A Clinician’s Dictionary of Pathogenic Microorganisms

James H. Jorgensen and Michael A. Pfeller, authors
ASM Press, Washington, DC
Pages: 273, Price: US $29.95

This dictionary of pathogenic microorganisms, published by the American Society for Microbiology, is simple and useful. This book is divided into four sections, bacteria, fungi, parasites, and viruses. Each organism is presented alphabetically in its section. Older names are mentioned and connected with current names. A brief bibliography is also provided at the end of each chapter.

The emergence of new infectious agents in the last 2 decades makes it difficult for clinicians to recognize new diseases and new names. A memorandum to address this matter would have been useful. Moreover, the genomic revolution has caused a taxonomic revolution; this is specifically true for bacteriology. For example, 16S rRNA sequencing allowed reclassification of many pathogenic organisms and descriptions of many others. These advances in genomic knowledge have brought about many changes in the names of pathogenic microorganisms, evidenced here by the authors devoting the largest part of the book to bacteria.

The information provided, although very brief, is usually complete enough to provide a basic understanding of the microorganism. Many new organisms such as Ehrlichia and monkeypox viruses, as well as emerging diseases such as severe acute respiratory syndrome, are included.

This book provides basic information clinicians need for a quick reference book. It largely succeeds in this attempt and may be very useful as a pocket book for nonspecialists at the patient’s bedside. I recommend it for general practitioners and health professionals.

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Cryptosporidium: from Molecules to Disease

R.C. Andrew Thomson, Anthony Armson, and Una M. Ryan, editors
Elsevier, Amsterdam
Pages: 422, Price US $139.00

The protozoan parasite, Cryptosporidium, has recently emerged as a human pathogen. It was unidentified or unrecognized as a cause of illness in humans until 1976. Since then, it has caused gastrointestinal illness around the world. Its small size, low infectious dose, resistance to chlorination, and durability in the environment has made it a uniquely challenging organism for environmental scientists and public health professionals.

This book includes full text of abstracts and invited papers from an international conference held in Australia in October 2001. More than 100 scientists from more than 15 countries contributed to the conference.

The “from molecules” aspect of the book, which addresses molecular and
biochemical features of the life cycle, infection, and detection of Cryptosporidium, gives a complete picture with detailed papers and abstracts of subjects, including pathogenesis and immune response, cell culture methods, detection methods, and molecular taxonomy. The main focus of the book is on descriptions and evaluations of traditional and novel methods to detect and differentiate Cryptosporidium. Papers are also included that describe methods of detecting Cryptosporidium in environmental water samples, detail surveys that determine the occurrence of Cryptosporidium in water supplies, and explain how to acquire laboratory accreditation for testing water samples.

The book focuses less on understanding the public health aspects of Cryptosporidium, its epidemiology, and treatment for the illness it causes. Notably absent are descriptions of serologic assays used for detecting Cryptosporidium in surveillance and epidemiologic studies. Recent studies have identified a high seroprevalence in the general population, which indicates that infection may be widespread (1–5). Including examples of quantitative microbial risk assessments would have been useful (6). These assessments are logical extensions of the valuable human infectivity studies described in several papers in the book. The treatment portion presents interesting results of randomized trials of nitroimidazole therapy but is otherwise limited.

The organization and grouping of the papers and abstracts were confusing. An introduction and summary for each section to help the reader identify and assimilate the information in an organized manner would have been helpful.

Despite these shortcomings, this book assembles and summarizes an impressive array of recent advances in Cryptosporidium research. I recommend this book for laboratory scientists, microbiologists, laboratory technicians, and water-quality professionals. Medical professionals involved with research to detect and differentiate Cryptosporidium will likely find this book useful. Because of the technical nature of the papers and the emphasis on microbiologic methods, the book will be less useful for public health professionals, risk managers, and epidemiologists. Because of the rapid progress of Cryptosporidium research, I recommend using this book as one reference but also conducting a broad search of current literature for new studies or additional advances.

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References


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Cryptosporidium oocysts are commonly detected in surface-derived drinking water. However, the public health significance of these findings is unclear. This study compared serological responses to two Cryptosporidium antigen groups for blood donors and college students using chlorinated and filtered river water vs. ground-water sources. The surface water received agricultural and domestic sewage discharges upstream. Participants from the surface-water city had a higher relative prevalence (RP) of a serological response to the 15/17-kDa antigen group (72.3% vs. 52.4%, RP = 1.36, P < 0.001) and Cryptosporidium is a microscopic parasite that causes the diarrheal disease cryptosporidiosis. Both the parasite and the disease are commonly known as Crypto. There are many species of Cryptosporidium that infect animals, some of which also infect humans. The parasite is protected by an outer shell that allows it to survive outside the body for long periods of time and makes it very tolerant to chlorine disinfection. While this parasite can be spread in several different ways, water (drinking water and recreational water) is the most common way to spread the parasite. Cryptosporidium is a le