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Book review

Antiviral Drug Resistance
Edited by Douglas D. Richman
Wiley, New York, 1996.

With the advent of acquired immunodeficiency syndrome (AIDS), the field of antiviral agent research has blossomed. It has gone from a handful of agents against influenza and herpes simplex to a large number against a variety of viruses, particularly the agent of AIDS, human immunodeficiency virus (HIV). However, the advances are not without problems, the principal one being antiviral resistance, which the viruses are capable of developing readily.

A pre-eminent scholar and one of the first to recognize the problem has put together an excellent text on the subject. Douglas Richman has assembled an impressive list of experts who have contributed chapters for this book. It covers all aspects of resistance from mechanism of action to clinical aspects. It is therefore of value to both the basic scientist and the clinician. Although, understandably, half the book is devoted to HIV, the first half addresses picornaviruses, influenza, herpes simplex, varicella-zoster and cytomegalovirus, where resistance poses a problem.

The introductory chapter by Richman lays the groundwork for the ensuing chapters. Clinical failure in patients is not necessarily due to drug resistance; it may be due to other factors and the two should be separated. To confront the challenge of resistance, new strategies need to be developed, in addition to seeking new drugs. The use of combination drugs is an obvious answer and one which is proving effective. We also need to better understand the pharmacological characteristics of the drug and how to effectively use combinations which would offset the development of resistance. Since the development of resistance is so common, it is clear that monitoring for the emergence of resistance is a critical aspect of all stages of drug development.

As pointed out in a chapter by A.G. Mosser and R.R. Rueckert, "the goal of drug design is to produce an inhibitory molecule with a target specificity and binding affinity high enough to eliminate drug toxicity". If the drug is highly specific and potent, the development of resistance is less likely. As indicated by F. Hayden, the development of resistance is rarely accompanied by the development of a more virulent strain; once the drug pressure is removed, the virus usually reverts to the wild strain. D.M. Coen points out that most laboratory and clinical isolates of herpes simplex already contain drug-resistant mutants at a level of about 0.01–0.1% which emerge as the predominant virus in the presence of drug. K.K. Biron and F. Baldanti offer an excellent chapter on the mechanism of nucleoside and foscarnet resistance.

A reviewer could be easily tempted to go through the book highlighting the excellent contributions of each chapter. This would result in an overly long review. Suffice it to say that there are no weak chapters and each offer considerable insight into the problem and much for

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the reader to contemplate. It is a readable and excellent compendium on the subject of antiviral agent resistance and of great value to the reader.

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