Sherris Medical Microbiology as a Resource for Doctor of Pharmacy Students

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A challenge in teaching microbiology within a Doctor of Pharmacy (PharmD) program is to convey the fundamentals of microbial pathogenesis, explain the basic principles of infectious disease, describe major pathogens, and introduce relevant drugs and their targets within the course of one semester. To meet this challenge, I searched for a microbiology textbook that covered the basic principles of microbiology, related these principles to medically-relevant microorganisms, and addressed specific infectious agents from epidemiology to therapeutic options. Sherris Medical Microbiology (5th Ed.) fulfilled many of these requirements.

Sherris Medical Microbiology focuses on medically relevant pathogens and diseases, and gives enough background information to allow students to understand the fundamentals of infectious disease without straying into areas of microbiology that are not medically related. The text introduces basic principles of infectious disease, with individual chapters devoted to the immune response, diagnostic tools and epidemiology. Later chapters refer to these introductory chapters by page number when concepts are discussed again with regard to specific microorganisms. Groups of chapters are dedicated to pathogenic bacteria, viruses, fungi, and parasites. Each section contains chapters that address the general nature of each microorganism, as well as chapters that discuss specific agents (e.g., herpesviruses) or diseases (e.g., diarrheal viruses). The chapters regarding pathogenesis were especially useful, as they concisely described mechanisms by which each group of microorganisms cause disease without getting lost in experimental detail. For our PharmD students, the chapters on antimicrobial agents and resistance were very useful in initiating discussions on how resistance develops in different classes of microorganisms and the students’ own professional responsibility in helping to prevent such resistance. The book concludes with a series of chapters that reorganize some of the previous information by infectious syndromes (e.g., skin and wound infections or central nervous system infections), and these were very useful for considering case studies.

Chapters dedicated to specific microorganisms are well organized and represent a major advantage of this textbook. They begin with a brief description of the basic biology of the microorganism, noting unique aspects of the life cycle or significant proteins. This is followed with a section on disease characteristics including succinct explanations of epidemiology, pathogenesis, and the development of immunity against the microorganism. The chapters conclude with clinical aspects addressing manifestations, treatment, and prevention. The clinical sections end with a case study, followed by questions regarding the disease and therapeutic treatment. While
the “Clinical Case” questions are more focused on medical education, these questions were helpful in highlighting the clinical relevance and applications for each microorganism for PharmD students.

A useful, though not unique, feature is an online assessment tool that provides multiple-choice questions to test a basic understanding. Additionally, margin notes are scattered liberally throughout the chapters, and provide concise bullet points to aid in emphasizing the main concepts.

A criticism of this text is that some of the figure legends are underdeveloped, causing students to ask for clarification about details in the figure. While further clarification of the images is sometimes provided within the text, this feature was frustrating for many students. However, the figures as a whole are visually clear and compelling.

Overall, Sherris Medical Microbiology addresses a wide range of information on medically relevant pathogens in a relatively concise format. The text is easy to read and approachable for a student who is delving into medical microbiology for the first time in their career, and could be a helpful resource for any student in the health sciences.

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