BOOK REVIEWS

Sara E. Rosenbaum. *Basic Pharmacokinetics and Pharmacodynamics: An Integrated Textbook and Computer Simulations.* Hoboken, NJ: John Wiley & Sons, Inc.; 2011, 430 pages, \$59.95 (paperback), ISBN 9780470569061.

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Before reviewing this textbook, I was skeptical regarding what it could offer, as I have a shelf full of various pharmacokinetics textbooks. However, I was pleasantly surprised. *Basic Pharmacokinetics and Pharmacodynamics: An Integrated Textbook and Computer Simulations* by Dr. Rosenbaum is clearly and well written, concise, and easy to understand. Each chapter includes a detailed outline to help students see the structure and organization of the material. Equations and concepts are accurately and understandably presented, with a logical development toward increasingly complex phenomena, such as multiple oral dosing and nonlinear pharmacokinetics. Examples, tables, figures, and problem numbers are prefixed with their chapter numbers, facilitating instructor references to them. Exercises are appropriate for the content of the chapters. Simulation exercises are directly related to the text, and referred to in the text, useful to demonstrate concepts. It also includes discussion of clinically relevant solute carriers and ATP-binding cassette transporters, as well as drug metabolizing enzymes. Students will find 4 helpful appendices as well. Further details regarding the structure and content of the book are available in the table of contents found online at amazon.com.

As mentioned above, there are already many such textbooks available, so how does this one compare? One of the most difficult aspects of pharmacokinetics for students is usually clearance concepts. In this text, clearance including both clearance concepts and the mechanisms of hepatic and renal clearance, is covered in only 1 chapter, thus providing a rather brief treatment overall. However, more details regarding the mechanisms of transport and metabolism are covered in other chapters. So if the

chapter on clearance is taken in isolation, it may appear incomplete. Also, this reviewer is not fully convinced of the educational utility of the 3 fictitious drugs (lipoamide, nosolatol, disolvprazole) vs. actual drugs. Typically most textbooks exclusively discuss actual drugs, so presenting a continuing theme of these 3 fictitious drugs throughout the book is relatively novel. For didactic purposes, this approach may give a simplified reference by which beginning students can compare pharmacokinetic behavior of other drugs (ie, drug X acts just like lipoamide. . .). However, future editions of this textbook may consider revisiting some aspects of this approach, possibly by including other fictitious drugs to avoid oversimplification.

Two chapters on basic pharmacodynamics and integrated pharmacokinetic-pharmacodynamic models are a valuable addition not found in most basic pharmacokinetic textbooks. Students will also benefit from the online simulations which demonstrate the effects of changing certain pharmacokinetic variables on a drug's concentration-time profile. Although the graphical programming of these simulations is not flashy, it provides a useful approach to help students understand the concepts. Together with the available spreadsheets, students will appreciate the integration of this textbook with technology. In comparison with the premier textbook *Applied Biopharmaceutics & Pharmacokinetics* (5th edition.; Shargel, Wu-Pong, & Yu), this textbook is not as detailed, contains less on bioequivalence and less on clinical aspects of pharmacokinetics. However, it better covers the Biopharmaceutical Classification System, drug transport, and includes simulations and spreadsheet templates freely available online.

In summary, good integration of this textbook with computer exercises presents a fresh didactic approach appealing to a new generation of students. It is definitely a strong competitor in an already saturated market. Instructors will find it an excellent text for a first course in pharmacokinetics at professional and/or graduate levels, which is competitively list-priced at \$59.95.

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