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БИОЛОГИЧЕСКОЕ ОРУЖИЕ ОТ ИСТОРИИ К СОВРЕМЕННЫМ УГРОЗАМ

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BIOLOGICAL WEAPONS FROM HISTORY TO MODERN THREATS

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Резюме. За прошедшее столетие от инфекционных болезней умерло более 500 миллионов человек. Несколько десятков тысяч этих смертей произошли из-за преднамеренного выброса патогенов или токсинов, в основном японцами во время их нападений на Китай во время Второй мировой войны. Биологическое оружие использовало яды для убийств еще на заре цивилизации, причем не только против отдельных врагов, но иногда и против целых армий.

Ключевые слова: Биологическое оружие, сибирская язва, ботулизм, магреновые эффекты.

Resume. During the past century, more than 500 million people died of infectious diseases. Several tens of thousands of these deaths were due to the deliberate release of pathogens or toxins, mostly by the Japanese during their attacks on China during the Second World War. The biological weapons have used poisons for assassination purposes ever since the dawn of civilization, not only against individual enemies but also occasionally against armies.

Keywords: biological weapons, anthrax, botulism, modern affects.

Relevance. To evaluate the historical threats to Modern threats of biological weapons and terrorism of the world. In order to educate the people about infectious diseases as a war.

Purpose: to show the awareness of future threats into perspective, we discuss in this article the history of biological warfare and terrorism.

Tasks:

1. To analyze the past records of data of biological weapons used in the world wars.
2. To determine affected people due to biological weapons.
3. To compare the spread of infections of botulism and anthrax.

Materials and methods. A retrospective analysis and gathering data of different norms and regulations regarding biological weapons in world wars and modern threats from the text book of the biological weapons threat and Non - proliferation option which was published in cooperation with Carnegie Endowment for International Peace (CSIS) on November 2006. We found a records from Friedrich Frischknecht who wrote the article about biological weapons as a modern threat in PMC.

Results and their discussion. During first world war, under the category of major public health hazard, Anthrax (*Bacillus anthrax*) and glanders (*Burkholderia mallei*) were

mainly identified which was 1st used by Germany as biologic warfare for sabotage. during second world war Anthrax, Plague, Tularemia, cholera, Encephalitis, food poisoning, Glanders, Typhus and various toxic syndromes were used as a biological weapon by many countries because almost every country participated in world war 2.

Tab. 1. Biological agents variously cited as possible weapons used against human

	United Nations 1969	WHO 1979	Australia group 1992	NATO 1996	BWC draft protocol 2001
Bacillus anthracis, A22	X	X	X	X	X
Brucella species, A23	X	X	X	X	X
Burkholderia mal- lei,A24.0	X	X	X		X
Franciscella tuleren- sis, A21	X	X	X	X	X
Salmonella typhi, A01	X	X	X	X	
Shigella species, A03	X			X	
Vibrio cholerae, A00	X	X	X	X	
Yersinia pestis, A20	X	X	X	X	X
Coxiella burnetti, A78	X	X	X	X	X
Oriente tsutsugamu- shi,A75.3				X	
Ebola virus dis- ease,A98.3			X	X	X
Lassa fever, A96.2			X	X	X
Yellow fever, A95	X	X	X	X	X
Monkeypox, B04			X		X
Dengue, A90/91	X	X	X	X	
Influenza,J10,11	X	X		X	
Variola major,B03	X	X	X	X	X
Japanese encephali- tis,A83.0		X	X		X
Toxoplasma gondii,B58		X			

Anthrax was used in both world wars as a biological weapon. It is almost fatal without treatment in 90% of cases. The modern threats of Anthrax has been decreased from 19s to 20s.

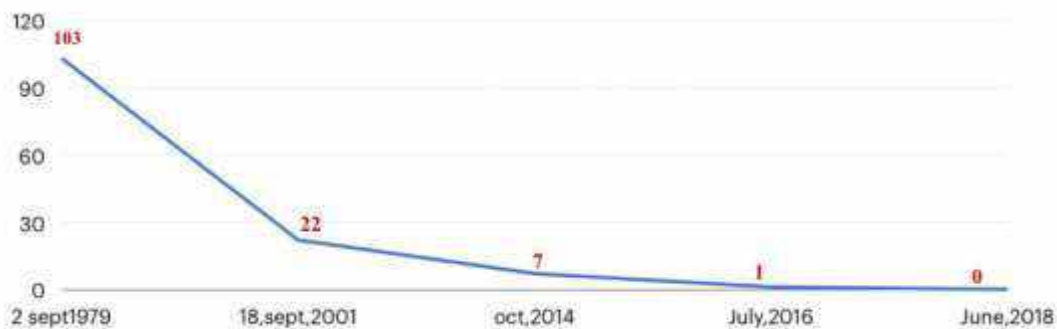


Fig. 1 – The number of affected victims due to Anthrax from 1979 to 2018

The anthrax, smallpox, plague, botulinum toxin, tularemia, and hemorrhagic viral fevers like Ebola. Three scenarios pose the greatest threats to us in a bioterrorism attack: An attack by an airborne agent like anthrax, a smallpox attack, and a release of botulinum toxin in the food supply, such as milk.

As far the category A suggests the deadliest and poisonous agents are anthrax, small pox and botulism toxin. In comparison of botulism toxin and anthrax. The anthrax can be put into food and water. Inhalation anthrax is the most serious form of the disease. It is odorless and invisible, and since the spores hitch a ride on the dust particles in the air, they have been known to spread for up to 60 miles. If inhaled in the lung, the bacteria divide and produce a lethal toxin that can enter the circulation. This results in sepsis syndrome.

The botulism toxin is one of the deadliest substance for humans. The clostridium bacterium is easily obtained from soil, could be cultivated to produce toxins, and could be put in our food supply. The botulism toxin blocks acetylcholine, which prevents muscles from contracting. Paralysis ensues, usually starting from the head and progressing down towards the legs.

In comparison: in modern days there is treatment for anthrax. Anthrax can be treated by antibiotics once they diagnosed soon and in botulism toxin it is a poorly used as biological weapon because this agent degrades when exposed to heat so it is inappropriate to use.

But botulism toxin and anthrax is both are deadliest agent when they are used as biological warfare.

Conclusion: biological warfare is a potential threat on the battlefield and in daily life. Attacks with biological weapons are indeed a real threat and the responsible government agencies need to be aware of this kind of threats. Previously the civilization of bio weapon are very dangerous in the man kind of survival.

The only tools for prevention is to specific defense against bioweapons consist of vaccines against both viruses and bacteria. To prevent Surveillance and assessment (early detection or awareness) by epidemiological methods.

Literature

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