



Research Article

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Bioterrorism- An Assessment of Insects Acquaint Biological Weapons against Humanitarian



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Abstract

At present, while terrorism is not a new threat to the society but it is distinct from that of the antecedent. The modern technologies have facilitated terrorists to animus and to conduct worldwide as never earlier. With this advancement, their actions remaining in shadows among dispersed cells. These terrorist's activities have an unambiguous impingement on human rights with devastating consequences and physical integrity to the victims. Numerous a report of adoption of disease as cannon during times of war exists and exiguous couldn't confirm because of the information about the use of consequences often are unavailable. The ravage of naturally occurring diseases evidenced in form of infectious disease use as potential cannon among enemies. These agents are encountered in form of bacteria, viruses, fungi or toxins. The victims can be exposed from inhalation or through skin or could be ingested by contaminated food and always exposed in physical symptoms but moratorium and substantiate strenuous to ascertain from naturally occurring illness.

Keywords: Terrorism; Weapons; Victims; Illness; Technology; Biological Agents etc.

Introduction

The menace of bioterrorism is in the communal eye again and the major public health agencies are urging preparedness efforts. The usage of the explosive during warfare has increased in several forms such as chemical, nuclear, radioactive and biological. The biological agents have become a sensitive issue with a raised question about the state of readiness to deal with bioterrorist attacks [1]. The security agencies cautioned that most of local health administration lack plans to address bioterrorist events and most of them have not received comprehensive terrorism training. Now a day, major health organizations and centers for disease control and prevention are centrally involved in urging the importance of bioterrorist hazard [2].

Bioterrorism is an action that involves the intentional release of biological agents such as bacteria, viruses, fungi and toxin which occur naturally and cause the resultant in form of disease, disruption of society, diminished confidence and loss of life [3]. Bioterrorism can be envisioned into various forms that may in form of the release of communicable infectious agents like Ebola, Smallpox which spread very rapidly around the world and has potential of influenza to cause epidemics [4]. After the exposure of such biological agents, physical symptoms occur delay and

it became very difficult to distinguish from naturally occurring illness. While the second agents such as anthrax, causes disease or death in the population and generally transmitted between individuals and continues their effect long after their release. These agents don't need to be weaponized but can be used by deliberately contaminating food looms despite to focus as small particle aerosols and volatile liquids [5].

A few of the biological agents that are genetically engineered to resist current therapies and evaded vaccine but can be caused as pathogenesis. Even without warfare, the plausible threat to infect the population also takes place to produce instability among the people about safeguard and security. At recent in 2001, the West Nile virus and anthrax spores in U.S. in form of foot and mouth disease which was diagnosed by the laboratories and found that it was a planning for future involving biological terrorism [6]. This attack was firstly denied to be an intentional release of anthrax spores by the National public health and agricultural infrastructures. But the response of Centers for Disease control and prevention detected the infectious agent whether they are endemic and emerging result of bioterrorism [7].

Chemical, Biological, Radiological and Nuclear Agents

Emission of highly penetrating radiation leads to external irradiation to individuals by the absorption or by direct contact with contaminated matter which can emit from different type of radiation such as alpha, beta and gamma rays. The high doses of these can penetrate into the human tissues up to a depth and the latency time period may be from minutes to several hours or years. A few of the chemicals agents such as hydrogen cyanide, chlorine, organophosphates are also developed under military weapon programmes in form of mustard gas which effect over the human skin if it is inhaled [8].

Biological weapons which have the long latency time period and have a momentous impact and severity of infection among the population. Some epidemic escalations take place by airborne transmission enabling the potential to spread the disease hasty, while a few of them may be escalated in form of fever e.g. virus carried by mosquitos (Q- fever, Venezuelan equine encephalitis), bacterial infections anthrax, plague, tularaemia, glanders and brucellosis [9]. A few of the toxins which are used in form of biological weapon such as ricin, botulinum toxin, and staphylococcal enterotoxin B can be a cause of death after severe illness.

The entity known as *Bacillus anthracis* may ordinarily produce disease in domesticated as well as wild animals such as goats, sheep, cattle, horses, and swine [10]. Humans become infected by contact with infected animals or contaminated animal products and the Infection occurs mainly through the skin and rarely by breathing spores or swallowing them. Spores exist in the soil and become aerosolized when the microorganisms are released into the air by excavation, plowing, or other disruptive actions. The sore usually appears in form of swelling and painless which affects the person's entire face lower limb and blackening of tissues, often leaving a scar. In cases where spores are inhaled, affects the lungs which produce massive bleeding and swelling inside the chest cavity, mild chest pain cough and leads towards the blood poisoning. Latency time of 2-5 days, victims of or pharyngeal disease develops severe sore throat in mouth or tonsil, fever.

An action of such weapons ranges from simple hoax and the assassination cause incapacitation or death of thousands. Apart from biological warfare, anthrax in humans is rare. In the United States, only 127 cases of anthrax appeared in the early years of the 20th century and dropped to about one per year during the 1990s.

