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Abstracttitel: The Surgical Procedure Assessment (SPA) Score Predicts ICU Length of Stay after Cardiac Surgery

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**Purpose:**

The Surgical Procedure Assessment (SPA) score is a simple and intuitive preoperative score that we developed to triage postoperative patients to “fast track” and “extended track” protocols. The SPA Score is assigned based on operative complexity: (1) less complex surgery (e.g. CABG, single valve), (2) more complex surgery (e.g. redo, double valve), (3) most complex surgery (e.g. ventricular assist device, lung transplant) without (A) or with (B) substantial co-morbidity (organ system failure, arrhythmias, insulin dependent diabetes etc.). However because SPA 3 patients by definition have severe comorbidity we did not assign A or B, leaving 5 categories of SPA score: 1A, 1B, 2A, 2B or 3. A preliminary study found an exponential relationship between SPA score and median ICU length of stay (LOS). We hypothesized that the SPA score could preoperatively discriminate between “fast track” patients (ICU LOS < 48 hr) and “extended track” patients (ICU LOS > 7 days). As a secondary outcome we compared the SPA score to a series of other scoring systems.

**Methods**

After Institutional Review Board approval 1201 cardiac surgical patients were preoperatively assigned a SPA Score, as well as a Parsonnet, Tuman, Tu and CARE Scores. We compared the concordance of a SPA 1A Score with the other scores in the prediction of ICU LOS < 48 hr stay, and SPA 2B or 3 to predict ICU LOS > 7 days.

**Results:**

A SPA score of 1A predicted ICU LOS stay < 48 hr more precisely than a CARE Score of 1, a Parsonnet score of < 5, a Tu Score of < 2 or a Tuman-score of < 2. An ICU LOS < 48 hr occurred in 304 of 393 (77.4%) patients with SPA 1A, with a sensitivity of 78% and specificity of 51%. A SPA score of 2B or 3 predicted ICU LOS of > 7 days better than a CARE Score of 4, 5 or 5E, a Parsonnet Score > 15, a Tu Score > 6 or a Tuman Score > 6, with a sensitivity of 80.3% and a specificity of 57.5% .

**Conclusions:**

The SPA Score predicts ICU LOS better than other comparable scores. It is simple, easily understood by all caregivers, and can discriminate “fast track” from “extended track” patients. It is a useful tool to facilitate ICU triage.