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Annotation: In the article, considering natural disasters, a sudden phenomenon of nature, accompanied by human casualties and destruction of material values that arise from natural disasters that have occurred in various countries of the world, the authors determine the enormous damage caused. In these conditions, the main measures of the medical and tactical characteristics of the lesions on the example in the conditions of earthquakes, before determining the degree of natural disasters and their types. For example, among natural disasters, earthquakes occupy a leading place in terms of the severity of health consequences, determined by their significant frequency, and mass losses among the population. Analyses of the countries where the most severe earthquakes have occurred are being conducted. In this regard, the authors suggest that to eliminate the consequences of devastating earthquakes promptly, medical personnel need to organize medical support for the population in the aftermath of an earthquake. When eliminating the medical and sanitary consequences of devastating earthquakes, as a rule, a system of staged treatment is used with the evacuation of the affected by appointment to specialized (profiled) medical institutions capable of providing comprehensive medical care and treatment to the victims. The organization of medical evacuation support should be carried out by the forces and means of the facility, local and territorial levels of medical and nursing medical complexes (VSMK), and the territory and facilities which were in the earthquake zone.

Keywords: catastrophe, consequence, earthquakes, human, element, damage, medical-tactical, psychological assistance, medical services.

**EXPERIMENTS AND ORGANIZATION OF MEDICAL AND SANITARY PROVISION OF THE POPULATION IN THE AFTERMATH OF EARTHQUAKES**

Analyses of the historical consequences of natural disasters and earthquakes.

A natural disaster (natural disaster) is a sudden natural phenomenon accompanied by human casualties and the destruction of material values.

Over the past 20 years of the last twentieth century, only natural disasters that occurred in various countries of the world claimed the lives of more than 3 million people, and injured and maimed over 800 million people, the cost of the damage caused, according to experts, exceeded $ 100 billion.

The territory of many countries is exposed to a wide range of natural phenomena and processes of geological, hydrological, and meteorological origin, as well as natural fires. The greatest danger from the considered natural disasters are earthquakes, floods, avalanches, and forest fires.

The main measures of medical and tactical characteristics of lesions for example in earthquake conditions, it is necessary to determine the degree of natural disasters and their types.

An earthquake is a special phenomenon of nature, manifested in the form of tremors, shocks, and vibrations of the earth caused by natural processes occurring in the earth's crust.

In the structure of the classification of disasters, earthquakes are tectonic, volcanic, landslide and in the form of sea quakes. They usually cover vast territories. The number of shocks and the time intervals between them can be very different. Every year there are about 100 thousand tectonic earthquakes on the planet, of which people feel about 10 thousand, and about 100 have a catastrophic character.

The destructive effect of an earthquake is similar to the effect of the shock wave of a nuclear explosion. The part of the earth from which the waves originate is called the center, and the point located above it on the earth's surface is called the epicenter of the earthquake.

Among natural disasters, earthquakes occupy a leading place in terms of the severity of health consequences. Such an assessment is determined by their significant frequency, and mass losses among the population. So, in the XX century, more than 1.5 million people died as a result of earthquakes on the globe, and the damage caused was estimated at $ 10 trillion.

During this period, the following most severe earthquakes occurred:

• In Japan on September 1 1923, on the island of Honshu, where 143 thousand people died and went missing within a few seconds;

• In China on July 28 1976, near Tangshan, where 98% of residential and 90% of industrial buildings were destroyed, 242 thousand people died, and 773 thousand people were seriously injured;

• In Armenia, on December 7, 1988, an earthquake covered 40% of the territory with a population of about a million people. 21 cities were affected (especially Spitak, Leninakan, Kirovakan, Stepanavan),

342 villages, of which 58 were destroyed. More than 25 thousand people were killed and 32.5 thousand people were injured.

The main active seismic areas are the North Caucasus, the Baikal Region, Primorye, Sakhalin, Kamchatka, and the Kuril Islands, where more than 100 cities and settlements are located, in which more than 20 million Russians live.

In general, about 20% of the territory of the Russian Federation is subject to seismic effects with an intensity of more than 7 points and more than 5% occupy extremely dangerous 8-9-point zones.

