Book Reviews

Basic Clinical Pharmacokinetics, Second Edition. By Michael E. Winter. Applied Therapeutics, Inc., Vancouver, Washington, 1988, xvi + 416 pp., $26.50 (paperback). ISBN 0-915486-08-3.

This book bridges the gap between classical pharmacokinetic textbooks which are filled with mathematical derivations of equations and clinical textbooks which neglect pharmacokinetic concepts. The author has managed to balance these areas, developing the principles of pharmacokinetics while also covering clinical aspects of drug monitoring and dosage individualization procedures.

The book is organized into two main parts. The first, general part consists of concise discussions of core pharmacokinetic issues such as bioavailability, distribution, and protein binding. Important equations are given relating the main pharmacokinetic parameters, such as volume of distribution, clearance, and fraction unbound, to the measured plasma concentrations of drugs. Frequently, these are supported by clearly presented and stepwise, numerically solved problems. Thus, the mathematically less proficient user learns to apply pharmacokinetic equations to optimize drug treatment. Graphic information is presented in an original manner. Many figures are didactive rather than rigorously scientific, illustrating clearly the main kinetic processes.

Physiologic pharmacokinetic approaches are stressed, and the reader learns about qualitative and quantitative relations of clearances and volumes of distributions first, before classical kinetic parameters such as half-life and elimination rate constants are introduced. Frequent use of particular drug examples makes the book a reference source for practicians, students and scientists. Basic pharmacokinetic models are presented as tools for calculating drug plasma concentrations, mostly with the use of a simple one-compartment model. The shapes of pharmacokinetic profiles are discussed arising from clinically important modes of drug administration: bolus iv, intermittent bolus iv, iv infusion, and combinations of these. Algorithms of dosage calculation and individual dosage regimen adjustment are given. Many useful "rules of thumb" can be found, such as that during chronic drug administration in most clinical situations, drug levels approach steady state after three to four half-lives.

Similarly, all important equations relating drug concentrations and kinetic parameters are given for multiple-dosing regimens. In the section titled, "Selecting the Appropriate Equation," the author helps the reader choose from the pool of available algorithms to perform a clinical pharmacokinetic task such as the determination of the right time to obtain a clinical sample.

Further, clinical pharmacokinetic decision schemes in the form of flowcharts serve the user as a guide to data acquisition, dosage calculation, and adjustment.

The second part of the book provides chapters describing the clinical pharmacokinetics of selected drugs or groups of drugs. To the classical examples such as phenytoin, theophylline, and procainamide, the author has added, in the second edition, chapters on aminoglycosides, carbamazepine, ethosuximide, lithium, methotrexate, primidone, salicylates, valproic acid, and vancomycin. Each presents relevant pharmacokinetic information, e.g., bioavailability, volume of distribution, clearance, and half-life, and topics of particular interest, such as toxicity related to intrathecal methotrexate, concentration-dependent half-life of phenytoin, clinical significance of NAPA concentration after procainamide dosing, and estimation of theophylline dosage for obese patient. For each selected drug, several case reports show the reader the strategy of approaches in clinical pharmacokinetics.

The book ends with useful appendices which include a summary of equations used throughout the text, a glossary of most important pharmacokinetic terms and symbols, nomograms, 422 references, and an exhaustive index. It makes no claim to be a sole resource for a student or a professional in building pharmacokinetic skills, yet it is one of the better tools to approach such skills and put them to work.

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Protein Purification, Principles, High Resolution Methods, and Applications. Edited by Jan Christer Janson and Lars Ryden, VCH Publishers, Cambridge, Weinheim, New York, 1989, 502 pp.

There are several excellent reference-style books currently available in protein chemistry. *Protein Purification* provides separate emphasis for chromatographic versus electrophoretic applications and has considerable detail in such areas as affinity chromatography and chromatofocusing. In addition, there are innovative chapters on high-resolution reverse-phase chromatography, hydrophobic interaction chromatography, protein blotting, and capillary electrophoresis. The book is well illustrated and includes photographs of equipment required in protein purification and numerous tables with useful reference information. Given the detailed information provided throughout the text, cross-referenced appendices would have been a welcome addition. Nonetheless, this book is one that protein enthusiasts will prefer to keep close to the bench.

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