

STS risk score versus Euroscore II - What is the best way to predict events in patients with acute coronary syndrome undergoing myocardial revascularization surgery?

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Introduction: The use of risk scores to predict complications and postoperative death in patients with coronary artery disease is widely employed. However, the comparison of two scores in patients with acute coronary syndrome in the Brazilian population has not yet been described.

Objective: This study aimed at evaluating the STS (Society of Thoracic Surgeons) and Euroscore II in patients with acute coronary syndrome who underwent myocardial revascularization surgery. With this analysis, the objective is to appoint the best way to predict events in these patients.

Methodology: This is a retrospective, unicentric and observational study that included 140 patients between the period of May 2013 and 2015. The comparison between groups was performed by T-test. The complementary analysis was done by ROC curve to identify the sensitivity and specificity of the best cut-off point of each score as a probability of death or combined event (death, reinfarction, stroke, cardiogenic shock and bleeding) in the postoperative period.

Results: About 71% of the patients were males and the mean age of the sample was 63.5 years. 43.5% presented triarterial pattern and 40.7% were diabetic. There was a significant difference between the mean STS score (0.82% + 0.84% vs. 2.45% + 2.14%, $p < 0.0001$) and the Euroscore II (2.21% 1.84% vs. 4.59% + 3.99%, $p = 0.005$) among patients who survived or died on admission, respectively. The area under the ROC curve correlating mortality with STS score values was 0.790, 95% CI (0.658 - 0.922) and with Euroscore II was 0.701, 95% CI (0.567 - 0.836). The area under the ROC curve correlating events combined with STS score values was 0.753, 95% CI (0.633 - 0.872) and with Euroscore II was 0.642, 95% CI (0.524-0.761). The best cutoff points for discriminating mortality were 0.985% on STS score (sensitivity 78.9%, specificity 77%) and 1.745% on Euroscore II (sensitivity 68.4% and specificity 60%). Regarding combined events, the best cutoff points were 1.09% on STS score (sensitivity of 60%, specificity of 86%) and 3.175% on Euroscore II (sensitivity of 43.3% and specificity of 81%).

Conclusion: In the evaluated population, the two scores were able to predict mortality and combined events even in the presence of acute coronary syndrome. Comparatively, the STS score appears to be discreetly superior to Euroscore II.

Keywords: Acute coronary syndrome; Myocardial revascularization surgery.