Twelve Diseases That Changed Our World

Irwin W. Sherman

ASM Press, Washington, DC, USA, 2007
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Twelve Diseases That Changed Our World offers engaging observations on a dozen diseases to serve 2 goals. The opening chapters meet the title's promise by tracing the impact of hereditary blood disorders porphyria and hemophilia on the succession of European monarchs in the 16th through 18th centuries. Also presented is a riveting account of the consequences of a potato blight in 1840s Ireland, which forced migration of millions to England and North America. Thereafter, the book turns to the topic of infectious diseases and the lessons learned from earlier responses to "unanticipated outbreaks of disease" to inform preparedness for future outbreaks. Specifically, the chapters are devoted to the study of cholera, smallpox, bubonic plaque, syphilis, tuberculosis, malaria, fever, influenza, and AIDS. These topics are familiar territory for Dr. Sherman, who recently authored The Power of Plagues, in which he also examines 7 of these infections; his command of the subject matter is evident.

Each chapter is packed with information ranging from pathogenesis and clinical manifestations to epidemiologic calculations and antimicrobial drug resistance. A limited number of references are provided in the concluding book notes, grouped by chapter and page number, which offer additional resources for readers seeking more information. Of particular interest is the book's accounting of 19th-century pioneers in epidemiology and infectious diseases. John Snow's use of early epidemiologic tools to associate cholera deaths with water from the Broad Street pump, Louis Pasteur's development of vaccines, and Robert Koch's discovery of tubercle bacillus and the cholera vibrio all get their deserved attention; Florence Nightingale's use of numerical data to demonstrate improvements in patient hygiene comes as a pleasant surprise. A concise volume written for the general reader, Twelve Diseases That Changed Our World provides an excellent foundation for the study of public health and infection control.

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Superantigens: Molecular Basis for Their Role in Human Diseases

Malak Kotb and John D. Fraser, editors

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This collection of short reviews by experts in the field provides a complete overview of microbial superantigens, an unusual family of proteins that form an abnormal linkage between the major histocompatibility complex class II antigens and specific T-cell repertoire Vβ families. This linkage leads to the nonspecific activation of large numbers of regulatory T lymphocytes, producing cytokine storms that can have a variety of serious clinical consequences.

The book is organized into 5 sections with a total of 16 chapters. The first section is an overview of the breadth and scope of superantigen research, including an up-to date catalog of superantigens characterized from both bacteria and viruses, their cellular interactions, and disease associations. The next 3 chapters deal with the 3-dimensional structure, function, and diversity of superantigens, including an account of the critical involvement of zinc in the optimal binding of some of these proteins. Section 3 contains an entire chapter that describes the pathophysiology of superantigens in both acute and chronic skin disorders. Several chapters in section 4 describe in vitro and animal model systems for the study of diseases caused by superantigens, including autoimmune disease, neuropathology, toxic shock, and others.

The final 4 chapters in section 5 detail various therapeutic approaches for superantigen-mediated diseases. These approaches include conventional antibiotics, antagonistic peptides, intravenous immunoglobulin, antibodies directed to T-cell costimulatory receptors, and superantigen receptor mimics, in addition to existing and experimental approaches. An unnumbered section after the first chapter contains high-quality color plate illustrations, which collectively provide outstanding visual support for several chapters.

Superantigens affords a comprehensive look at the current state of knowledge regarding these interesting proteins in a relatively compact volume. The text is certainly a must-read for any scientist engaged in their study but will also prove a rewarding read for microbiologists interested in this curious interaction between mibrobes and the immune system.

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Animal Viruses: Molecular Biology

Thomas C. Mettenleiter and Francisco Sobrino

Caister Academic Press, Norfolk, UK, 2008
ISBN: 978-1904455226
Pages: 531; Price: US $300.00

In this multi-author work, Mettenleiter and Sobrino have compiled 10 chapters that describe what is currently known about the molecular biology of some of the most interesting viruses of veterinary importance, from the tiny circovirus of pigs (1,800 nt of single-stranded DNA) to the highly complex African swine fever virus (≈200,000 nt pairs of double-stranded DNA). It is fitting that the first chapter describes foot-and-mouth disease virus, which was the first animal virus to be described by Loeffler and Frosch, who worked in Griefswald-Insel Riems, where Mettenleiter is currently the president of the Friedrich-Loeffler Institut. All 10 chapters are written by experts in their respective fields. Mettenleiter is a coauthor for a chapter about herpesviruses, whereas Sobrino is a coauthor for one on foot-and-mouth disease virus. Polly Roy wrote a chapter about bluetongue virus, one of the major threats to the livestock industry worldwide, which recently emerged in Europe, perhaps because global warming has allowed the *Culicoides* vector to survive and overwinter. Another chapter is about Hendra and Nipah viruses, which are newly emerging in Southeast Asia and Australia. There are also informative chapters on arteriviruses, coronaviruses, and pestiviruses. Finally, in 1 chapter, Hans-Dieter Klenk and colleagues write about viruses of birds, including avian influenza. They discuss the molecular mechanism of pathogenesis and host range for the virus everyone fears may give rise to the next influenza pandemic.

