https://doi.org/10.33266/2070-1004-2022-4-68-72
УДК 355.357:614.88

Обзорная статья

ОСОБЕННОСТИ СОВРЕМЕННЫХ ЛОКАЛЬНЫХ ВОЙН И ВООРУЖЕННЫХ КОНФЛИКТОВ И ПРОБЛЕМЫ ОКАЗАНИЯ МЕДИЦИНСКОЙ ПОМОЩИ НАСЕЛЕНИЮ В ДОГОСПИТАЛЬНОМ ПЕРИОДЕ

Л.В.Писаренко[1], С.А.Гуменюк[1], В.И.Потапов[1]

[1] ГБУЗ особого типа г. Москвы «Московский территориальный научно-практический центр медицины катастроф (ЦЭМП) Департамента здравоохранения г.Москвы, Москва, Россия

Резюме. *Цель исследования* – на основе анализа научных публикаций изучить особенности современных локальных войн и вооруженных конфликтов, их влияние на структуру санитарных и безвозвратных потерь среди населения, а также определить основные проблемы организации и оказания медицинской помощи раненым, больным и пострадавшим в этих условиях и наметить возможные пути их решения.
Материалы и методы исследования.
Материалы исследования – отечественные и зарубежные публикации, в которых анализируется ведение современных локальных войн и вооруженных конфликтов и оценивается их поражающее влияние на жизнедеятельность и жизнеспособность населения.
Метод исследования – обзорно-аналитический.
Результаты исследования и их анализ. Освещены особенности современных локальных войн и вооруженных конфликтов, их влияние на структуру боевых и не боевых потерь среди населения. Представлена недостаточная эффективность действующей системы проведения лечебно-эвакуационных мероприятий по неотложным и экстренным показаниям в догоспитальном периоде, особенно в условиях ведения боевых действий. Определены как преимущества, так и проблемы широкого и эффективного использования возможностей, сил и средств Службы медицины катастроф (СМК) и скорой медицинской помощи (СМП) по оказанию первой и неотложной и экстренной медицинской помощи населению в районах ведения боевых действий и в чрезвычайных ситуациях (ЧС). Предложен вариант объединения в догоспитальном периоде сил и средств медицинской службы гражданской обороны (ГО), СМП и СМК в единую универсальную отраслевую систему под названием «оперативно-тактическая медицина» с целью оптимизации и повышения эффективности оказания первой и медицинской помощи населению в условиях как повседневной деятельности, так и в экстремальных условиях современных локальных войн, вооруженных конфликтов и других чрезвычайных ситуаций

Ключевые слова: военно-полевая медицина, вооруженные конфликты, догоспитальный период, локальные войны, медицинская служба гражданской обороны, население, первая помощь, скорая медицинская помощь, Служба медицины катастроф, тактическая медицина, чрезвычайные ситуации, экстренная медицинская помощь

Конфликт интересов. Авторы статьи подтверждают отсутствие конфликта интересов

Для цитирования: *Писаренко Л.В., Гуменюк С.А., Потапов В.И.* Особенности современных локальных войн и вооруженных конфликтов и проблемы оказания медицинской помощи населению в догоспитальном периоде // Медицина катастроф. 2022. №4. С. 68-72 https://doi.org/10.33266/2070-1004-2022-4-68-72

https://doi.org/10.33266/2070-1004-2022-4-68-72
UDC 355.357:614.88

Review article

PECULIARITIES OF MODERN LOCAL WARS AND ARMED CONFLICTS AND PROBLEMS OF MEDICAL CARE IN PREHOSPITAL PERIOD

L.V.Pisarenko[1], S.A.Gumenyuk[1], V.I.Potapov[1]

[1] Moscow Territorial Scientific and Practical Center for Disaster Medicine (TSEMP) of the Moscow City Health Department,Moscow, Russian Federation

Summary. *The aim* of the study is to investigate the peculiarities of modern local wars and armed conflicts, their influence on the structure of sanitary and non-return losses among population on the basis of scientific publications analysis. It also aims to define the principal problems of organization and rendering medical aid to wounded, sick and injured under these conditions and to outline the possible ways of their solution.
Materials and research methods
Materials of research — domestic and foreign publications, which analyze modern local wars and armed conflicts and assess their striking effect on vital functions and vitality of population.

