

### **Prognosis Evaluation for Patients with Abdominal Trauma Using Usual Biological Parameters**

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#### **Abstract**

*Introduction:* Abdominal injuries are responsible for approximately 20% of all post-traumatic deaths, 45-50% of which occurring in the first 60 minutes. Currently there are several prediction scores for the evolution of these patients, which take into account degrees of anatomical lesion, clinical signs and imaging and paraclinical explorations.

*Aim:* The aim of the study was to develop a scoring system to predict mortality in patients with abdominal trauma by using the usual biological parameters.

*Method:* A retrospective, descriptive, correlational and non-interventional multicenter study was performed on a sample of 157 patients with abdominal traumata, hospitalized between 2015-2021, in the General Surgery and the Emergency III clinics of the Emergency University Hospital Bucharest, respectively in the Surgery I Clinic of the Mures County Emergency Clinical Hospital. The following biochemical parameters were analyzed: hemoglobin, hematocrit, leukocyte and platelet counts, coagulogram, glycemia, urea, creatinine, AST, ALT with the intent to have the correlation with the ISS and NISS mortality and traumatic scores. Microsoft Excel and MedCalc applications were used for the statistical analysis of the data.

*Results:* The studied sample presented a sex ratio M:F = 2.82:1, the mean age was  $47.45 \pm 17.37$  years. The elements that presented a correlation with a value greater than 0.3 (and  $p < 0.01$ ) were: age, ALT, AST, urea, hemoglobin, platelet count and glycemia. The cut-off values for these parameters in reference to mortality were established by analyzing the ROC curves. This fact allowed the outline of a predictive score that correlates well with the value of ISS and NISS, the obtained ROC curve using as parameters the value of the proposed risk score and mortality highlighting a good predictive power of the mortality with an AUC of 0.930 ( $p < 0.001$ ).

*Conclusion:* The results of our study showed that a number of biochemical parameters may contribute to shaping a score with predictive value in terms of the evolution of abdominal trauma patients.

**Key words:** abdominal trauma, ISS, NISS, AST, ALT, hematocrit, age, glycemia, mortality