Does the presence of an emergency physician influence pre-hospital time, pre-hospital interventions and the mortality of severely injured patients? A matched-pair analysis based on the trauma registry of the German Trauma Society (TraumaRegister DGU®)

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ABSTRACT

Purpose: The role of emergency physicians in the pre-hospital management of severely injured patients remains controversial. In Germany and Austria, an emergency physician is present at the scene of an emergency situation or is called to such a scene in order to provide pre-hospital care to severely injured patients in approximately 95% of all cases. By contrast, in the United States and the United Kingdom, paramedics, i.e. non-physician teams, usually provide care to an injured person both at the scene of an incident and en route to an appropriate hospital. We investigated whether physician or non-physician care offers more benefits and what type of on-site care improves outcome.

Material and methods: In a matched-pair analysis using data from the trauma registry of the German Trauma Society, we retrospectively (2002–2011) analysed the pre-hospital management of severely injured patients (ISS ≥16) by physician and non-physician teams. Matching criteria were age, overall injury severity, the presence of relevant injuries to the head, chest, abdomen or extremities, the cause of trauma, the level of consciousness, and the presence of shock.

Results: Each of the two groups, i.e. patients who were attended by an emergency physician and those who received non-physician care, consisted of 1235 subjects. There was no significant difference between the two groups in pre-hospital time (61.1 [SD 28.9] minutes for the physician group and 61.9 [SD 30.9] minutes for non-physician group). Significant differences were found in the number of pre-hospital procedures such as fluid administration, analgesication and intubation. There was a highly significant difference (p < 0.001) in the number of patients who received no intervention at all applying to 348 patients (28.2%) treated by non-physician teams and to only 31 patients (2.5%) in the physician-treated group. By contrast, there was no significant difference in mortality within the first 24 h and in mortality during hospitalisation.

Conclusion: This retrospective analysis does not allow definitive conclusions to be drawn about the optimal model of pre-hospital care. It shows, however, that there was no significant difference in mortality although patients who were attended by non-physician teams received fewer pre-hospital interventions with similar scene times.

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Introduction

Many countries worldwide have implemented structured priority-based training programmes in order to improve pre-hospital and in-hospital care for severely injured patients. These