Method of research — review-analytical.
Results of the study and their analysis. The features of modern local wars and armed conflicts, their impact on the structure of combat and non-combat losses among the population are highlighted. The inefficiency of the present system of medical and evacuation measures for urgent and emergency medical indications in the prehospital period was presented, especially in the conditions of combat operations. There were defined both advantages and problems of wide and effective application of capabilities, forces and means of the Disaster Medicine Service and ambulance service for rendering first and medical (emergency and urgent) aid to the population in regions of military actions and in extreme situations. A variant has been suggested to combine forces and means of medical service of civil defense, ambulance and emergency medical service into a united universal branch system called "operative-tactical medicine" aimed at optimization and increase of effectiveness of medical aid rendering to population in prehospital period both in conditions of everyday activity and in extreme conditions of modern local wars, armed conflicts and other emergency situations.
Key words: *ambulance service, armed conflicts, Disaster Medicine Service, emergencies, emergency medical aid, first aid, local wars, medical service of civil defense, military field medicine, population, prehospital period, tactical medicine*

Conflict of interest. *The authors declare no conflict of interest*

For citation: Pisarenko L.V., Gumenyuk S.A., Potapov V.I. Peculiarities of Modern Local Wars and Armed Conflicts and Problems of Medical Care in Prehospital Period. *Meditsina Katastrof* = Disaster Medicine. 2022;4:68-72 (In Russ.). https://doi.org/10.33266/2070-1004-2022-4-68-72

Контактная информация:
Писаренко Леонид Васильевич – докт. мед. наук, профессор; ведущий научный сотрудник научного отдела Московского территориального научно-практического центра медицины катастроф (ЦЭМП) Департамента здравоохранения г.Москвы
Адрес: : Россия, 129010, Москва, Большая Сухаревская пл., д. 5/1, стр. 1
Тел.: +7 (985) 305-80-60
E-mail: p8060@bk.ru

Contact information:
Leonid V.Pisarenko – Dr. Sc. (Med.), Professor; Leading Researcher of Moscow Territorial Scientific and Practical Center for Disaster Medicine (TSEMP) of the Moscow City Health Department
Address: 5/1, bldg. 1, Bol'shaya Sukharevskaya square, Moscow, 129010, Russia
Phone: +7 (985) 305-80-60
E-mail: p8060@bk.ru

Introduction

The experience of local wars and armed conflicts of the last decades shows that the main ways of using military groups are special military operations, simultaneous and successive sudden combat strikes, airmobile raids, sabotage armed attacks of small detachments on separate settlements, garrisons, airfields and other military and civil objects. The actions are performed without clearly defined front lines and observing any rules [1].

Such combat operations are characterized by: high air and ground maneuverability, tactical and firing independence of units and subunits, intensive and high-precision degree of sustained long-range missile strikes on the centers of accumulation of human force, combat and special equipment and armament, on logistical objects of supply and maintenance, supply and evacuation routes, as well as by a real risk of catastrophic damage to highly dangerous industrial objects of military and civilian purposes on enemy territory [2].

With the emergence of local and internecine conflicts, as well as various interstate wars in theaters of war, beginning in 1847, thanks to the Russian surgeon N.I. Pirogov, field medicine was transformed into military field medicine [3].

In the concepts of that time, military-field medicine was considered as a branch of medicine dealing with the treatment of traumas and diseases characteristic of war conditions, in the field, in the absence of a hospital treatment base, and was originally intended to provide care to the personnel of military units.

It was N.I. Pirogov who created and described the system of stage-by-stage treatment of the wounded and sick, he pointed out the great importance of providing first aid to the wounded on the battlefield. He brought nursing and medical assistance closer to the wounded, created the first field "dressing stations", the concept of obligatory medical sorting of the wounded and sick in the field according to the severity of their condition, by sequence and volume of medical aid rendered to them, etc.

Later on, this branch of military medicine was intensively studied, developed and effectively introduced in Russia as well as in the foreign countries. On this basis, the Disaster Medicine Service was established in the Russian Federation.

