Improved Prediction from Revised Injury Severity Classification (RISC) over Trauma and Injury Severity Score (TRISS) in an Independent Evaluation of Major Trauma Patients

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The usefulness of the Revised Injury Severity Classification (RISC) analysis was compared with that of the Trauma and Injury Severity Score (TRISS) for evaluating the quality of treatment of severely injured patients at the General Hospital Celje, Slovenia. Over a period of 2 years, data from a cohort of 155 patients treated at the General Hospital Celje were included in the Traumaregister Deutsche Gesellschaft für Unfallchirurgie. The structure of the patient group was compared with that in the registry, and TRISS and RISC analyses were performed. The M statistic (0.83) showed a good match of the distribution of probability of survival between groups. Evaluation of RISC (area under the curve [AUC] 0.94, Hosmer–Lemeshow test 3.5) demonstrated the efficacy of this method in the patient group. TRISS (AUC 0.89, Hosmer–Lemeshow test 21.1) was not a reliable instrument for analysis of treatment of major trauma patients. We believe that RISC should replace TRISS for evaluation of the treatment of major trauma patients.

KEY WORDS: MAJOR TRAUMA; TREATMENT; EVALUATION; TRAUMA AND INJURY SEVERITY SCORE (TRISS); REVISED INJURY SEVERITY CLASSIFICATION (RISC); REGISTRY

Introduction

Trauma registries are the basis for programmes that aim to improve the quality of treatment of severely injured patients during the entire course from the accident site to the completion of therapy. The General Hospital Celje in Slovenia implemented a polytrauma registry in 1992 to collect data for the comparison of treatment efficacy with international standards for the most severely injured patients. The registry included all adult polytraumatized patients who sustained severe injuries to two or more body regions. The patient data that were collected were analysed using the Trauma and Injury Severity Score (TRISS).² The TRISS is a scale that takes into account anatomical patterns