Predicting mortality, hospital length of stay and need for surgery in pediatric trauma patients

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Abstract

Purpose

Pediatric trauma is one of the major health problems around the world which threatens the life of children. The survival of injured children depends upon appropriate care, accurate triage and effective emergent surgery. The objective of this study was to determine the predictive values of injury severity score (ISS), new injury severity score (NISS) and revised trauma score (RTS) on children's mortality, hospitalization and need for surgery.

Methods

In this study, records of trauma patients under 15 years old transported from a trauma scene to emergency department of Poursina hospital from 2010 to 2011 were included. Statistical analysis was applied to determine the ISS, NISS and RTS ability in predicting the outcomes of interest.

Results

There were 588 records in hospital registry system. The mean age of the patients was (7.3 ± 3.8) years, and 62.1\% (n = 365) of patients were male. RTS was the more ability score to predict mortality with an area under curve (AUC) of 0.99 (95\% CI, 0.99–1). In the hospital length of stay (LOS), ISS was best predictor for both the hospital LOS with AUC of 0.72 (95\% CI, 0.67–0.76) and need for surgical surgery with AUC of 0.94 (95\% CI, 0.90–0.98).

Conclusion

RTS as a physiological scoring system has a higher predicting AUC value in predicting mortality. The anatomic scoring systems of ISS and NISS have good performance in predicting of hospital LOS and need for surgery outcomes.