

FEATURES OF MEDICAL AND EVACUATION SUPPORT FOR VICTIMS OF MINE – EXPLOSIVE INJURY

Shnitko S.N.

*Military Medical Faculty at EE "Belarusian State Medical University", Minsk,
Republic of Belarus*

Relevance. The threat of terrorism is acquiring a global character, its methods are diverse and not always predictable, and explosive ammunition is increasingly becoming a means of terrorism.

Thus, as a result of 10 explosions in the terrorist attack at the Atocha railway station on March 11, 2004 (Madrid, Spain), 2,000 people were injured, of which 177 (8.8%) died on the spot. Seriously injured 504 people (25.2%) were taken to 4 hospitals [4].

Purpose. Determine the features of the organization of medical and evacuation support to victims of mine-explosive injury.

Materials and methods. Modern advances in medicine have made it possible to establish that of mine-explosive injury occurs when an explosive device (shock wave; gas-flame jet; primary, secondary, tertiary, etc.) injuring shells; poisoning with toxic products; exposure to sound waves of excessive force and duration; sharp fluctuations in atmospheric pressure; high flame temperature, etc.) with the involvement of organs and body systems in various combinations in the pathological process. This process is qualitatively different from that in polytrauma due to transport, industrial and household (including gas explosions) injuries [1].

Results. When analyzing the literature data, the main differences between explosions in military conditions and terrorist attacks in peacetime are noted. If in military conditions explosions are inflicted by specially designed weapons with a predicted yield of explosive ordnance, then in peacetime explosions are diverse in origin, as are the sources of explosions and the circumstances of explosive wounds. If, in military conditions, an explosion is exposed to a contingent of military personnel, homogeneous in sex and age, who are morally and professionally prepared in advance, and also have personal protective equipment, then in peacetime the impact of the explosion increases the extremeness of the event, creates conditions for panic and the possibility of additional damage, there are no funds protection, and among the victims a significant proportion are women and children. Finally, in a military setting, medical care is provided by military doctors, armed with the provisions of military medical doctrine and well-defined protocols for the treatment of of mine-explosive injury. In peacetime, 'civilian doctors who are not familiar with the principles of of mine-explosive injury treatment provide help. In the pathogenesis of explosive injury, the impact of explosion factors (primary and secondary damage), the propelling effect of the blast wave (tertiary damage), the action of the surrounding objects during the

collapse of buildings, obstacles, etc. (quaternary damage) and the first identified fivefold damage (wounds by fragments body of a terrorist) [2].

When analyzing the nature of injuries during terrorist attacks, it was noted that explosive wounds and injuries were found in 80% of victims, shrapnel wounds - 15-20%, and combined injuries were found in 9-12% of victims. Professor Minnullin I.P. (2008) showed that more than 50% of victims of terrorist attacks were brought to hospitals by eyewitnesses on a passing vehicle without first aid at the scene. In $\frac{3}{4}$ cases, there was no logistics of triage of victims at the scene according to the severity of the condition and routing according to the profiling of the medical institution. It should be noted that in the conditions of a multidisciplinary hospital in peacetime, triage should not end when the victim arrives. Due to the rapidly changing environment, triage should be repeated every 30 minutes, making adjustments to the direction of the victim flow [3].

In case of terrorist attacks, of mine-explosive injury is characterized by 3 phases of emergency situations:

- the phase of the initial chaos (from the moment of the explosion to the arrival of the ambulance service (hereinafter referred to as the EMS), 7-20 minutes): a “wave of self-reversals” who received minor injuries and did not receive help at the prehospital stage (50%).

- the organized phase (work of the ambulance service until the last victim is dispatched, 40-60 min): delivery of the injured by the ambulance with varying severity of injuries with the provision of first aid at the emergency site (30%).

- phase of emergency response (3-24 hours): late treatment of lightly injured with acute stress reactions (20%).

The tasks of the initial chaos phase are: ensuring the safety of rescuers and emergency medical personnel (predicting the second and subsequent explosions, etc.); provision of first aid to the injured by employees of the rescue services (Ministry of Emergency Situations, Internal Troops of the Ministry of Internal Affairs, etc.); knowledge of first aid techniques: preparation of victims for triage and subsequent evacuation by ambulance vehicles.

The tasks of the organized phase are: priority of fast delivery of victims to the destination "SCOOPE END GO"; the priority of providing assistance aimed only at eliminating the life-threatening consequences of wounds and injuries; sorting "alive-dead", the use of the rule of "rolling" evacuation (in the city), the use of sorting scales "START", "SORT", "SALT", etc. during the evacuation (in remote and hard-to-reach places); the deployment of medical teams and formations near the site of the terrorist attack; full-fledged prehospital anti-shock care according to the “Stay and play” principle.

In peacetime organization of medical and evacuation support conditions, medical triage should be aimed not so much at clearly identifying 3-4 groups of victims as at “cutting off” the lightly injured (frightened people) blocking the doctors' efforts to rescue the seriously injured and is divided into 2 groups:

- walking (lightly injured, "frightened" - 50-60% and moderate severity - 10-15%);

- stretchers (moderate severity - 15-20%; severe and extremely severe - 10-15%, as well as agonizing - 3-5%).

Conclusions. It should be noted that medical and evacuation support for victims in the emergency zone is adjusted depending on the specific conditions, but all organizational, tactical and therapeutic measures are based on the modern provisions of the field surgery. Therefore, in case of terrorist acts committed by means of explosions, close interaction of civilian and military doctors is necessary to develop common approaches to urgent treatment of victims with polytrauma.

Literature.

1. Военно-полевая хирургия: учебник / Под ред. С.А.Жидкова и С.Н. Шнитко. Минск: БГМУ, 2008. - 350 с.

2. Подготовка военного фельдшера: учебное пособие / Под ред. С.Н. Шнитко. – Минск: БГМУ, 2014.-668 с.

3. Миннуллин, И.П., Завражнов, А.А., Халилюлин, Р.И. Особенности организации и содержания скорой медицинской помощи при террористических актах, совершенных посредством взрывов // Альманах инст. хирургии им. А.В.Вишневского. - 2018, №1 - С. 72-76.

4. Turgano-Fuente S. et al. //World J.Surg. – 2008, №32. – P.1169-1175.