In contrast to civil health care, military field medicine has essential peculiarities that consist in: special organizational and tactical measures in the absence of adapted premises for rendering medical aid; shortage of medical specialists; great number of casualties and simultaneous need in rendering medical aid; medical triage according to the severity of the state of wounded and sick; necessity of medical reconnaissance; timeliness and quality of stage evacuation measures. The study of these differences and the in-depth development of a system of solutions to the above problems made it possible during the Great Patriotic War of 1941-1945 to achieve a ratio of 1:3 between dead and wounded (sick). It should also be noted that of the 27 million dead during the war, 9 million were personnel

of the USSR Armed Forces, and 18 million were civilians [4].

The aim of the research is to study the peculiarities of modern local wars and armed conflicts and their influence on the structure of sanitary and non-return losses among the population on the basis of scientific publications, as well as to define the main problems and to outline the possible ways of their solution on organization and rendering medical aid to the wounded, sick and injured in these conditions.

Materials and methods of research. The available domestic and foreign publications analyzing the conduct of modern local wars and armed conflicts as well as their striking effect on the vital functions and vitality of the population were studied.

Results of the study and their analysis. Despite the fact that the Great Patriotic War ended in 1945, the Second World War is still considered unfinished, as it has moved to a new level and now has a multiple-local character. The mass character of modern local wars and armed conflicts indicates that the number of people involved in military conflicts is only increasing, as the struggle for spheres of political and economic influence and material resources is constantly building up [2].

While in the 22 years (1918-1939) before World War II 59 wars and military conflicts were fought, in the same period after World War II (1945-1967) almost twice as many were fought. While in the years of the World War II persons from the population accounted for 50% of the victims of military actions, during the aggression in Vietnam it was 70%, and in 1982 in Lebanon during the Israeli aggression this figure rose to 90% [1]. This demonstrates that in modern wars without rules, civilian population suffers most. The main reason for the high fatality rate among civilians is the lack of means of individual and collective protection of people and timely first aid and medical assistance, especially pre-medical assistance.

During the wars of the USA and other NATO countries they destroyed not only facilities, but also the population of Yugoslavia, Iraq, Libya, Afghanistan, Syria, Yemen.

As of June 2011, during the 10 years of the U.S. war in Afghanistan 14,000 to 34,000 civilians were killed [5].

The main reasons for the high death rate of civilians in modern military conflicts is the lack of timely and comprehensive medical care, especially in the prehospital period. All this requires additional and coordinated actions to save the civilian population in the context of the limited capabilities of the stage-evacuation forces in modern war [1].

In recent decades in the armies of NATO countries, and somewhat later in special units of the Armed Forces of the Russian Federation, the service of "tactical medicine" also began to develop intensively.

Tactical Combat Casualty Care (TCCC) is a combination of medical and tactical interventions on the battlefield and during the whole prehospital period of medical evacuation, aimed to eliminate life-threatening conditions, to prevent severe complications and to maintain vital functions of the wounded during evacuation [6-8].

Tactical wound care in combat is becoming the standard of tactical wound care in the U.S. Department of Defense and is the only standard of care endorsed by both the American College of Surgeons and the National Association of Emergency Physicians for the treatment of the wounded in tactical settings [9].

Tactical medical care for the wounded in combat includes three basic steps:

- Assisting under enemy fire, which is provided at the scene of the wound when the medic and wounded person are under enemy fire. The available medical equipment is limited to that available to each operator and medic. This step consists in a quick assessment of the condition and in tourniquet application to any major bleeding;

- Tactical field assistance begins as soon as the victim is evacuated from the area. Medical equipment will continue to be limited to that carried to the field by mission personnel. The time for further evacuation can range from a few minutes to many hours. Medical care during this phase may include advanced airway treatment, intravenous therapy, etc. The treatment given will depend on the skill level of the provider as well as the materials available. At this point, the paramedic/medic will decide on triage and medical evacuation;

- Tactical evacuation assistance (TACEVAC) is provided during the medical evacuation of the casualty to a higher echelon of medical care. Any additional personnel and medical equipment prepared in advance will be available at this stage [6, 8, 10, 11].

