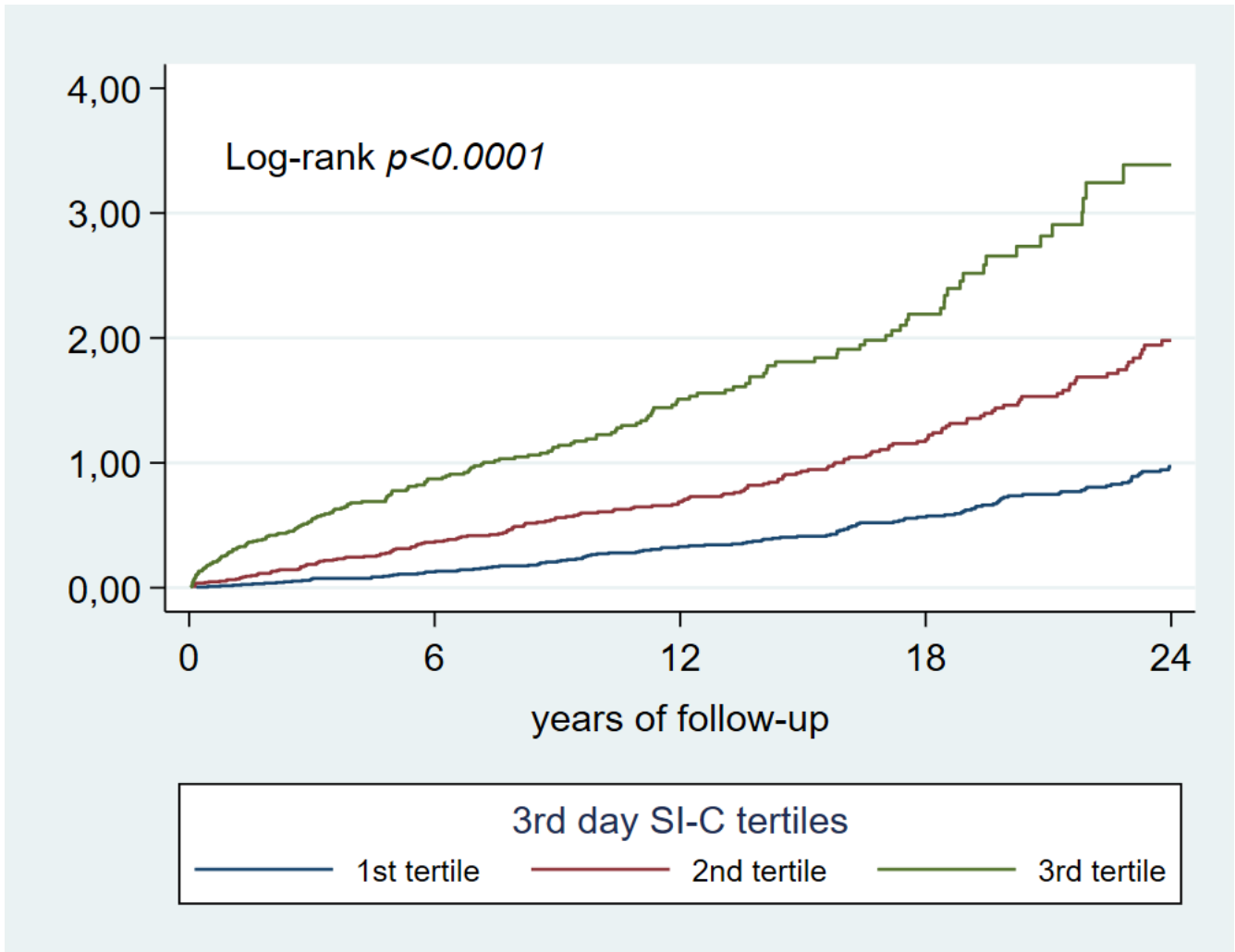
Conclusion: Baseline SI-C seems to be an effective and independent predictor of long-term all-cause mortality after ACS.

Figure 1: ROC curve of Shock Index-Creatinine Clearance score for predicting long-term mortality.



SI-C: Shock Index-Creatinine Clearance score

Figure 2: Nelson-Aalen cumulative hazard estimates for all-cause mortality during 24 years of follow-up.



SI-C: Shock Index-Creatinine Clearance score