

An effective prehospital management after traumatic cervical spinal cord injury can positively influence the neurological as well as the functional outcome

Introduction

There is accumulating evidence of a potential beneficial effect of early surgical intervention on the neurological and functional outcome after traumatic SCI. The emergency medical service (EMS) system in Central Europe is well developed allowing short transportation times between the injury site and the hospital.

This study aimed to investigate the relationship between prehospital management and neurological recovery after SCI.

Methods

We performed a retrospective analysis of data from patients who were treated at a Spinal Cord Injury Center. Follow-up data has been collected prospectively as part of the European Multicenter Study about Spinal Cord Injury (EMSCI) registry. We included data acquired between 2004 and 2021. Patients above the age of 18 years, who sustained traumatic SCI without severe concomitant injuries or traumatic brain injury have been included.

Results

We identified 241 patients (196 males), who met inclusion criteria. The main predictor for the neurological outcome was the level of the lesion with significantly worse neurological recovery in individuals who sustained thoracic injuries. Patients with cervical trauma had significantly higher chances to regain function when they have been initially admitted to a specialized center compared to those who were admitted to a regional trauma center and relocated afterwards. The outcome was not associated with the distance between the site of injury and the hospital, due to the well established emergency medical service system.

Conclusion

In case of suspected cervical SCI, a direct transport to a specialized spinal cord injury center should be pursued.