Since "90% of combat deaths occur on the battlefield before the casualty reaches a medical facility" (Col. Ron Bellamy) TCCC emphasizes medical training for serious bleeding and airway complications such as tension pneumothorax, which has resulted in a 9% reduction of deaths [10, 12].

Tactical medicine involves the availability of medical supplies, materials and equipment to provide emergency care for acute conditions. The complexity of the work of the specialists delivering aid to the wounded and injured provides for the necessity of performing complex medical manipulations in the extreme conditions of the emergency situations and in the territory of combat operations. Paramedics and military doctors are engaged in these activities [13].

To provide quality medical care in extreme conditions, paramedic needs not only professional knowledge, but also practical skills and special equipment. This allows for minimal resuscitation measures and for a limited amount of basic diagnostic and treatment procedures in these conditions, especially when there is a shortage of medical personnel.

To equip the medical staff of rescue teams and individual multifunctional medical teams the following woul

be required: development of portable therapeutic-diagnostic equipment and tools, individual first-aid kits and medical packs; radio and telecommunications equipment; special small-sized unmanned aerial vehicles; robotic unmanned reconnaissance and medical and evacuation equipment, including protected wheeled, tracked, high-speed vehicles and aircraft, and many others.

In order to solve these and other similar tasks it would probably be necessary, if not a partial reform, then a purposeful reorganization and improvement of the system of organization and rendering emergency and urgent medical care to the population in prehospital period on the basis of unification of the main goals and tasks.

Conclusion

Modern wars and armed conflicts without rules are characterized to a greater extent by the occurrence of mass medical and irretrievable losses among the civilian population, which is associated with the use of modern automatic, multi-caliber, high-precision weapons, rocket and barrel artillery systems based on sea, land and air carriers and is characterized by a high degree and scale of military destruction of both human life and equipment, as well as of territory and infrastructure located on it.

During armed conflicts, innocent civilians, individual civilians who take no part in the hostilities, suffer from severe consequences of war.

Despite international law, aggressors in the course of warfare violate all international humanitarian norms and rules, in particular they use physical or moral force, causing physical suffering, acts of violence and loss of life; they use methods of collective punishment, hunger terror, robbery, hostage-taking etc.

Article 51 of Additional Protocols IV (1977) to the Geneva Conventions of 1949 states that "the civilian population as such, as well as individual civilians, shall not be the object of attack". The reason for the emergence of this norm is the result of analysis of modern local wars and armed conflicts, indicating an increase in the scale of civilian casualties in hotbeds of destruction.

Justifying the necessity of adoption of this norm and referring to historical experience, a number of authors noted that if in the First World War military losses were 95% and civilian losses were only 5%, then in the Second World War military losses were reduced to 52%, while civilian losses rose to 48%. The same trend was observed further. Thus, during the Korean War (1950-1953) military casualties were 16%, civilian casualties were 84%; during the American aggression in Vietnam (1964-1975) — up to 10 and 90% respectively, and during the Israeli aggression in Lebanon number of civilian casualties reached 95%. And, as a rule, these casualties were predominantly of a mass nature.

It is obvious that in order to preserve life and health of civilian population during combat operations with modern high-performance weapons, the current system of emergency and urgent medical care becomes, the least, ineffective.

Performing the same organizational and functional tasks of providing emergency and urgent medical care to population in prehospital period, modern medical service of our country has divided directions of its practically single-type branches and structural subdivisions of prehospital period by departmental and narrow profile principle, which only contributes to narrowing outlook of medical personnel, confusing their work, increasing staff numbers, creating problems with salaries, provoking psychological burning out of personnel.

Currently, it is necessary to focus on the development of portable treatment-diagnostic equipment and tools, individual first-aid kits and medical kits; radio- and telecommunication means; special small-sized unmanned aerial vehicles, robotic unmanned reconnaissance and medical evacuation equipment, including protected wheeled, tracked, high-speed vehicles and aircraft and many others.

There is a problem of training for solving medical tasks in the field of IT-technologies and cyber-technological products in order to deliver medical equipment to the centers of mass sanitary losses and to optimize medical evacuation activities in conditions of permanent isolation of the population.

