A comparison of severely injured trauma patients admitted to level 1 trauma centres in Queensland and Germany

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Key words
multiple trauma, outcome, trauma, trauma network, trauma registry.

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Accepted for publication 4 March 2009.
doi: 10.1111/j.1445-2197.2010.05210.x

Abstract

Background: The allocation of a trauma network in Queensland is still in the developmental phase. In a search for indicators to improve trauma care both locally as state-wide, a study was carried out comparing trauma patients in Queensland to trauma patients in Germany, a country with 82.4 million inhabitants and a well-established trauma system.

Methods: Trauma patients ≥15 years of age, with an Injury Severity Score (ISS) ≥16 admitted to the Princess Alexandra Hospital (PAH) and to the 59 German hospitals participating in the Trauma Registry of the German Society for Trauma Surgery (DGU-G) during the year 2005 were retrospectively identified and analysed.

Results: Both cohorts are comparable when it comes to demographics and injury mechanism, but differ significantly in other important aspects. Striking is the low number of primary admitted patients in the PAH cohort: 58% versus 83% in the DGU-G cohort. PAH patients were less psychologically deranged and less severely injured: ISS 25.2 ± 9.9 versus 29.9 ± 13.1 (P < 0.001). Subsequently, they less often needed surgery (61% versus 79%), ICU admission (49% versus 92%) and had a lower mortality: 9.8% versus 17.9% of the DGU-G cohort.

Conclusions: Relevant differences were the low number of primary admissions, the lesser severity of injuries, and the low mortality of the patients treated at the PAH. These differences are likely to be interrelated and Queensland’s size and suboptimal organization of trauma care may have played an important role.

Introduction

Trauma remains a major health and social problem in every part of the world. It constitutes the main cause of death in people between the ages of 1 and 35 years in Australia and Western Europe.1 Possibly, a large percentage of deaths are needless and preventable if better treatment and prevention programs would be available. Queensland is known to have the highest incidence of trauma of all Australian states and is the most decentralized, with only 51% of its population located within Brisbane’s metropolitan area.2 Nevertheless, its trauma death rate is comparable to most other states (Table 1): 36.1 per 100,000 inhabitants in 2005. The three main causes were suicide, traffic incidents and accidental falls.2

Various initiatives have been undertaken to improve trauma care in Queensland, but the allocation of a trauma network and subsequent trauma centres is still in the developmental phase.3 Because of the state’s geographical size (1.7 million km²), it has been divided into three zones (i.e. catchment areas) to facilitate the organization of medical care. Queensland’s first recognized adult Major Trauma Service (comparable to a level 1 trauma centre), the Princess Alexandra Hospital (PAH) in Brisbane, constitutes the only adult tertiary referral hospital for the southern zone, with a geographical size of almost 375 000 km² and 1.8 million inhabitants.2 When necessary, six local hospitals (Gold Coast Hospital, Ipswich Hospital, Logan Hospital, Mater Hospital, Redcliffe and Caboolture Hospitals, Toowoomba Hospital) can provide initial trauma care while awaiting the