Abstract 4

A Nomogram for Prediction of Survival for Patients Undergoing Elective Major Noncardiac Surgery

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Background: An accurate predictive model for perioperative outcomes of patients who have been clinically optimized prior to elective noncardiac surgery has not been well studied. We sought to develop a nomogram that can help physician and patient to accurately estimate the likelihood of postoperative survival.

Methods: We studied consecutive patients who were systematically evaluated and treated by hospitalists in a preoperative clinic between 2003 and 2006. Thirty-four routinely available preoperative clinical baseline variables were analyzed to design the predictive model.

Results: There were 11,255 eligible patients for analysis (mean age 69 ± 12 years) who were followed for a median of 1.9 years postoperatively. The nomogram **(Figure, next page)** was formulated based on a Cox proportional hazards regression model. The model had a bootstrap-corrected concordance index of 0.739 and good calibration.

Conclusions: A nomogram was constructed, based on preoperative variables, that can predict 30-day, 1-year, and 3-year survival probability in patients undergoing elective major noncardiac surgery. This nomogram should be helpful for patient counseling and trial design.

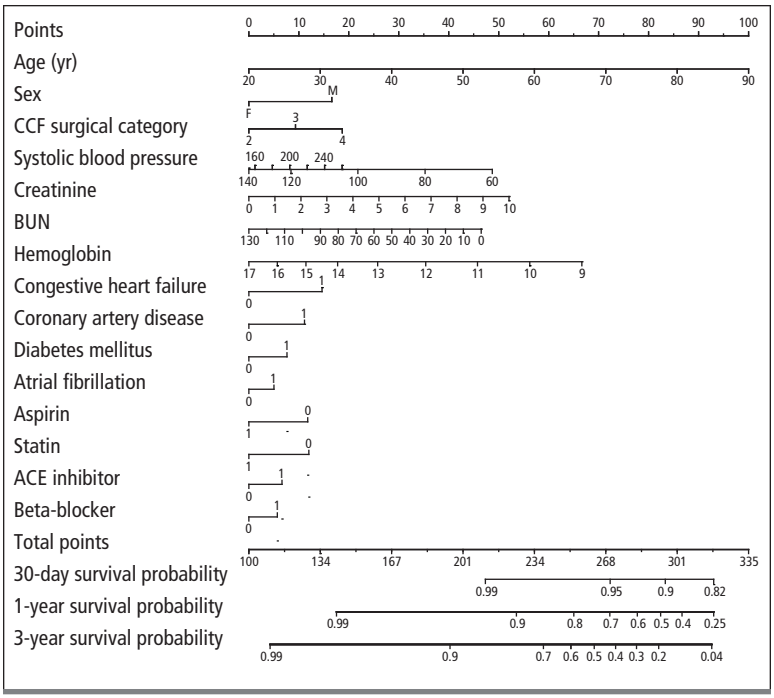

FIGURE. *Instructions for Physician:* Locate the patient's age on the **Age** axis. Draw a line straight upwards to the **Points** axis to determine how many points towards death the patient receives for his or her sex. Repeat this process for the other axes, each time drawing straight upward to the **Points** axis. For medical comorbidities and medications, 1 represents current use of medication or presence of the medical condition and 0 represents no current use of the medication or absence of the medical condition. Cleveland Clinic Foundation (CCF) surgical category: 2 = mild risk, 3 = moderate, and 4 = high risk procedure. Sum the points achieved for each predictor and locate this sum on the **Total points** axis. Draw a line straight down to the **30-day**, **1-year**, **and 3-year survival probability** axes to find the patient's probability of surviving for 30 days, 1 year, or 3 years.