



Pre-hospital trauma care in Switzerland and Germany: do they speak the same language?

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Abstract

Purpose Swiss and German (pre-)hospital systems, distribution and organization of trauma centres differ from each other. It is unclear if outcome in trauma patients differs as well. Therefore, this study aims to determine differences in characteristics, therapy and outcome of trauma patients between both German-speaking countries.

Methods The TraumaRegister DGU[®] (TR-DGU) was used. Patients with Injury Severity Score ≥ 9 admitted to a level I trauma centre between 01/2009 and 12/2017 were included if they required ICU care or died. Trauma pattern, pre-hospital procedures and outcome were compared between Swiss (CH, $n = 4768$) and German (DE, $n = 66,908$) groups.

Results Swiss patients were older than German patients (53 vs. 50 years). ISS did not differ between groups (CH 23.8 vs. DE 23.0 points). There were more low falls < 3 m (34% vs. 21%) at the expense of less traffic accidents (37% vs. 52%) in the Swiss population. In Switzerland 30% of allocations were done without physician involvement, whereas this occurred in 4% of German cases. Despite a comparable number of patients with a GCS ≤ 8 (CH 29.6%; DE 26.4%), differences in pre-hospital intubation rates occurred (CH 31% vs. DE 40%). Severe traumatic brain injuries were diagnosed most frequently in Switzerland (CH 62% vs. DE 49%). Admission vital signs were similar, and standardized mortality ratios were close to one in both countries.

Conclusion This study demonstrates that patients' age, trauma patterns and pre-hospital care differ between Germany and Switzerland. However, adjusted mortality was almost similar. Further benchmarking studies are indicated to optimize trauma care in both German-speaking countries.

Keywords International comparison · Switzerland · Germany · Trauma systems

Abbreviations

EMS Emergency medical service
HEMS Helicopter emergency medical service
DE German cohort

CH Swiss cohort
TR-DGU TraumaRegister DGU[®]
pRBC Packed red blood cells
SMR Standardized mortality ratio

Kai Oliver Jensen and Michel Paul Johan Teuben contributed equally.

The TraumaRegister DGU: Committee on Emergency Medicine, Intensive Care and Trauma Management (Sektion NIS) of the German Trauma Society (DGU).

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Introduction

Implementation of standardized guidelines for pre-hospital care as well as ongoing optimization of trauma system/network organization has resulted in improved outcome in trauma patients worldwide [1–4], although pre-hospital care systems, guidelines and organization of local trauma networks differ between countries. This also applies to two mainly German-speaking countries: Germany (DE) and Switzerland (CH) [5, 6]. Documented differences have both historical and geographical backgrounds. Geographical wise, total driving distance in Germany (709 billion vehicle km) is