Epidemiological comparison between the Navarra Major Trauma Registry and the German Trauma Registry (TR-DGU®)

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Abstract

Background: International benchmarking can help identify trauma system performance issues and determine the extent to which other countries also experience these. When problems are identified, countries can look to high performers for insight into possible responses. The objective of this study was to compare the treatment and outcome of severely injured patients in Germany and Navarra, Spain.

Methods: Data collected, from 2010 to 2013, in the Navarra Major Trauma Registry (NMTR) and the TraumaRegister DGU® (TR-DGU) were compared. Both registries followed the Utstein Trauma Template (European Core Dataset) for documentation of trauma patients. Adult patients (≥16 years) with New Injury Severity Score (NISS) being >15 points were included in this study. Patients who had been admitted to the hospital later than 24 h after the trauma, had been pronounced dead before hospital arrival, or had been injured by hanging, drowning or burns, were excluded. Demographic data, injury data, prehospital data, hospital treatment data, time intervals, and outcome were compared. The expected mortality was calculated using the Revised Injury Severity Classification score II (RISC II).

Results: A total of 646 and 43,110 patients were included in the outcome analysis from NMTR and TR-DGU, respectively. The difference between observed and expected mortality was −0.4% (standardized mortality ratio [SMR] 0.97, 95% CI 0.93–1.04) in Germany and 1.6% (SMR 1.08, 95% CI: 1.02–1.14) in Navarra. Differences in the characteristics of trauma patients and trauma systems between the regions were noted.

Conclusion: The higher observed mortality in Navarra is consistent with the epidemiological characteristics of its population. However, to improve the quality of trauma care in the Navarra trauma system, certain improvements are necessary. There were less young adults with severe injuries in Navarra than in Germany. It is possible to compare data of severely injured patients from different countries if standardized registries are used.

Keywords: Severe trauma, Trauma registry, Registry comparison, Quality of trauma care

Background

Major trauma is a leading cause of death and disability [1]. Despite the importance of injuries, there are no strict national guidelines for trauma care in Spain, nor is there a nation-wide trauma registry. It has been shown that trauma registries are valid tools to assess and improve trauma care [2]. The great value of trauma registries lies in their potential to perform benchmarking at regional, national or international level [2].

The Navarra Major Trauma Registry (NMTR) was created in 2010 in Navarra, a region of northern Spain bordering France [3]. For benchmarking purposes, this registry follows the recommendations of the uniform Utstein style for documentation of severe trauma in Europe [4].

The outcome of emergency care of severely injured patients in Navarra has been compared previously. Gomez de Segura et al. compared the Navarra Emergency System and Atlantic Pyrenees (France) using data from 2001 to 2002. The results showed that despite more aggressive approach and employment of great resources, the French comprehensive emergency system didn't show greater survival rates among injured patients compared to Navarra [5].