Incidence and significance of injuries to the foot and ankle in polytrauma patients—An analysis of the Trauma Registry of DGU

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Background: Injuries to the foot and ankle are often missed or underestimated during the initial care for polytraumatized patients. Nonetheless, injuries to the lower extremity exert significant influence on long-term outcome after discharge from the acute care facility. Since the mortality of trauma decreased in the last decades, these injuries gain more effect on the overall outcome. We analysed foot and ankle injury patterns, associated procedures and special characteristics of this population during early care.

Methods: Multiply injured patients of the Trauma Registry of DGU (TR-DGU; Injury Severity Score, ISS ≥ 16) with injuries to the foot and ankle (group F&A) were compared to the remaining TR-DGU population (group Non-F&A) for differences in injury characteristics, surgical treatment and early outcome. A detailed comparative statistic is provided.

Results: Demographic data and injury severity were comparable between the groups. The group F&A showed significantly more falls from a height above 3 m and suicidal injuries. Their overall injury severity to the extremities, especially to the regions different from the foot and ankle, was significantly higher compared to group Non-F&A. Group F&A patients had more surgeries and less intensive care complications. Mortality was 11.6% (F&A) and 16.2% (Non-F&A). Concerning initial outcome when discharged from the acute care facility, group F&A patients more commonly were moderately or severely disabled in everyday life.

Conclusions: Our data enhance the need for a meticulous search for injuries to the foot and ankle in patients with falls, comparably light injuries to the trunk and head and especially in patients with multiple and severe injuries to the skeletal system. Since 88.4% of patients with foot and ankle injuries are discharged alive, early appropriate care should be given to these injuries that significantly affect long-term outcome.

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Introduction

During the last decades, the incidence, severity and mortality of patients suffering multiple injuries (“polytrauma”) declined significantly. 16,27 Despite these findings, especially injuries to the foot did not change in comparable ways in multiply injured patients. 25,31 The injury severity and incidence is still high and safety measures for cars and other vehicles do not seem to affect injuries to the foot and ankle. 31 However, injuries to the foot and ankle are still reported to be commonly underestimated or even missed until late in the acute care setting, when life threatening injuries to the head and trunk are effectively treated and complications during the intensive care stay such as sepsis, adult respiratory distress syndrome and (multiple) organ dysfunction are under control. 34

Even more important for the early diagnosis and effective therapy of injuries to the foot and ankle can be deduced from studies looking at long-term follow-up. 5,20,33,40 These analyses show a high significance of injuries to the lower extremity for the outcome of patients after severe and multiple injuries. Especially injuries below the knee were tied to higher rates of unemployment, longer sick leave time, more pain, more follow-up surgeries and decreased overall outcome as measured by instruments such as SF-12.

Therefore, our study was designed to identify potential injury patterns and mechanisms of injury indicating injuries of the foot and ankle region in polytrauma patients as well as common concomitant injuries and to determine the clinical course of this special population. This knowledge may lead clinicians to a focussed search for foot and ankle injuries in certain high risk patients and facilitate initiation of early treatment.