

RESEARCH ARTICLE

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Training to identify red flags in the acute care of trauma: who are the patients at risk for early death despite a relatively good prognosis? An analysis from the TraumaRegister DGU®

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Abstract

Background: In the acute care of trauma, some patients with a low estimated risk of death die suddenly and unexpectedly. In this study, we aim to identify predictors for early death within 24 h following hospital admission in low-risk patients.

Methods: The TraumaRegister DGU® was used to collect records of patients who were primarily treated in a participating hospital between 2004 and 2013 with a RISC II score below 10%.

Results: During the study period, 64,379 patients met the inclusion criteria. The mean RISC II score was 2.0%, and the mean ISS was 16 ± 9 . The overall hospital mortality rate was 2.1%, and 0.5% of patients ($n = 301$) died within the first 24 h. A SPB of ≤ 90 mmHg was associated with an increased risk of death ($p < 0.001$). An AIS abdomen score of ≥ 3 was associated with increased risk of death within the first 24 h ($p < 0.001$). A high risk of early death was also seen in patients with an AIS score (thorax) ≥ 3 ; 51% of those who died died within the first 24 h ($p < 0.005$). Death in patients over 60 years was more common after 24 h ($p < 0.001$). Patients with an ASA score of ≥ 3 were more likely to die after the first 24 h ($p < 0.001$).

Conclusions: Indicators predicting a high risk of early death in patients with a low RISC II score include a SPB ≤ 90 mmHg and severe chest and abdominal trauma. Emergency teams involved in the acute care of trauma patients should be aware of these “red flags” and treat their patients accordingly.

Keywords: Trauma, Revised injury severity classification (RISC-score), Trauma registry, Early death, Red flags, Prehospital, Life support

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