As can be seen, earthquakes, as a rule, cause massive sanitary losses. Most of those affected receive various traumatic injuries, often closed and combined. The possibility of combined injuries resulting from the simultaneous destruction of buildings, the occurrence of fires, damage to chemically hazardous and explosive objects, and accidents at other enterprises are not excluded. The population remains without homes, as most buildings are being destroyed, and staying in preserved buildings is dangerous due to repeated aftershocks. Medical facilities, water, and sewer systems are damaged, electricity is cut off. The lack of basic sanitary and hygienic conditions leads to the danger of various infectious diseases, and epidemics.

The magnitude of sanitary losses during earthquakes depends on the strength and area of the disaster, the population density in the earthquake area, the degree of destruction of buildings, suddenness, and several other factors. The extremities are most often affected by earthquakes. Almost 50% of those affected were diagnosed with bone damage. Soft tissue bruises and multiple injuries of various localization occupied a large proportion.

In addition to injuries sustained as a result of landslides, the collapse of walls and roofs of buildings (10%), from falling structures, and debris of buildings (35%), in 55% of cases injuries were received due to improper behavior of the affected, unreasonable actions caused by fear and panic.

From the standpoint of the structure of earthquake losses, large fluctuations and variations are characteristic. Up to 40% of all severely affected people may die under the rubble during the first 6 hours, 60% - on the first day, almost all - within 3 days. On the 4th day, victims with moderate and mild injuries begin to die, 95% of them die on the 5th-6th day.

In those affected with mild and moderate injuries, trapped under the rubble, death occurs in most cases as a result of dehydration and hypothermia.

During an earthquake, the affected often (from 3.8 to 29% of cases) develop a syndrome of prolonged crushing (crash syndrome).

A large number of people had various mental disorders. Thus, acute reactive states in the city of Skopje (1963) were noted in almost half of the population. In 20% of residents, these reactions lasted up to 2-3 hours, in 70% - from 2-3 hours to 1-5 days, in 5% - from 5 days to several months.

A significant part of the population needs sedatives and other sedatives, as well as medical care in connection with other diseases (for example, heart failure, angina pectoris, myocardial infarction, hypertensive crisis, etc.).

The medical and tactical situation is further complicated by the fact that medical and preventive institutions are out of order and there are losses among medical personnel. Thus, during the earthquake in Tashkent, 118 out of 140 medical institutions were damaged, while 22 were completely out of order. Of the 51 outpatient clinics in the city, 37 have completely or partially stopped working in their buildings. During the earthquake in Armenia, 250 medical institutions were destroyed, 24 out of 36 hospitals were destroyed and 8 partially; 97 polyclinics were in an emergency condition. The losses of medical personnel in some destroyed cities amounted to about 70%.

If an earthquake engulfs a city, then in this case containers with hazardous chemicals may collapse, and secondary foci of chemical contamination may occur. In such a situation, mass poisoning is very likely, for example, with ammonia, chlorine, nitrogen oxides, and other aggressive substances.

During underwater and coastal earthquakes, sea waves - tsunamis - arise as a result of shifts up and down sections of the seabed. The speed of their spread ranges from 30 to 100 km / h, the height in the area of occurrence is up to 5 m, and off the coast - from 10 to 50 m or more. Tsunamis produce devastating destruction on land, accompanied by the destruction of settlements and massive human losses.

A significant part of those affected is under the rubble. This circumstance, on the one hand, leads to a certain dispersion of the flow of the affected and a decrease in the need for medical forces and means, and on the other hand, determines the greater urgency in providing medical care after the removal of the affected from the rubble. At the same time, immediately after the earthquake, a significant number of affected people seek medical help.

It is known that if rescuers enter the earthquake zone during the first 3 hours, they can save 90% of the survivors from death, after 6 hours the number of rescued can be 50%. In the future, the chances of rescue decrease, and after 10 days there is no point in carrying out rescue work. The earthquake in Armenia occurred on December 7, 1988. The first groups of rescuers were able to reach the disaster zone only on the evening of December 10. Before, only military units and the police carried out rescue work, and the planned work of rescuers began on the morning of December 12.

At the same time, the situation in the earthquake center can lead to losses among rescuers, including medical workers. It should be noted that it is impossible to work in a disaster zone for a long time without carrying out a set of appropriate protective measures. People cannot withstand prolonged mental stress. According to the experience of rescuers in Spitak, it is known that after 2 days the rescuers were disturbed by sleep: many saw the same dreams - falling houses, sobbing women, mountains of corpses. It is obvious that such rescuers also need not only medical and psychological assistance but also the medical and psychological correction of impaired functional states.

