

Book Review

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Principles of general and autonomic pharmacology

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Recently, there has been an explosion of knowledge about the molecular mechanisms involved in drug absorption, metabolism, excretion, and drug action. The subjects of molecular biology and genetics are beginning to have a substantial influence on drug development, disposition, and action. As a professor of pharmacology in a medical school involved in teaching undergraduate medical students, one of my challenges is deciding which of these recent developments and concepts are “must know” areas for medical students, with a significant impact on how they use medicines in future practice, and how to present such information in a simple manner.

General principles of pharmacology and autonomic pharmacology are difficult subjects for health science students, but a clear understanding of these topics is essential to ensure rational use of medicines during their future practice. Dr Robert Rodgers, a professor of pharmacology at the University of Rhode Island in the United States, recently published a revised edition of his book dealing with general and autonomic pharmacology. The book has three chapters predominantly dealing with pharmacokinetics, pharmacodynamics, and autonomic pharmacology. Drug absorption and distribution is the focus of the first chapter and Table 1 succinctly summarises different routes of drug administration.

Through diagrams and tables the book brings together information about different molecular transporters operating at different sites in the body and cells ranging from the enterocytes to the hepatocytes. Readers are introduced to various transport molecules, hepatic drug metabolising enzymes, and renal drug transporters. The section dealing with genetic polymorphisms and drug metabolism is well written. The hypolipidemic drug simvastatin has been presented as a prototype to illustrate the various pharmacokinetic processes. However, I am not sure that all

the details mentioned are necessary for undergraduate medical students, though pharmacy students and postgraduate students in pharmacology may benefit from the details.

The second chapter deals with “assessing drug action”. The various main types of receptors and their different subtypes are discussed extensively. There are excellent diagrams of the signalling pathways and second messenger systems operating in various receptors. The experimental determination of agonist potency and of the types of antagonism may be of interest to pharmacy and postgraduate students. The concept of spare receptors and their influence on agonist responses is interesting.

The basic principles of the autonomic nervous system are presented clearly at the beginning of Chapter 3. Table 4, which shows the dominant control in various organs and systems either by the cholinergic and the noradrenergic parts of the autonomic nervous system, is important for predicting the effects produced by ganglionic blockade on various organs. The chapter then explores various autonomic drugs (both agonists and antagonists) acting on the cholinergic and adrenergic receptors through well-formulated tables. The chapter ends with a brief presentation of skeletal muscle relaxants as an appendix, and the book ends with a detailed list of articles and a few books that may be useful for further reading.

This book provides a logical step-by-step guide to understanding the basics of drug action and the autonomic nervous system from a pharmacologic viewpoint. Certain details and concepts mentioned may be of interest mainly to pharmacy and postgraduate students. The book provides an overview of ANS drugs, but does not discuss individual drugs in enough detail to enable readers to be able to use these drugs in practice. The primary focus of the book seems to be on concepts and principles governing drug action and how recent developments in molecular biology have impacted these aspects of pharmacology.

Overall the book provides a good overview of general and autonomic pharmacology and can be useful for readers wanting to know about these important aspects.

About the book:

Robert Rodgers. Principles of general and autonomic pharmacology. Paperback ISBN: 978-1-62131-148-5, 138 pages, Full Colour ©2014. Published by Cognella Academic Publishing.

The book may be purchased directly from <https://titles.cognella.com/principles-of-general-and-autonomic-pharmacology-9781621311485.html>.

The print version is \$82.95. An electronic version is not available for purchase at this time.
