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ЭЛЕКТР ТОКИДАН ЖАРОҲАТЛАНИШ ВА УНИНГ ИНСОН ОРГАНИЗМИГА ТАЪСИРИ

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ПОРАЖЕНИЕ ЭЛЕКТРИЧЕСКИМ ТОКОМ И ЕГО ВЛИЯНИЕ НА ОРГАНИЗМ ЧЕЛОВЕКА

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Резюме. Ушбу мақолада электр токининг инсон организмига таъсир қилиш механизми, электр токининг биологик таъсири, клиник ва биологик ўлим қўринишлари, электр токидан ҳимояланиш усуллари тўғрисида маълумот берилган.

Калит сўзлар: волта ёйи, диелектрик қўлқоп, электр изоляция.

Abstract. In this article is presented information about the electric current to the human body, mechanism of action, biological effects of electric current, and biological mortality, methods of protection against electric current.

Keywords: voltage arc, dielectric glove, electrical insulation.

Due to the widespread use of electricity in industry, accidents that can occur under the influence of electricity and their prevention are becoming important issues. The most dangerous aspect of exposure to electric current is that it is not possible to detect this danger beforehand.

Thermal (i.e.heat) electrolytic and biological effects are observed in the human body from electric current. The thermal effects of electric current are observed in some parts of the human body as burning, heating of blood vessels, nerves and cells. The electrolytic effect is understood to be a condition that causes changes in the physical and chemical properties of the blood, as a result of the breakdown of salts in the blood cells. In this case, the electric current can affect only certain parts of the body without crossing the central nervous system and cardiovascular system.

The biological effects of electric current is a characteristic feature of a living organism. As a result of this effect, the living cells in the human body are excited due to the sharp contraction of muscles, which mainly disrupts the biological processes in the body. That is the human body is mainly controlled by bioelectric currents. At the some time as a result of exposure to high voltage electric current from the

external environment the regime of biocurrents is disrupted and, as a result, a state of electric shock occurs in the human body. That is, in an uncontrolled organism, some functions of vital activity fail: respiratory deterioration circulatory system failure and so on.

Due to the diversity of the effects of electric current on the human body, it can be divided into two groups: local electric shock and electric shock. Local exposure to electricity can cause burns, electrical marks, and metallization of the skin. Electrical burns usually occur when a voltage arc forms between the body and a conductor. Such burns can vary depending on the voltage across the conductor. Mild burns are limited to inflammation, moderate burns can cause blisters, and severe burns can turn cells and skin into charcoal, leading to serious complications. Electrical marks are characterized by the appearance of a clear gray or light yellow 1-5 mm diameter mark on the upper part of the skin. Such signs are usually not dangerous. When the skin becomes metallized, the metal, which is usually melted and broken down into fine particles, penetrates into the skin. This also happens when an electric arc is generated. Over time, this skin peels off and leaves no complications.

Electric shock is divided into four levels:

1. As a result of a sharp contraction of the muscles, the person loses the current and does not lose consciousness.

2. The person loses consciousness as a result of a sharp contraction of the muscles, but the heart and respiratory function function.

3. Loss of consciousness, respiratory or cardiac arrest.

4. Clinical death, in which a person shows no signs of life.

Clinical death is the interval between life and death, when a person lives for a certain period of time due to internal possibilities. At this time, it has no signs of life: no breathing, no blood circulation, no external influences, no pain, dilated pupils and no light. However, during this period, life in it is not completely extinct, certain metabolic processes continue in the cells, and this is enough for the organism to continue its minimum life activity. To do this, it is possible to bring back to life some parts of the organism that have lost their vital functions due to external influences. Clinical death lasts 5-8 minutes. In the absence of any help, the cells in the cerebral cortex first break down and the clinical death progresses to biological death.

Biological death is an irreversible process characterized by the complete cessation of biological processes in the body, as well as the breakdown of protein in the body. This occurs after the time of clinical death. The effect of current on the human body depends on several factors. One of the main factors is the duration of exposure to current, ie the longer a person is exposed to electricity, the more damage he will suffer. The second factor is the individual characteristics of the human body, as well as the type and frequency of the current. The known resistance of the human body to the action of current, as well as the intensity of the current determines the degree of effect, because the resistance of the human body does not change, as a result of the increase in voltage: the amount of current flowing through the body increases.

