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EMERGENCY CARE IN LIFE-THREATENING MEDICAL SITUATIONS

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Abstract

The health and life of the patient often depend on the timeliness and quality of medical care for various diseases, traumatic injuries, accidents, poisonings, etc. A significant proportion of patients in need of emergency medical care die due to its untimeliness or inadequacy. Cardiopulmonary resuscitation and possession of modern principles of emergency medical care are relevant for doctors of all specialties. Every doctor is obliged to provide emergency medical care to the patient, regardless of the root cause of the terminal condition, in accordance with modern standards and international protocols.

Keywords: emergency care, cardiopulmonary resuscitation, respiratory disorders

All urgent pathological conditions can cause life-threatening disorders of vital functions (respiration, blood circulation) until they stop. At the same time, emergency care is in the nature of both general (pre-medical) care and specialized care. Cardiopulmonary resuscitation CPR is an urgent complex medical procedure aimed at restoring the body's vital functions and removing it from the state of clinical death. Includes artificial lung ventilation (artificial respiration) and chest compressions (indirect heart massage). The foundations of CPR were laid by the American scientist Frank Pentridge [1].

A significant proportion of patients in need of emergency medical care die due to its untimeliness or inadequacy. It is known that the lack of assistance to the seriously injured within 1 hour after injury increases the number of deaths by 30%, up to 3 hours - by 60%, up to 6 hours - by 90% [2,3].

The health and life of the patient often depend on the timeliness and quality of medical care for various diseases, traumatic injuries, accidents, poisonings, etc. According to the World Health Organization, about 20% of those killed in peacetime accidents could have been rescued if they had received first aid in time [4,5].

Cardiopulmonary resuscitation

Stage of self-help and mutual aid

Recognition of the clinical situation that may lead to the death of the victim (patient), checking the patient's response to painful stimuli [6,7].

Calling and transporting (if necessary) to the injured (sick) medical staff.

Early cardiopulmonary resuscitation, including:

"A". Check the airways and, if necessary, release them from mucus, etc.:

- put the victim on vodka, and lift his chin to prevent blockage of the airways with the tongue or epiglottis;

- if possible, place the unconscious patient on their side to reduce the likelihood of stomach contents entering the bronchi and trachea;

- if a cervical spine injury is suspected, the patient's head should not be moved due to the risk of spinal cord injury.

"B". Carrying out of artificial ventilation of lungs (AVL):

- in the absence of independent breathing, take two slow breaths lasting two seconds with a volume of approximately 800 ml;

- Ventilation is continued, performing 8-12 breaths per minute during the entire time of resuscitation.

"C". Closed (indirect) heart massage:

- the caregiver places the base of one palm in the projection of the lower half of the sternum 2-4 cm above the xiphoid process, the base of the second - on top of the first, fingers open;

- at the same time the palms of both hands should press on the chest of the unconscious. It is necessary to calculate the force of pressure so that it provides a displacement of the sternum by 3-4 cm;

- heart rate - 100-120 beats per minute.

Stage of primary medical care

Paramedics perform resuscitation (except for mandatory actions of items A, B, and C of early cardiopulmonary resuscitation), namely:

"D". Administration of appropriate drugs (depending on the clinical situation, see the next section of the recommendations).

"F". Electrocardiogram registration [8-15].

In the presence of fibrillation defibrillation (cardioversion), defibrillation algorithm.

This stage would involve ventilation through an S-tube or air duct if it were not used in the self-help and mutual aid stage [16-19].

Stage of first aid (expanded resuscitation complex of measures)

Resuscitation measures carried out by a doctor (except for the obligatory implementation of the actions of items A, B, C, D, and F of the cardiopulmonary resuscitation), namely:

assessment of primary resuscitation results and diagnostic information obtained;

- if resuscitation measures lasted more than 20-30 minutes, it is necessary to cool the head (hypothermia);

- under the condition of effective resuscitation it is necessary to organize and conduct intensive care for clinical and post-resuscitation syndromes.

At this stage, if necessary, perform mechanical ventilation after tracheal intubation or through an S-shaped tube or airway, if it was not used in previous stages.

Respiratory disorders

In many cases, there may be a combination of several reasons. Symptoms of respiratory disorders may include dyspnea, shortness of breath, and shortness of breath.

Cyanosis, sweating, motor agitation, and mental retardation usually occur. Hemodynamic disorders are manifested first by hypertension, tachycardia (frequent heartbeats), and then on the background of severe hypoxemia may develop arterial hypotension, and bradycardia (rare heartbeats) [20,21].

The choice of the method of restoring effective breathing depends on the cause and severity of pulmonary ventilation disorders, taking into account the general condition of the victim.

In the event of respiratory disorders in victims, one of the primary tasks is to control airway patency [22].

In the event of a traffic jam, it is important to determine the nature of the obstacle and eliminate it. First of all, it is necessary to use methods to ensure patency of the upper respiratory tract:

- put the victim on his back, lift his chin, put a small roller under his shoulders, push and hold the lower jaw in this position, and tighten the tongue with
- wipe with your fingers or tongue, and remove mucus, blood, and foreign bodies from the mouth and pharynx.

In addition, it is advisable to enter the oral or nasopharyngeal airway so that the end reaches the entrance to the larynx. At the same time, it is necessary to be convinced that the air duct provides free passage of air, and is in such a position to fix it reliably with sticky plaster. TD-1, S-shaped, or endotracheal tubes can be used as an air duct [23,24].

Maintenance of patency of the upper respiratory tract, especially during transportation of the patient, can be provided by his position on the side, with the need for constant monitoring of medical staff for the patient.

In cases where the causes of dangerous respiratory disorders are airway obstruction at the level of the larynx (damage, hematoma, etc.), trachea and large bronchi (aspiration of large amounts of blood, gastric contents) or the above measures were not successful and the victim is at risk of asphyxia, tracheal intubation or tracheostomy should be performed.

Tracheostomy is performed in cases where the attending physician does not have the technique of intubation but knows the technique of tracheostomy, as well

as in some injuries of the maxillofacial area and larynx, when intubation of the trachea may be technically impossible [25].

Oxygen inhalation should be provided in all cases of respiratory disorders or severe circulatory disorders. It is performed through a tightly applied breathing mask or nasopharyngeal catheters inserted at a depth of 7-8 cm from the entrance to the nose. Gas flow - not less than 5 l/min. Excessively deep insertion of catheters is dangerous because they can enter the esophagus, followed by bloating. Oxygen and its mixture with air must be humidified using humidifiers, oxygen inhalers, or special devices.

Occlusion of the open pneumothorax, puncture, and drainage of the pleural cavity in valvular pneumothorax are among the priority measures and are an element [26].

Cardiopulmonary resuscitation and possession of modern principles of emergency medical care are relevant for doctors of all specialties. Every doctor is obliged to provide emergency medical care to the patient, regardless of the root cause of the terminal condition, in accordance with modern standards and international protocols.

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