**Ways to solve problems**

To eliminate the consequences of devastating earthquakes promptly, medical personnel needs to organize medical support for the population in the aftermath of an earthquake.

That is, when eliminating the medical and sanitary consequences of destructive earthquakes, as a rule, a system of staged treatment is used with the evacuation of the affected by appointment to specialized (profiled) medical institutions capable of providing comprehensive medical care and treatment to the victims.

In the center of an earthquake, first aid, as a rule, is provided to the affected in the order of self-and mutual assistance, as well as by the personnel of rescue units. The maximum amount

of first aid work for the affected occurs immediately after an earthquake. In the initial period (for several hours), first aid to the affected and their evacuation from the hearth is quite spontaneous.

As a rule, until the moment when it becomes possible to receive first aid in an organized manner, some of the affected people are evacuated independently or with the help of other people (on preserved or arrived vehicles) outside the hearth. For this reason, in the course of organized first aid among those who remain in the hearth, the proportion of those affected with severe and moderate injuries increases.

The organization of medical evacuation support is carried out by the forces and means of the object, local and territorial levels of the VSMK, and the territory, and objects which were in the earthquake zone.

The provision of first medical, qualified and specialized medical care to those affected by an earthquake is carried out by all medical and preventive institutions located in the administrative territory where the earthquake occurred, regardless of their departmental affiliation.

With the most severe health consequences of earthquakes, the capabilities of existing medical institutions in or near the earthquake zone may be insufficient. In this case, there is a need to demand additional forces and resources from regional and even federal government bodies. The formation or institution involved in the elimination of the medical and sanitary consequences of an earthquake performs only regulated measures of one type of medical care. Medical and nursing teams and emergency medical teams, as a rule, provide pre-medical care and perform first aid measures.

Medical centers, in most cases having a surgeon in their composition, along with first aid, perform some emergency measures of qualified medical care. Medical institutions that receive victims from the hearth, as a rule, provide qualified medical care and carry out some activities

specialized medical care. This provision is taken into account when determining the composition and equipment of formations and institutions of the disaster medicine service.

When eliminating the medical and sanitary consequences of earthquakes with an intensity of 5 points, in most cases it is possible to maintain the organization of medical and preventive maintenance that exists under normal conditions.

With a 6-point earthquake, it may be necessary to organize and perform several additional medical evacuation measures at the expense of the forces and means of the disaster medicine service at the territorial level.

In case of an earthquake of 7-8 points, the basic provisions of the organization of medical evacuation support, characteristic of an earthquake of 6 points, retain their validity, at the same time there are also significant features.

Various injuries, up to fatal, in an earthquake, every 7-10 the resident receives 7 points, and every 3-4 the resident receives 8 points. Under these conditions, it is hardly possible to attract a significant part of the residents who were not injured in the earthquake to provide first aid.

The provision of first medical and specialized medical care to the affected with the involvement of the forces and means necessary for this is carried out within two bitches.

In case of an earthquake with an intensity of 9 points or more, medical institutions located in the earthquake zone will be destroyed or lose their operability. In these conditions, it becomes necessary to nominate formations of the disaster medicine service at the territorial, regional, and federal levels and deploy them in the earthquake zone to provide first medical, qualified and specialized medical care to the affected. Hospital treatment is carried out in medical institutions located at a considerable distance from the earthquake zone, with the involvement of air transport to evacuate the affected.

The features of the evacuation of victims from the earthquake are as follows:

• Helicopter landing pads are equipped near all medical centers and medical institutions intended for victims;

• if the helicopter pad is located at a distance from the medical facility, a medical center should be deployed at the airfield;

• medical distribution points are organized on the evacuation routes of victims by road transport.

Before loading the affected persons into vehicles in the earthquake focus, their condition is monitored and the necessary emergency medical care measures are carried out.

On the evacuation routes from the hearth before the first stage of medical evacuation, medical control (distribution) points are created, which should ensure the provision of emergency medical care to those in need (as a rule, in the amount of first or first aid) and determine the directions of movement of vehicles with the affected.

Evacuation receivers are deployed in the waiting areas for the evacuation of groups of the affected (airfields, landing pads, piers, collection points during evacuation by convoys of motor transport), which should ensure the provision of first aid to those in need.

To ensure the evacuation of the affected to medical institutions located at a considerable distance from the earthquake source, it is necessary to organize medical support.

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