

The Association of Total Prehospital Time to Severe Trauma Patient Outcomes in Physician Staffed Emergency Medical Teams in Sarajevo, Bosnia, and Herzegovina

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Introduction: The Institute for Emergency Medical Assistance of Canton Sarajevo covers 1,777 square kilometers. All teams are physician staffed and are organized in ten geographic points. Patients are transported to a tertiary care level facility—University Clinical Center Sarajevo. Our objective was to determine the association between total prehospital time and severe trauma patient outcomes in a physician staffed emergency medical system with the hypothesis that the length of prehospital time is insignificant to patient outcome if physician treatment begins on scene.

Method: This was a descriptive, retrospective, analytical study conducted from June to December 2020. The data of 153 patients with an ISS score of ≥ 16 was selected from patient registries of both facilities. According to transport duration, patients were assigned to one of four groups: <15 minutes (group 1); 16 to 30 minutes (group 2); 31–45 minutes (group 3) and > 45 minutes (group 4). Both groups according to the TRISS score were equal in mortality with an expected survival rate margin taken at 70% due to this being the approximate intrahospital survival rate of our patients. The primary outcome was in-hospital mortality, and secondary outcomes included length of hospital stay, length of ICU stay and 30-day survival rate.

Results: We found no statistically significant difference to in-hospital mortality in relation to the length of pre-hospital transport when physician treatment begins on scene ($p = 0,186$). We ruled out any significant difference in length of stay and ICU stay ($p = 0,179$ and $p = 0,173$, respectively) among the pre-selected groups in relation to the length of prehospital time. Also, the 30 day survival rate was unaffected by the length of transport in physician led teams ($p = 0,156$).

Conclusion: With strategically placed physician staffed EMS teams and physician treatment beginning on scene, patient outcome is unaffected by the length of transport.

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Traumatic Cardiac Arrest in Polytrauma—There are Survivors: A 10-Year Analysis from a German Helicopter Base

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Introduction: In Germany, emergency care is provided by ambulances and rescue helicopters. Emergency physicians are part of prehospital care. The rescue helicopter in Dresden covers the city with 540.000 inhabitants and surrounding areas. The goal of the study was to evaluate cases of traumatic cardiac arrest (TCA) and to describe factors that affect the primary success of prehospital cardiopulmonary resuscitation (CPR) in trauma.

Method: Data of all emergencies from the German Air Rescue (DRF-Luftrettung®) Helicopter Base Dresden were recorded on a standardized protocol and transferred to a central database (MEDAT®, HEMSDER®). Data from all patients with severe injuries, classified as polytrauma between January 2006 and December 2015 were analyzed.

Results: There were a total number of 14,126 emergency cases involving the rescue Helicopter. The Helicopter was on the scene within 10.9 minutes [4–34]. Polytraumatized patients were identified in 673 cases (4.76%), the mean age was 43.73 years [2–98], and 498 patients were male (73.99%). In 444 cases, traffic accidents were responsible, in 188 cases falls from high. In 46 cases a suicide was documented. Mean ISS was 34,04 [16–75]. The main injury regions were head, extremities and chest. In 115 patients (17.08%) a TCA was observed. 43 pat. were pronounced dead initially and no treatment was initiated. 72 pat. (62.6%) received CPR. 39 of these pat. (54,17%) were also pronounced dead after treatment. 14 pat. (19.44%) were transported to hospital with ongoing CPR. 19 pat. (27.38%) reached the return of spontaneous circulation (ROSC). Male pat. reached more often ROSC.

Conclusion: According to present guidelines for TCA, it is important that reversible causes of cardiac arrest in trauma pat. are to be treated. If we ensure the treatment of hypoxia, hypovolemia, tension pneumothorax and cardiac tamponade consequently, there will be a survival chance. Regular training for manual skills and simulation can be a key factor.

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The Implementation and Evolution of Helicopter Emergency Medical Services in the Republic of Ireland

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Introduction: Helicopter Emergency Medical Services (HEMS) have formed an integral component of the Irish