The known resistance of the human body to the effects of current, as well as the intensity of the current, determines the degree of effect, because the resistance of the human body does not change, but increases as a result of voltage: the amount of current flowing through the body increases. The resistance of the human body is taken as the sum of the resistance of the skin and the resistance of the internal organs. The skin is highly resistant, mainly because it is made up of hard layers of dry dead cells, and it represents the resistance of the human body as a whole. The resistance of the internal organs of the body is not great. While dry, undamaged human skin has a resistance of 2,000 to 20,000 Ohms and higher, moist, damaged skin has a resistance of 40 to 5,000 Ohms, which is equal to the resistance of the internal organs.

In view of the above, the resistance of the human body is generally assumed to be 1000 Ohms for technical calculations. The amount of current through the human body determines its complication, that is, the greater the current flowing, the greater its complication. When 0.6-1.5 mA of 50 g of industrial electric current flows through the human body, he senses it and this amount of current is called the electric current at the sensoru limit.

If the amount of current flowing through the human body is 10-15 mA, then the muscles in the body contract irregularly and the person loses the ability to control parts of his body, that is, he cannot open his paws while holding an electric wire, as well as take the electric wire can not throw. Such a current is called a limit current. If the amount of current is 25-50 mA, then the effect of the current affects the chest, resulting in difficulty in breathing. If the effect of the current lasts for a long time, that is, if it lasts for a few minutes, then the person may die as a result of respiratory arrest.

The care provided to a victim of electric shock before the arrival of a medical professional is divided into two parts: recovery from electric shock and first aid. Current recovery, in turn, can take several forms. The easiest and most convenient way is to turn off the power to that part of the electrical device. If this is not possible (for example, if the circuit breaker is far away), electrical equipment with a voltage of less than 1000 V may be cut with wooden axes or the victim's clothing may be dry. If the voltage is more than 1000 V, use dielectric gloves and electrical appliances with strong electrical insulation. First aid for an electrocuted person depends on his condition. If the victim is not unconscious, he or she should be reassured, waited for a doctor to arrive, or rushed to a medical facility. If the person is unconscious under the influence of electricity but his respiratory and cardiac systems are functioning, he should be placed in a dry and comfortable place, his belt and collar should be loosened, and fresh air should be provided. Smelling nasal spray, spraying water on the face, and rubbing the body and hands give good results. If the injured person has difficulty breathing, is trembling, but has a relatively good heart rate, he or she should be given artificial respiration. In case of clinical death, in addition to artificial respiration, the upper part of the heart should be massaged.

Artificial respiration should begin as soon as the injured person is rescued from the effects of the current. Artificial respiration is a so-called "mouth-to-mouth" procedure in which the caregiver inflates his or her lungs and pushes the injured person through his or her mouth. The air from the human lung is found to contain enough oxygen for the second lung to function. The injured person is placed on his back, his mouth is opened and cleared of foreign objects. To open the airway, he raises his head with

one hand, pulls his mouth with his other hand, and brings his mouth to a line with his neck. The victim should be blown through the mouth. The caregiver should cover the victim's mouth completely with his mouth and cover his nose with his face or paws. The caregiver then raises his head and inflates his lungs again. About 10-12 blows per minute can also be done with gauze, a towel and a tube. Even if the injured person resumes breathing independently, artificial respiration should be continued until the patient regains consciousness.

External cardiac massage is performed to artificially restore blood circulation in the body of the injured person. After passing from the abdomen to the chest, place 2 fingers on the top of the massage, place the hands at right angles to each other, and the injured person presses the chest with a force of 15-25 kg. Pressing should be with a sharp force of 1 second per second. In this case, the chest should decrease inwards by 3-4 cm, and this is continued in accordance with the rhythm of the heartbeat. Massage should be combined with artificial respiration. If the caregiver is alone, he or she should press the chest 15 times after inflating twice. The victim's pulse can be checked to make sure the heartbeat is independent. To do this, the pulse is tested by stopping the above tasks for 2-3 seconds.

The pursuit of a goal that is important to one's life, the ability to not hesitate in difficult situations and not to lose the goal, and the ability to organize one's activities properly, lead to high self-esteem and good health. After all, the pursuit of a goal is the primary driving force that ensures a person's health. A person can live happily only if he is in good health. After all, only if everyone understands that the preservation of such a valuable asset as health is a guarantee of a peaceful life, it will be possible to prevent the emergence of disease and its associated problems. Therefore, everyone should be responsible for the health of themselves, their families and loved ones. It is important to remember that prevention is easier and more effective than cure.

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Резюме. В данной статье представлена информация о механизме действия электрического тока на организм человека, биологическое действие электрического тока, клинических и биологических проявлениях смерти, способах защиты от электрического тока.

Ключевые слова: напряжение дуги, диэлектрическая перчатка, электроизоляция.