Prognostic Implication of Surgical Apgar Score in Hip Fracture Surgeries

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Purpose: The Surgical Apgar Score (SAS) is a simple scoring system to predict postoperative morbidity and mortality within a 30-day postoperative period. Our objective was to evaluate validity of the SAS and likelihood to develop morbidity and mortality among patients who underwent surgery for hip fractures.

Methods: A total of 215 patients were included in the study. Survival analysis was done using Cox proportional hazard model and Weibull distribution, the event being mortality among patients with hip fracture who underwent surgery.

Results: The mortality among patients with SAS >5 was 7.8% as compared to 18.8% among patients with SAS <7. Patients who had SAS <5 had more complications and more deaths. Males suffered more deaths in our cohort as compared to females. Patients who underwent urgent surgery within 48 hours of admission had lower mortality (5.7%) as compared to those who were operated on an elective list after optimization after 48 hours of surgery (14.4%), the hazard to death being 61% greater in the later group (95% confidence interval [CI]: 0.15-0.99, P = 0.04). The patients who were shifted to specialized care had lower SAS scores and suffered more mortality. This may be due to the fact that those individuals were more sick already with higher comorbidities as compared to those who were shifted to general care. Moreover it was also observed that patients who developed complications had 10.6 times more hazard to death as compared with those patients who did not develop any complication, adjusting for other covariates in the model (95% CI: 4.17-26.8; P<0.0001).

Conclusion: The utility of the SAS in the operating room may provide immediate, reliable, and real-time feedback information about patient postoperative risk. We conclude that the SAS is a good and reliable predictor of mortality in hip fracture patients. The results of this study also indicate that the patients with SAS <5 should go to specialized care for close surveillance and monitoring during hospital stay and discharge. However, a large sample cohort is required to validate our findings.