

Preface

The range of diseases caused by biological agents and/or their toxins with the potential to be used intentionally against civilian populations is extensive and diverse. Some of these, for example anthrax, have been known to man since antiquity whereas others, for example Nipah virus, were recognized only recently. Even before the “microbial world” was seen or propagated, filth, fomites, carcasses, and cadavers were used to “transmit” disease and devastation to armies during wars.

It is interesting that the first specific biological agent, *Bacillus anthracis*, attributed to human disease by fulfilling Kochs postulates is also the one that has received most notoriety as a bioterrorism agent. The development of the science of bacteriology in the late 19th century expanded the scope of biological agents as weapons of mass destruction. The threat of nuclear and chemical weapons dominated during the 20th century, however. The cheap and easy to propagate biological agents remained in the background and were reported to be used against civilians in isolated incidents mostly by small organized groups or individuals. The United States anthrax attacks of 2001 followed the most devastating and vivid crime against humanity in recent history. The low technology method of successfully disseminating anthrax spores through the US postal service brought into focus the threat of biological agents as potential weapons of mass destruction.

As I looked at the list of diseases caused by “critical biological agents” I immediately realized I had had the opportunity to see a few patients with all of them over the past 32 years. Perhaps this is one of the best things about having had the privilege of working in two different continents and having worked both in the basic science discipline of microbiology and the clinical discipline of infectious diseases. The Infectious Diseases Group (including all the authors of this book) had already planned a regional continuing medical education program in collaboration with the Association of Practitioners in Infection Control (APIC) for November 15, 2001, mostly to address West Nile virus and antibiotic resistance. As the convener, I suggested we expand the scope of the program to include “bioterrorism agents”. All parties readily agreed. The program received an overwhelming response and registrations had to be turned down, even after changing the venue to accommodate more delegates. For the first time we were seeing large numbers from all medical and surgical specialties and from specialties like anes-

thetia and radiology in the same room – discussing issues that affected not just their patients but themselves and their families. We were invited by the American Society of Microbiology to conduct the first workshop on bioterrorism at its national meeting on September 26, 2002. We have conducted the workshop every year since in addition to presenting local and regional programs for healthcare providers, hospital executives, and safety engineers.

Last year, I received an invitation from the editor of the second edition of the **Encyclopedia of Molecular Cell Biology and Molecular Medicine** to write a review on “*Preparedness for Bioterrorism*”. As I sent the manuscript, I explained to the editor that the material in this chapter was very different from what I expected to see in other chapters of this encyclopedia. Soon after the materials reached the publishers, Wiley–VCH, I received a very gracious note and an invitation to author and edit a book on bioterrorism. Once again, I chose to depend on my colleagues at our institution and this book is another one of our “team projects”.

The book *Bioterrorism Preparedness – A Medicine–Public Health–Policy* has been prepared with the hope of being useful to medical students, healthcare providers, infection control practitioners, public health professionals, and legal professionals involved in health policy issues. The first two chapters provide a historical perspective and overview of potential agents of bioterrorism and bioterrorism preparedness. These two chapters will hopefully provide a quick reference to a variety of issues related to bioterrorism. The third chapter, “*Care of Children in the Event of Bioterrorism*”, has, in my opinion, a unique quality to it. It emphasizes differences between the approach to bioterrorism-related diseases in adults and children – where they exist and are important. The next six chapters (4 to 9) are dedicated to the Category A agents. Each chapter stands on its own and provides appropriate but not overwhelming detail on all aspects of these diseases. The salient features of Category B and Category C agents are discussed in Chapter 1. The last two chapters on policy issues and legal preparedness written by our colleague in the Department of Medical Humanities have truly broadened the scope of this book. It has been a pleasure for me to interact with this young man and recognize the significance of health policy makers in the overall delivery of health care.

As one ponders over the past, present and future of bioterrorism, it becomes clear that the very advances in technology that have made diagnosis and treatment of many infectious diseases possible have also made it simpler to obtain, cultivate, and use them for bioterror. In particular, the breakthroughs that have come from the genomics revolution may be used to enhance detection, protection, and treatment. These same capabilities might also be misused in the design of bioweapons. The threat of biological agents being used for terrorist activity has given an impetus to research that will enhance our capability to detect, trace, and manage bioterrorism events. A significant example of this is the use of genomics in tracing the origin or source of a microbial agent. Microbial forensics will enable “genetic fingerprinting” of the weapon the same way as it is currently being used on the alleged perpetrators. Such research and future technology will at the same time be useful in detecting and managing natural infectious disease. To quote Albert Einstein, “In the middle of difficulty lies opportunity”.

I would like to express my sincere thanks to all my colleagues who have made contributions to this book. I must also thank a long time friend and a colleague in endocrinology and molecular medicine who is known for his encyclopedic knowledge, photographic memory, and constant desire to send me reading materials from sources I generally do not follow. In closing, my gratitude and thanks go to Mrs Nancy Mutzbauer without whose unconditional and constant help much of the book would never have seen the light of day.

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