RESEARCH ARTICLE

Association of an In-House Blood Bank with Therapy and Outcome in Severely Injured Patients: An Analysis of 18,573 Patients from the TraumaRegister DGU®

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Abstract

Introduction

Hemorrhagic shock remains one of the most common causes of death in severely injured patients. It is unknown to what extent the presence of a blood bank in a trauma center influences therapy and outcome in such patients.

Material and Methods

We retrospectively analyzed prospectively recorded data from the TraumaRegister DGU® and the TraumaNetzwerk DGU®. Inclusion criteria were Injury Severity Score (ISS) ≥ 16, primarily treated patients, and hospital admission 2 years before or after the audit process.

Results

Complete data sets of 18,573 patients were analyzed. Of 457 hospitals included, 33.3% had an in-house blood bank. In trauma centers with a blood bank (HospBB), packed red blood cells (PRBCs) (21.0% vs. 17.4%, p < 0.001) and fresh frozen plasma (FFP) (13.9% vs. 10.2%, p < 0.001) were transfused significantly more often than in hospitals without a blood bank (Hosp0). However, no significant difference was found for in-hospital mortality (standard mortality ratio [SMR, 0.907 vs. 0.945; p = 0.25]). In patients with clinically apparent shock on admission, no difference of performed transfusions were present between HospBB and Hosp0 (PRBCs, 51.4% vs. 50.4%, p = 0.67; FFP, 32.7% vs. 32.7%, p = 0.99), and no difference in in-hospital mortality was observed (SMR, 0.907 vs. 1.004; p = 0.21).