Change of initial and ICU treatment over time in trauma patients. 
An analysis from the TraumaRegister DGU®

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Abstract

Background Clinical guidelines have been standardized for pre- and in-hospital trauma management in the last decades. Therefore, it is known that prehospital management has changed significantly. Furthermore, in-hospital course may be altered to reduce complications and length of stay (LOS). However, the development of trauma patient in-hospital management as well as LOS in the intensive care unit (ICU) has not been investigated systematically over a long-term period in Germany. Aim of our study is to examine the changes in in-hospital management and LOS in the ICU in moderately and severely injured patients.

Methods Patients documented in the TraumaRegister DGU® (TR-DGU) of the German Trauma Society from 2000 to 2011 and admitted to ICU were included in this study. Demographic data, the pattern of injury, injury severity, duration of mechanical ventilation, LOS in the ICU, hospital LOS, and discharge destination were evaluated. The mean values and the standard deviations are shown. The constant variables were calculated with changes over time analyzed by linear regression analysis, and categorical variables were calculated with the chi-square test.

Results A total of 18,048 patients were analyzed. The rate of patients being intubated at the time of ICU admission decreased from 86.8 % in 2000 to 60.0 % in 2011 (p < 0.001). The time of mechanical ventilation decreased from 7.5 ± 10.5 to 4.7 ± 8.7 days. The intensive care unit LOS was reduced from 11.7 ± 12.8 to 9.0 ± 11.3 days and the length of hospital stay from 27.9 ± 28.7 to 21.1 ± 20.4 days (both p < 0.01). The ICU LOS remained stable in the subgroup of mechanically ventilated patients (12.7 ± 13.2 day in 2000, 12.6 ± 12.9 in 2011, p = 0.6),