Insufficient attention is paid to first aid and primary prehospital medical care on site as it is the main basis of life-saving and health preservation. The civilian population, as a rule, does not have knowledge and skills of first aid — low rates of training are demonstrated not only by population, but also by non-medical persons (drivers and employees of road patrol service, patrol-guard service, guard service, etc.), who are required to know how to provide first aid to the injured, wounded or sick by their duty or activity.

The education on issues and techniques of first aid and medical care in secondary schools, colleges, universities of the country, as well as in driving schools and at special employment courses is conducted in a formal way, the number of hours for training and practicing skills on the approved plans and programs is insufficient.

All this requires serious study, analysis and even possible reorganization (if not reforming) of the service of emergency and first aid to the population in the prehospital period, especially in modern conditions, when local wars, armed conflicts and other emergencies are more frequent.

The views of the authors in no way claim to categorize such a solution to this problem, but can serve as a starting point for discussion, scientific and practical, scientific search and more profound research, to find the most effective ways for solving this urgent problem.

СПИСОК ИСТОЧНИКОВ

1. *Юсупов А.К., Лубяной В.И.* Сущность и классификация войн и военных конфликтов: содержание и анализ проблемы в современных условиях. URL: https://scienceforum.ru/2019/article/2018014030.

2. *Пилюгин П.В., Горбачёв А.Н.* Боевое братство славян на защите мира // Сборник научных статей ГрГУ им. Я. Купалы. Гродно: ГрГУ, 2014. 341 с.

3. *Пирогов Н.И.* Начала общей военно-полевой хирургии, взятыя из наблюдений военно-госпитальной практики и воспоминаний о Крымской т.е. Крымской войне и Кавказской экспедиции. Дрезден, 1865-1866. Т. 1-2. 1058 с. URL: https://viewer.rusneb.ru/ru/000199_000009_004822636?page=5&rotate=0&theme=white.

4. *Кривошеев Г.Ф.* и др. Россия и СССР в войнах XX века: Потери вооружённых сил: Статистическое исследование / Под общ. ред. канд. воен. наук, проф. АВН ген.-полк. Кривошеева Г.Ф. М.: Олма-Пресс, 2001. 608 с.

5. Independent: Чего действительно удалось достичь в результате войны в Афганистане? // ЦентрАзия. URL: https://ru.wikipedia.org/wiki/ Война_в_Афганистане (2001—2021).

6. *Евич Ю.Ю.* Тактическая медицина современной иррегулярной войны. Донецкая Народная Ресублика, 2016. 111 с.

7. *Благодир Ю.Х., Барыкинский Н.А.* Тактическая медицина как основной инструмент для проведения экстренной медицинской помощи // StudNet. 2022. № 2. С.1047-1054.

8. *Смирнов А.А.* Тактическая медицина. Псков: Стерх, 2020. 64 с.

9. Руководящие принципы и учебный план TCCC. Нац. ассоциация техников скорой мед. помощи. 2011. URL:https://translated.turbopages.org/proxy_u/en-ru.ru.54d9773e-62bc088e-23716d36-74722d776562/https/web.archive.org/web/20140417170808/http:/www.naemt.org/education/TCCC/guidelines_curriculum.aspx.

10. Тактический уход за ранеными в бою (TCCC) // North American Rescue. LLC. 2010. URL: https://translated.turbopages.org/proxy_u/en-ru.ru.54d9773e-62bc088e23716d3674722d776562/https/web.archive.org/web/20160131140433/http:/www.narescue.com/Tactical_Combat_Casualty_Care_%28TCCC%29-CN1CBE802C690C.html.

11. *Holcomb J.B., McMullin N.R., Pearse L.,* et al. Causes of Death in U.S. Special Operations Forces in the Global War on Terrorism: 2001-2004 // Ann. Surg. 2007. V.245, No. 6, P. 986-991. URL:10.1097/01.sla.0000259433.03754.98.

12. Пункт оказания помощи при ранении // Повышение квалификации боевого медика (CMAST). Презентация: «Point of wounding care». 2016.

13. *Мазуренко О.В., Рощин Г.Г., Волошин В.А.* Тактическая медицина как основной элемент экстренной медицинской помощи при проведении антитеррористических операций // Медицина неотложных состояний. 2014. №8. С. 96-98.

