Trauma Team – the first personal impressions after the terrorist attacks in Oslo and Utøya

Trauma Team – pierwsze, osobiste refleksje po atakach terrorystycznych w Oslo i na Utøya

Radosław Wilimski

Department of Cardiothoracic Surgery, Ullevål University Hospital, Oslo, Norway
Clinic of Cardiac Surgery at 1st Department of Cardiology, Medical University of Warsaw, Poland

Kardiochirurgia i Torakochirurgia Polska 2011; 8 (3): 318–320

Abstract

Out of the 32 patients severely injured in the terrorist attack in the centre of Oslo and on the Utøya island transported to the trauma centre at the Ullevål hospital, 31 were rescued in the first phase, that is crucial for good prognosis. Which factor is responsible for such a good result? Or maybe the success of the rescue operation results from the entity of numerous everyday painstaking efforts of the Trauma Team? The fact of being a specialist in cardiothoracic surgery and the consequent obvious knowledge of the pathophysiology of the respiratory and cardiovascular system makes a *cardiothoracic surgeon* an important member of the Trauma Team. The tragic events in Norway made me realize that nowadays in any part of the world we can expect the catastrophes, which require urgent optimal medical actions under very tough conditions. Are young Polish cardiothoracic surgeons properly prepared to treat accident victims effectively?

Key words: trauma team, terrorist attack in Norway, traumatology.

Streszczenie

Spośród 32 ciężko rannych pacjentów w zamachu terrorystycznym w centrum Oslo i na wyspie Utøya, przetransportowanych do centrum urazowego w szpitalu Ullevål, 31 zostało uratowanych w pierwszej, decydującej o dalszym rokowaniu fazie leczenia. Który z czynników zadecydował o tak dobrym wyniku leczenia? A może suma wielu drobnych, codziennie wypracowywanych przez *Trauma Team* doświadczeń stanowiła siłę akcji ratunkowej? Naturalna znajomość patofizjologii układu oddechowego i sercowo-naczyniowego związana ze specjalizacją w kardio- i torakochirurgii czyni kardio-torakochirurga ważnym członkiem *Trauma Team*. Tragiczne wydarzenia w Norwegii uświadomiły mi, że w obecnych czasach wszędzie możemy się spodziewać katastrof, wymagających nagle optymalnych działań medycznych w bardzo trudnych warunkach. Czy jednak w Polsce młodzi kardio- i torakochirurdzy są odpowiednio przygotowani do skutecznego leczenia ofiar wypadków?

Słowa kluczowe: trauma team, atak terrorystyczny w Norwegii, traumatologia.

The trauma centre at the Ullevål University Hospital in Oslo is the largest of this kind in Norway and one of the largest in Europe. It provides emergency medical care for 2.7 million inhabitants of Oslo and the surrounding area. There are admitted 1.400 patients a year, about 600 of them manifest severe multi-organ injuries. Due to a *continuous* quality improvement and a systematic work routine, a *sustained* reduction of mortality is observed among patients treated at Ullevål. Rapid transport to the hospital and the possibility of urgent surgical treatment in the admission room are two main elements of a model for trauma management.

An alert from the pager that informs the doctor on duty – a Trauma Team member – about the arrival of accident victims is usually received here 3 times a day on average. In the afternoon on 22nd July 2011, it called at least 32 times. Out of the 32 patients severely injured in the terrorist attack in the centre of Oslo and on the Utøya island transported to the trauma centre at the Ullevål hospital, 31 were rescued in the first phase, that is crucial for good prognosis. There were 26 direct admissions and 5 patients were transported from the local hospitals (10 patients from the bomb explosion attack and 21 shot victims from Utøya). There were 18 operations performed, 10 of which were laparotomies and 3 thoracotomies. From 4 p.m. to 11 p.m. all the patients were initially managed. The 32nd patient was transported to the hospital later the next day. Several patients required extensive surgical revisions of the thoraco-abdominal area

Address for correspondence: Radosław Wilimski, Klinika Kardiochirurgii I Katedry i Kliniki Kardiologii WUM, ul. Banacha 1a, 02-097 Warszawa

and vascular and orthopaedic operations in the upper and lower limbs performed subsequent few days.

Which factor is responsible for such a good result? Or maybe the success of the rescue operation results from the entity of numerous everyday painstaking efforts of the Trauma Team?

For the last 5 years during the holiday season I have been having an opportunity to learn and work with the cardio-thoracic team of the Ullevål University Hospital in Oslo. Apart from routine surgical treatment of patients with heart and lung diseases, a *cardiothoracic surgeon* on duty also works with the Trauma Team. In a rush of daily clinical duties, you have to be highly self-disciplined to participate in the examination and treatment of each trauma patient in the surgical emergency room. However, the necessity of this requirement is beyond question.

Obviously, all of us were surprised by the proportions and the nature of wounds that we faced on 22nd July. Usually, a maximum of 20 patients a year are admitted because of gunshot wounds. However, good work organization and the implementation of routine procedures of dealing with a multi-organ trauma patient allowed the control of the stress fairly quickly and turned it into constructive energy. Focusing attention on a single patient at a given moment, which is typical of the Trauma Team management, is the key to success. The rescue teams were run by the three people with the greatest experience in traumatology at the Ullevål Hospital: Johan Pillgram-Larsen, Tina Gaarder and Pål Aksel Nćss. Short time after the first information about the tragic events, doctors willing to voluntary help started to flood the admission room. This allowed for creating 20 trauma teams, which though smaller than typical, were sufficient to provide professional help.

