Mortality Prediction of MGAP Scoring System (type of injury, GCS, age, and systolic blood pressure) in Trauma Patients

Iraj Baghi 1, Leila Shokrgozar 2, Mohamad- Rasoul Herfatkar 3, Ehsam Kazem-Nezhad 4, Zahra Mohtasham-Amiri 5

1 Assistant professor, General surgery Department, Guilan University of Medical Sciences
2 General Surgeon, General surgery Department, Guilan University of Medical Sciences
3 Assistant professor, General surgery Department, Guilan University of Medical Sciences
4 Assistant professor, Biostatistics Department, Guilan University of Medical Sciences
5 Associate Professor, Department of Preventive and Community Medicine, Medical Faculty, Guilan University of Medical Sciences, postal code 4163545851, Rasht, Iran
Corresponding Author: Z Mohtasham-Amiri, MD, MPH; Associate Professor in Preventive and Social Medicine; Fellowship in Geriatrics from Sydney University; Member of Guilan Road Trauma Research Center; Medical Faculty of Guilan University of Medical Sciences, Rasht/ Iran. Tel: +98 131 6690006, Fax: +98 131 7753836. Mobile: +98 9111329799. Address: postal code 4163545851 Rasht, Iran. E-mail: mohtashamaz@yahoo.com; mohtasham@gums.ac.ir

Introduction: 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 shorten the time of emergency care and a quick transfer of patients to a treatment center.

Objective: This study evaluates the MGAP scoring system to predict mortality in trauma patients.

Materials and Methods: In this cross-sectional study, 5,484 victims over 12 years old who had referred to a trauma referral hospital were evaluated. An MGAP score was assessed based on type of injury, Glasgow Coma Scale (GCS), systolic blood pressure (BP), and patient age. The area under the Receiver Operating Characteristic curve (AUROC) was used as a measure of predictive performance. Data were analyzed by using SPSS (ver 16).

Results: Patients were divided into three groups as follows: up to 18; 18–22, and greater than 22 scores; in which the mortality rate was 75.2%, 9.5%, and 0.1%, respectively (P < 0.0001). The best cut-off point was 22 for our study in which the MGAP scoring system had 93.7% sensitivity and 91.3% specificity.

Conclusion: The MGAP scoring system can be used as an appropriate scoring system to triage trauma patients.

Keywords: Scoring system, injury, trauma, mortality