REFERENCES

1. Yusupov A.K., Lubyanoy V.I. Essence and Classification of Wars and Military Conflicts: the Content and Analysis of the Problem in Modern Conditions. URL: https://scienceforum.ru/2019/article/2018014030. (In Russ.).

2. Pilyugin P.V., Gorbachev A.N. Grodno The Military Brotherhood of the Slavs in the Defense of Peace. *Sbornik Nauchnykh Statey GrGU Im. Ya. Kupaly* = Collection of Scientific Articles GrGU Im. I. Kupala. Grodno Publ., 2014. 341 p. URL: https://uctopuk.info/blog/analiz-opyta-boevykh-deistvii-voisk-v-sovremennykh. (In Russ.).

3. Pirogov N.I. *Nachala Obshchey Voyenno-Polevoy Khirurgii, Vzyatyya Iz Nablyudeniy Voyenno-Gospitalnoy Praktiki i Vospominaniy o Krimskoy t. ye. Krymskoy Voyne i Kavkazskoy Ekspeditsii* = Beginnings of General Military Field Surgery, Taken from Observations of Military Hospital Practice and Memories of the Crimean War, i.e. the Crimean War and the Caucasian Expedition. Dresden. 1865-1866. V. 1-2. 1058 p. URL: https://viewer.rusneb.ru/ru/000199_000009_004822636?page=5&rotate=0&theme=white. (In Russ.).

4. Krivosheyev G.F., et al. *Rossiya i SSSR v Voynakh XX Veka: Poteri Vooruzhennykh Sil* = Russia and the USSR in the Wars of the XX Century. Losses of the Armed Forces: A Statistical Study /Ed. Krivosheev G.F. Moscow Publ., 2001. 608 p. (In Russ.).

5. Independent:What Has Really Been Achieved as a Result of the War in Afghanistan? CentralAsia. URL: https://ru.wikipedia.org/wiki/ War_ in_ Afghanistan (2001-2021).

6. Yevich Yu.Yu. *Takticheskaya Meditsina Sovremennoy Irregulyarnoy Voyny* = Tactical Medicine of Modern Irregular War. Donetsk Peoples Rep. Publ., 2016. 111 p. (In Russ.).

7. Blagodir Y.H., Barykinsky N.A. Tactical Medicine as the Main Tool for Emergency Medical Care. StudNet. 2022;2:1047-1054 (In Russ.).

8. Smirnov A.A. *Takticheskaya Meditsina* = Tactical Medicine. Pskov, Sterkh Publ., 2020. 64 p. (In Russ.).

9. TCCC Guidelines and Curriculum. Nat. Association of Emergency Medical Technicians. 2011. URL:https://translated.turbopages.org/proxy_u/en-ru.ru.54d9773e-62bc088e-23716d36-74722d776562/https/web.archive.org/web/20140417170808/http:/www.naemt.org/education /TCCC/guidelines_curriculum.aspx. (In Russ.).

10. Tactical Combat Casualty Care (TCCC). North American Rescue. LLC. 2010. URL: https://translated.turbopages.org/proxy_u/en-ru.ru.54d9773e-62bc088e23716d3674722d776562/https/web.archive.org/web/20160131140433/http:/www.narescue.com/Tactical_Combat_Casualty_CCare_%28TC %29-CN1CBE802C690C.html.

11. Holcomb J.B., McMullin N.R., Pearse L., et al. Causes of Death in U.S. Special Operations Forces in the Global War on Terrorism: 2001-2004. Ann. Surg. 2007;245;6:986-991. URL: 10.1097/01.sla.0000259433.03754.98.

12. Point of Assistance in Case of Injury. Upgrading the Skills of a Combat Medic (CMAST). Presentation: "Point of Wounding Care". 2016.

13. Mazurenko O.V., Roshchin G.G., Voloshin V.A. Tactical Medicine as the Main Element of Emergency Medical Care During Anti-Terrorist Operations. Emergency Medicine. 2014;8:96-98 (In Russ.).

Материал поступил в редакцию 12.08.22; статья принята после рецензирования 30.11.22; статья принята к публикации 23.12.22
The material was received 12.08.22; the article after peer review procedure 20.11.22; the Editorial Board accepted the article for publication 23.12.22