The typical Trauma Team consists of:

- surgeon, a team leader,
- surgeon responsible for the examination of the patient,
- *cardiothoracic surgeon,*
- anaesthesiologist,
- 2 anaesthetic nurses,
- scrub nurse,
- 2 nurse at the admission room,
- radiologic technician,
- radiologist,
- laboratory technician.

The management in accordance with the principles developed throughout the years implemented in the team of workers, who every day closely cooperate, allowed a reduction of mortality since 2005 from 19% to 12%. Among patients in a critical condition, mortality decreased from 30% to 20%. This means that in the years 2005-2009 we have saved additional 68 patients admitted to the hospital in a critical condition.

Unfortunately, the EU regulations and too short time that elapsed from these tragic events do not allow for the publication of the most interesting materials such as the results of imaging examinations, information on types of injuries, methods of management and the results of the treatment. To make such data public, consent of each patient is required, which, in the opinion of the Norwegian doctors is impossible due to too short time that elapsed from the tragedy. Currently, they are preparing basic medical information on the catastrophe in order to standardize the output data for further medical publications. We will present it as soon as possible.

One of the main conclusions of Tina Gaarder on teamwork was that the surgeon who stops working in the Trauma Team loses ability to cooperate in teamwork during the treatment of the patient with multi-organ injury. In my opinion, proper communication between doctors, especially under such stressful conditions, was the key to fast and optimal help for victims. There were no unnecessary people at the workplace; commands were given by the leader of the Trauma Team loud and clear. The remaining teams were awaiting their turn in a separate room. The coordinator responsible for admission, discharge and transfer of the patients systematically informed us how many patients are being transported and what their conditions are.

Johan Pillgram-Larsen indicates the importance of full cooperation of all doctors at the emergency room right from the first contact with the patient. Then, you do not waste precious minutes on referring the patient from one specialist to another. Gathering all necessary specialists under one roof is the key to success in the treatment of multi-organ injuries. Whereas, a division of the treatment into stages moves the entire system about 25 years back.

When you have to treat a large number of patients at the same time, there is no room for improvisation – says Pål Aksel Nćss. An admission room can not be a bottleneck in the process of treatment. Here, we must control bleeding, remove contaminated tissues and refer the patient to the operating room or further diagnostics and treatment at the intensive care unit. He points that an adequately trained and well-integrated staff is more important for the successful treatment than a new building of the admission room.

Personally I think that though for many patients the day of catastrophe was critical to the process of healing, also the next day as well as the subsequent few days were equally important as doctors made repeated revisions of the wounds and took therapeutic decisions. Infection prevention, postoperative rehabilitation and psychological support were essential elements of the treatment. Daily meetings of specialists allowed for comprehensive treatment of the patients.

Injuries are one of the three most common causes of sudden deaths in Poland. A necessity to create trauma centres is reported by the Traumatology Section of the *Association of Polish Surgeons*. In Poland, there are about 3 million injuries a year. Out of these patients, 300 thousands require hospitalization, and 30 thousands die. An amendment to the medical rescue *act* passed on July 2009 provides for creating in Poland a dozen or so specialist trauma centres.

As traumatology is becoming more and more specialized, centres are created based on highly specialized units. At the same time, a division of surgery into *sub-specializations*

results in the situation when doctors lose the ability to treat the patient with multi-organ injury in a comprehensive manner. In the first minutes of treatment, they focus attention primarily on ensuring proper ventilation and stabilization of the circulatory system, which means a need to exclude or urgently treat pneumothorax and bleeding into the chest, the abdomen or from the major blood vessels. As a member of the Trauma Team, a c*ardiothoracic surgeon* is responsible for the evaluation of the thoracic organs, major blood vessels and then taking appropriate therapeutic measures. The fact of being a specialist in cardiothoracic surgery and the consequent obvious knowledge of the pathophysiology of the respiratory and cardiovascular system makes a c*ardiothoracic surgeon* an important member of the Trauma Team. In most cases, it is a c*ardiothoracic surgeon* who introduces drains into the pleural cavities, and in critical situations must perform thoracotomy (15 cases per year on average) or sternotomy, decompress cardiac tamponade, clamp the thoracic aorta, perform urgent tracheostomy and control bleeding from the arteries, for example carotid or femoral. All the procedures may be done in the surgical admission room. Are young Polish cardiothoracic surgeons properly prepared to treat accident victims effectively? Maybe, we should consider broadening the specialization program for the selected elements of traumatology and a traineeship in the Trauma Team. Do our work organization and the available diagnostic facilities predict a bright future? Is our Trauma Team really a team?

Next year the football fans in Poland will celebrate their feast – Euro 2012. The tragic events in Norway made me realize that nowadays in any part of the world we can expect the catastrophes, which require urgent optimal medical actions under very tough conditions. At the same time, the events confirmed that the best investment is an investment in improving our own skills. Most of the victims admitted to the hospital after the terrorist attack in Norway were 15-25 years old; five of them are still hospitalized at the intensive care unit...

Oslo – Warszawa 15.08.2011

References

1. Gaarder Ch, et al. Traumemanualen. Initialbehandling av den mutitraumatiserte pasient ved Oslo universitetssykehus Ullevål. 6. utgave, april 2011, Oslo universitetssykehus Ullevål.
2. Hillveg JF, Hammer JEH, Østereng OG. Heltene som straffes. Finansavisen 30. juli 2011.