"Scoop and Run" Or "Stay and Play"

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Abstract

The German rescue organization is under financial pressure and tries to economize. Even bare essentials of emergency medicine are questioned by political authorities. The topic of actual discussion is if a preclinical medical system is needed or if it can be replaced by a speedy transportation system. As seen before, eyes are turning towards the United States. Germany tries to apply American experiences to German circumstances. The hot topic is: “Scoop and Run”. It means to take the patient without primary treatment and hurry him to the next hospital. On the other hand, we practice the concept of “Stay and Play” in the case of a severely traumatized patient. By administration of first aid, infusion therapy, early intubation and ventilation we try to avoid or at least minimize secondary, shock-related organ damage.

An argument in favor of “Scoop and Run” seems to be the speediness of the German rescue system. It was stated in the 1994/95 German Bundestag that an average primary evacuation transport reaches a victim within 7.4 minutes. The time lapse during daytime will even decrease to 6.2 minutes in larger cities. 40% of all patients are reached within 5 minutes but only in 29% of the cases a physician reaches the site. 10 minutes after an accident a total of 80.3% of the victims are reached by means of rescue but only 68% of them are reached by a physician ([1]). It has therefore to be evaluated if a fast “scoop and run” to the next hospital without extended preclinical medical care might be of better interest for the patient. The majority of arguments in favor of “scoop and run” still come from the USA. A variety of researchers made it seem obvious that in case of severe hemorrhage speedy transportation to competent surgery is to be preferred ([2],[3]). Insertion of a peripheral intravenous catheter takes approx. 10 to 12 minutes for beginners/intermediates and an average of 8 to 10 minutes for the experienced rescuer. Transportation times in the US are in average 8.5 minutes and take therefore less time then the insertion of a peripheral IV ([4]). A study performed by Kaweski et al. demonstrated that not only logistical but also medical reasons led to preference of “scoop and run” ([5]). Preclinical insertion of peripheral intravenous catheters did not result in benefits in this study investigating 6,855 patients with comparable trauma.

In emergency medicine, injuries are measured in trauma scores, comparing trauma to suffered damage. Smith et al. have proven in 1985 that victims with short transportation times and imminent life-threatening injuries deteriorated from score 4.9 to 3.4 upon arrival at a hospital ([6]). An average of 600 ml crystalloid solution had been administered with an estimated blood loss of 2500 ml. Severe injured with systolic blood pressure below 70 mmHg on the site of the accident were treated with infusion of 1000 ml electrolyte solution over 17 minutes and had a transportation time of 8.5 minutes. An initial stabilization was noted. Nevertheless, 5 out of 15 patients died. These findings correspond with animal research as stated by Chudnowski et al. in tests with young pigs ([7]). They proved that even with the earliest possible administration of infusion therapy (below bleeding rate) prognosis could not be improved.

The main argumentation in favor of the “scoop and run” concept in the US is based on the high occurrence of penetration injuries of thorax and abdomen caused by shooting or knife stabbing. Ivatury et al. demonstrated that only 2% of the victims with perforation injury of the chest survived preclinical treatment (oxygen administration, MAST, infusion therapy, and intubation) which took an average of 22 minutes. In the control group (no preclinical treatment) with an average transportation time of 8.5 minutes the survival rate was 18% ([8]). The disadvantage of some of the American studies is that they lack in the patient selection and that they do not include aggressive infusion therapy or patients who died prior reaching the ER.

There are no comparable data from Europe. There, the “stay and play” system has been established. The studies are mainly based on comparison of data prior and after introduction of the system bringing an emergency physician to the spot of the accident. A study by Osterwalder et al. on 143 severely traumatized patients with high injury scores (ISS and TIRSS) demonstrated that mortality of more than 50% 20 years ago has decreased to 10-15% in recent times. He was able to prove that not the shorter transportation time but the qualified medical treatment during the critical preclinical period was responsible for this significant improvement ([9]). Dressing et al. demonstrated in a prospective study that mortality could be decreased by 10% through invasive standard therapy of ventilation and circulation. Respiratory failure decreased 20% and multiorgan failure MOF 5% ([10]). Hut et al. investigated the influence of early intubation at the site of the accident compared to intubations upon arrival in the ER. Patients intubated early suffered in 9.1% from ARDS and in 13% from pneumonia compared to 17% ARDS and 24% pneumonia if intubated after arrival in the ER ([11]).

Global assessments are not sufficient to answer the question what concept might be better. A more differentiated analysis of damages is indispensable. Pepe et al. found that preclinical treatment in slightly injured (trauma score 16 to 11) did not positively influence hospital stay. In patients with moderate injury (trauma score 10 to 6) preclinical therapy was beneficial in regard to rehabilitation. Patients with severe trauma had a high mortality regardless of preclinical treatment ([12]).

The differences between Europe and the US are the pattern of injury (more penetration injuries in the US) and the difference in transportation times (hospitals in Europe are not so widely spread). These are some of the main reasons why the American system cannot simply be transferred to Europe or to Germany. Due to longer distances the transportation times are higher and therefore, the patient is much longer without treatment ([13]). In addition, financial difficulties in the German Health Department result quite often in non-acceptance of patients by the nearest hospitals. This phenomenon is called “emergency tourism”. Longer transportation times add to the physical strain of the patient and necessitate preclinical stabilization. Minor transportation stress might result in additional trauma and result in decompensation of an unstable organism.

Based on general experience in emergency medicine only a limited group of patients can benefit from early intensive therapy (13). Patients with perforating injuries to the chest or abdomen, as often seen in the US, do not belong into that group. Similar to the US, we do not try to normalize blood pressure through aggressive volume treatment in such patients in Germany. Emergency patients in Germany have a different profile. Therefore, the concept of preclinical emergency treatment cannot be defined by rather rare cases. There is no question that severely injured patients can benefit from emergency interventions. A study in Hannover-Germany demonstrated that mortality in polytrauma has decreased from 46% in 1072 to 17% in 1989. Most of the patients died on the site of the accident due to the severity of the injuries ([14]).

Reevaluation of the “scoop and run” system by the military led to the suggestion that such a system should be abandoned in favor of early emergency treatment on site ([15]). It should also be noted that “scoop and run” in the US is not only favored because of medical but also because of legal or logistical reasons. Physicians are usually not involved in preclinical treatment of patients. Therefore, the question whether to send physicians or not never arose. The question instead was what kind of emergency treatment a paramedic should be allowed to perform. The intervention measures of paramedics in Germany cannot be compared to the ones in the US, due to different training and job descriptions. It is the responsibility of the local authorities to decide what paramedics are allowed to perform. All these differences explain the discrepancies between the two systems.

Resulting from this analysis, a change from early intensive treatment (“stay and play”) to the economically cheaper “scoop and run” without specially trained emergency physicians cannot be accepted in Germany. We still have to follow the development of the “rescue chain” initiated in the seventies. A real reduction of costs can only be obtained by optimal performance of emergency treatment at all levels, i.e. preclinical, clinical and rehabilitation. “Stay and play” has therefore to be continued with the same quality of medical care as in the recent past. Deviation from this system cannot be justified at this moment and would be judged as a step backward. This fact is supported by the current knowledge that sufficient preclinical intensive therapy results in better outcome. On-site stabilization of the patients prior to transportation, especially if long transportation times are to be expected, clearly result in a beneficial effect in regard of the clinical course.

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