PROM Score Accurate for Long-Term Survival

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FROM THE ANNUAL MEETING OF THE SOCIETY OF THORACIC SURGEONS

SAN DIEGO – The Society of Thoracic Surgeons Predicted Risk of Mortality score is a well-validated predictor of mortality during the first 30 days after cardiac surgery.

The PROM score's role in predicting longer-term survival, however, has not been investigated, according to Dr. John D. Puskas.

To fill this void, Dr. Puskas and his colleagues from Emory University, Atlanta, undertook a study to statistically validate PROM at 1, 3, 5, and 10 years after cardiac surgery. He presented the study's results at the meeting.

The investigators found that the STS PROM algorithm accurately predicted mortality both at 30 days and during 12 years of follow-up with almost equally strong discriminatory power.

"This may have profound implications for informed consent as well as for longitudinal comparative effectiveness studies," Dr. Puskas said in an interview.

"The STS Predicted Risk of Mortality models are probably underutilized and underappreciated in their power to predict short- and long-term outcomes for our patients. The STS provides this service free of charge, and it is available online 24/7. I am hopeful that this newfound ability to predict longer-term survival after cardiac surgery will find utility in comparative effectiveness research and ultimately in shaping health policy," he added.

Dr. Puskas and his colleagues evaluated the survival rates for 24,222 patients who underwent cardiac surgery at a sin-

gle academic center during 1996-2009. Long-term all-cause mortality was determined by referencing the national Social Security Death Master File. Logistic and Cox survival regression analyses were used to evaluate the long-term predictive utility of PROM. The AUROC (area under the receiver operator characteristic) curve measured the discrimination of PROM at 1, 3, 5, and 10 years. Kaplan-Meier curves were stratified by quartiles of PROM risk to compare long-term survival. All analyses were performed for both the whole sample and 30-day survivors.

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DR. PUSKAS

The investigators found an overall 30-day mortality rate of 2.78%.

Among all patients and 30-day survivors, AUROC values for PROM at 1, 3, 5, and 10 years were remarkably similar to the 30-day end point for which PROM is calibrated.

Moreover, PROM was highly predictive of Kaplan-Meier survival, even when this analysis was restricted to patients surviving beyond 30 days, he added.

Among 30-day survivors, each percent increase in PROM score was significantly associated with a 9.6% increase in instantaneous hazard of death (*P* less than .001). ■

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Major Finding: The STS PROM algorithm accurately predicted mortality both at 30 days and during 12 years of follow-up with almost equally strong discriminatory power.

Data Source: A retrospective analysis of 24,222 patients who underwent cardiac surgery at a single academic center between Jan. 1, 1996, and Dec. 31, 2009.

Disclosures: Dr. Puskas and his colleagues reported no relevant disclosures with regard to their study.