The book would have been improved by including a chapter on paramyxoviruses, of which rinderpest virus of cattle and Newcastle disease virus of birds are 2 important examples. But, overall, this compilation is excellent and is rounded off by a scholarly and provocative epilogue about animal virology by Esteban Domingo and Marian C. Horzinek. It is almost worth buying the book for these 10 pages alone.

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AIDS Therapy, 3rd Edition

Raphael Dolin, Henry Masur, and Michael S. Saag, editors

Churchill Livingstone, New York, New York, USA, 2007
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Pages: 1,204; Price US $189.00

Reviewing and summarizing the treatment of HIV disease and its complications is a daunting task. Writing a textbook incorporating the rapidly evolving treatments and management strategies is even more difficult. In this third edition of AIDS Therapy, the authors have combined the efforts of international experts to fulfill this goal. As with every textbook, references are a little outdated; few references are more recent than 2006. The addition of online access to updates will possibly alleviate this problem, although the online version still lists the Department of Health and Human Services guidelines for antiretroviral use from October 2006.

Excellent chapters cover the serologic diagnosis of HIV disease, primary care in industrialized and resource-limited countries, strategic use of antiretroviral agents, immune-based therapies, and special clinical settings. Although the management of pregnant HIV-positive patients is discussed, no individual coverage of pediatrics is provided.

The text provides comprehensive reviews of each antiretroviral agent, summarizing pharmacology, adverse reactions, and clinical uses, and extensively reviewing major trials for each agent. For some of these agents, this represents a historical review of monotherapy without practical application. For example, a full chapter is devoted to zalcitabine, an agent that was discontinued in June 2006. For antiretroviral agents, the best summary, referred to as "recommendations for use," is included in the last section of each drug chapter.

Individual chapters describe opportunistic infections and malignancies, including their diagnosis, therapy, and prevention of these diseases. Variability in the length of these chapters does not always correlate with the importance of these processes. The inclusion of multiple charts and algorithms provides a useful approach to diagnosis and management. The last major section of the text provides approaches to specific syndromes including the major problems in patient

Their Role in. Human Diseases. Malak Kotb and John D. Fraser, editors. ASM Press, Washington, DC, USA, 2007. ISBN-10: 1555814247. ISBN-13: 978-1555814243.Â Role of staphylococcal and streptococcal pyrogenic-toxin superantigens in human disease. January 1993. P.M. Schlievert. Read more. Last Updated: 03 Oct 2020. Download citation. What type of file do you want? Epidemiology, disease burden, and outbreaks. GAS colonizes epithelial surfaces, primarily of the throat and skin, but also colonizes other surfaces such as the vagina and rectum, from where it can cause a remarkably wide array of superficial, invasive, and immune-mediated diseases.Â Large-scale epidemiological studies have shown a remarkable difference in the distribution of emm types in geographically and socioeconomically distinct regions of the world (2 â€“ 4, 31, 32, 42). In industrialized societies, a significant percentage of GAS isolates belong to a few emm types, most notably emm types 1, 3, 12, and 28, which account for approximately 40% of disease in these countries (4, 43 â€“ 47). tions of all human phosphoinositide kinases are shown in Figure 2, along with their substrate preferences. Detailed studies on the evolutionary history of the different phosphoinositide kinases reveals three evolutionary groups based on sequence conservation, with the rst group containing all classes of PI3Ks and the type III PI4Ks, a second group containing the type II PI4Ks, and a nal group containing the PIP kinases (Brown and Auger, 2011).Â Class IA PI3Ks are frequently mutated in human disease, with both activating and inactivating mutations identied in a. variety of diseases (Table 3). Mutations in.Â bound to Ras revealed the molecular basis for how the RBD of spots, the nSH2-helical interface (E542K, E545K) and the regula Finally, the role of superantigens in certain human diseases such as toxic shock syndrome, some autoimmune diseases like Kawasaki syndrome, and perhaps some immunodeficiency disease such as that secondary to HIV infection is being addressed and mechanisms are being defined. Still, numerous important questions remain. For example, it is not clear how superantigens with such different structures, for example, SEB, TSST-1, and MMTV vSAG, can interact with MHC and a similar region of the TCR in such basically similar ways. It remains to be determined whether there are human equivalents of the endo