Analysis of Bio -Weapons

In case of anthrax, a microscopic test is performed for diagnosis which could be possible by use of another device i.e. x-ray, CT-scan and most often gives the sign in form of chest cavity, pleural and pericardial [11]. Meningitis which is also

known as brain swelling is often very crucial due to other causes and diagnosis is possible by the history of victim. To determine the anthrax, growth in the blood is paid attention to observe the grow throughout the body within 24 hours. All rapid diagnostics assessment includes polymerase chain reaction, enzyme linked immunosorbent assay and direct fluorescent antibody testing.

Rapid Vaccine Development

Biological agents are not restricted to an area to dissemination of known pathogens and engineered by using current molecular biology methods to avoid the it by detection by immune system. All plausible organisms including naturally occurring variants greatly facilitate the identification of any variations in a we aponized form. For the quick path of determination, DNA based vaccines are explore from the genome sequence and recombinant protein expression which provide abutment for the development of relevant antigens. In a few cases such as smallpox virus, the protection of immune compromised influenced subject is needed to be protecting [12].

The usage of microbial genomics to the development of a meningococcal vaccine has potentials, and can be exploited to the time in this area that is reinforcement of protease inhibitors i.e. anti -HIV drugs. Ciprofloxacin (Cipro), doxycycline (Monodox, Vibramycin and others) and levofloxacin (Levaquin) are approved by the food and drug administration for post - exposure prevention of anthrax in adults and children [13]. To prevent the bodies from these agents such as anthrax, the vaccination consists five IM draughts and could be administrated at a time interval of 0 day, 4 weeks, 6-12- 18 moths. In infected areas, only groups of military personnel or investigators/remediation employees can enter with anthracis spores.

Conclusion

Nowa day, bioterrorism endures a legitimate menace from the international terrorists as well as from the anti-national activities. Terrorists intent at very destruction to the population of an area/place/country and to agitate the rule of law and human rights which accomplishments can destabilize governments, civil societies, jeopardize peace and collateral, security social and economic establishment etc. These intimidations provide the significant intimidation to the scientific and technological challenges due to the combination of conceivable agents and the modes of their delivery at any destination. Form a view of communal health perspective, timely surveillance and awareness from the syndromes resulting from the viruses or insects could help to prevent it.

Ensuring the adequate inventory of drugs, laboratory reagents, anti-toxins, has become an essential. The security agencies have to adjust the counter terrorism strategies to the new arenas by applying new types of sources for intelligence gathering to pause such warfare's and the violation of human rights. Somehow, the prevailing targeted sanctions regime poses

a number of deliberate confrontations related to transparency and listing procedures. The intended sanctions which consequences in freezing assets has overwhelmed to prevent the individuals, societies etc.

References

1. Centers for Disease Control and Prevention (2008) Archived from the original.
2. Preston, Richard (2002) *The Demon in the Freezer*, Ballantine Books, New York, USA.
3. Advantages of Biologics as Weapons Bioterrorism: A Threat to National Security or Public Health Defining Issue? MM&I 554 University of Wisconsin–Madison and Wisconsin State Laboratory of Hygiene.
4. Joy Bill (2007) *Why the Future Doesn't Need Us: How 21st Century Technologies Threaten to Make Humans an Endangered Species*, Random House.
5. Vietri Nicholas J, Purcell Bret K, Tobery Steven A, Rasmussen, Suzanne L, Leffel Elizabeth K (2009) A Short Course of Antibiotic Treatment Is Effective in Preventing Death from Experimental Inhalational Anthrax after Discontinuing Antibiotics. *The Journal of Infectious Diseases* 199(3): 336-341.
6. Bisher, Jamie (2003) During World War I, Terrorists Schemed to Use Anthrax in the Cause of Finnish Independence. *Military History* p. 17-22.
7. Bennett, Brian C (2008) *US Biodefense and Homeland Security: Toward Detection and Attribution*, Monterey, Naval Postgraduate School, California, USA.
8. Zalini Y (2010) Combating and reducing the risk of biological threats. *J Defence Secur* 1: 1-15.
9. Warfield KL, Swenson DL, Demmin G, Bavari S (2005) Filovirus-like particles as vaccines and discovery tools. *Expert Rev Vaccines* 4(3): 429-440.
10. Poupard JA, Miller LA (1992) History of biological warfare: Catapults to capsomers. *Ann N Y Aca Sci* 666: 9-20.
11. Leitenberg M (2001) Biological weapons in twentieth century: A review and analysis. *Crit Rev Microbiol* 27(4): 267-320.
12. Cronin AK (2004) Terrorist motivations for chemical and biological weapons use: Placing the threat in context. *Defense Secur Anal* 20(4): 313-320.
13. Bhalla DK, Warheith DB (2004) Biological agents with potential for misuse: a historical perspective and defense measures. *Toxicol Appl Pharm* 199(1): 71-84.



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