Mechanism of Injury, Glasgow Coma Scale, Age, and Systolic Blood Pressure: A New Trauma Scoring System to Predict Mortality in Trauma Patients

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Background: Trauma is the most common cause of death in people aged 1 - 44 years and the third leading cause of death regardless of age. Early diagnosis can expedite emergency care and thus patients can be transferred more quickly to a treatment center.

Objectives: The purpose of this study was to evaluate the mechanism of injury, Glasgow coma scale, age, and arterial pressure (MGAP) scoring system in predicting mortality in trauma patients.

Patients and Methods: In this cross-sectional study, 5,484 victims over 12 years of age referred to a trauma referral hospital and were evaluated. The MGAP score was assessed based on type of injury, Glasgow coma scale (GCS), systolic blood pressure (BP) and patient’s age. The area under the receiver operating characteristic (AUROC) curve was used as a measure of predictive performance. Data were analyzed using SPSS software version 16.
**Results:** Patients were divided into three groups: scores of less than 18, 18 - 22 and greater than 22; in which the mortality rates were 75.2%, 9.5% and 0.1%, respectively (P < 0.0001). The best cut-off point was 22 in our study, and the MGAP scoring system had 93.7% sensitivity and 91.3% specificity.

**Conclusions:** The MGAP scoring system can be used as an appropriate scoring system to predict mortality in triage trauma patients.

**Keywords:** Scoring System; Injury; Trauma; Mortality; MGAP; Glasgow Coma Scale