

anti-anginal, anti-hypercholesterolaemic and anti-shock activities), herbs affecting the nervous system (e.g. those with anaesthetic and muscle relaxing, sedative and hypnotic, anti-convulsive, analgesic, antipyretic, antirheumatic and central stimulating properties), herbs affecting the alimentary systems (e.g. those with stomach and "wind" dispelling, promoting digestion, antacid and anti-ulcer, laxative, anti-diarrhoeal, emetic and anti-emetic, choleric and anti-hepatitis, and tonic and energy supporting actions), herbs affecting the respiratory system (e.g. those with anti-tussive anti-tensive, expectorant and anti-asthmatic properties), herbs affecting the genitourinary system (e.g. those with diuretic, milk-promoting and anti-fertility actions), herbs affecting the haematopoietic system (e.g. those promoting blood formation, and with haemostatic and anti-stasic actions), herbs affecting the endocrine system (e.g. those affecting the thyroid gland, adrenal cortex, and with anti-diabetic action), and chemotherapeutic herbs (e.g. those with antibacterial, antiviral and antifungal, antitubercular, antiseptic and disinfectant, anthelmintic, anti-amoebic and anti-trichomonal, antimalarial and anti-cancer properties). The observations and related results are quoted from studies based on the use of crude extracts from these herbs.

The book arrangement is clear and neat but spoils somewhat

by the Chinese characteristics which should have been printed by Chinese typing or computer printing. Technology using Chinese word-processing is available. Another irritating feature, from a bilingual viewpoint, is that the English translation of the Chinese herb names is not consistent with the phonetics used in China at present (i.e. Putonghua). The phonetics used in the book are based on Mandarin, hence, spelt differently. For instance, the famous herbal classic of the Divine Plowman, which is the earliest known work on Chinese herbs, is translated as Sheng Nung Ben Cao Chien in the book. The accepted translation (probably quoted) in many other references is Sheng Nong Ben Cao Jing. I hope in the next edition the translations, especially for the chosen herbs, will be revised with herbal names. Confusion could then be minimized.

This book is a start for readers who are English speaking to gain an appreciation of popular TCM herbs which are often used in combinations by TCM practitioners. According to the "Foreword", the book has taken more than five years to compile. Professor Huang has made a great effort to bridge the gap of knowledge on TCM. It is a valuable text for those who are interested in TCM herbs.

KELVIN CHAN
LIVERPOOL JOHN MOORES UNIVERSITY, UK

J. Pharm. Pharmacol. 1994, 46: 160

© 1994 J. Pharm. Pharmacol.

Book Review

Drug Toxicokinetics

(Drug and Chemical Toxicology Series/9)

Edited by Peter G. Welling and Felix A. De La Iglesia

Published 1993 Marcel Dekker, Inc., New York

432 pages

ISBN 0 8247 9019 7 \$150.00

The title of this book, 'Drug Toxicokinetics' sounded like a contradiction in terms. My initial reaction was that toxicokinetics referred to chemicals other than those with a therapeutic use, and pharmacokinetics to drugs. However, a little further thought, stimulated by this book, suggests that it is useful to talk of drug toxicokinetics when one is looking at the kinetic and metabolic processes underlying the euphemistically named side-effects of potential therapeutic agents. Predictably, these processes are similar to those seen for other chemicals.

The Editors state that this work is intended as a manual or textbook rather than one dwelling on basic concepts. Chapters are based around three themes: basic analytical, kinetic and dynamic considerations; toxicokinetic studies for the development of basic knowledge required for all drugs; and toxicokinetic studies relating to specific compounds, grouped by therapeutic class. The classes covered are anti-cancer compounds, chemical carcinogens (signs of other chemicals slipping in?), compounds for use in atherosclerosis, CNS compounds and antibacterials. This seems to have led to a dichotomy in the approaches used by the various authors. One group has followed the manual type approach concentrating on 'how to do' with a minimum of theory and examples, the other seems to have carried out detailed analyses for selected examples. The latter approach is particularly successful in the chapters concerned with drugs from different therapeutic classes.

The approach is very much American in origin, with many of the authors of individual chapters coming from one company. The choice of therapeutic areas discussed may reflect this bias. Much of the toxicokinetic information for drugs is obtained as part of the pre-marketing regulatory package and is aimed at the patient. Such detailed information is only rarely acquired for most other chemicals. This is because individual patients are

deliberately exposed to drugs whereas human exposure can be minimized to a much greater extent for those manufacturing and using chemicals, including those intended for drug use. However, information obtained for drugs should be extrapolatable to people exposed to other agents and in other situations as well as to patients.

The book is targeted to effects seen in individuals. Human variability is therefore explored in depth. The book does not include a discussion of strain differences in animal metabolism and kinetics and how this relates to overall inter-individual variability in toxic responses within a (non-human) test species. It would be interesting to see how this comparison translates to differences in man.

It is easy to nit-pick and every reviewer will have predilections in what he or she would like to see. I would have preferred to see a little more on basic pathophysiology and its influence on routes and rates of excretion. Oral and parenteral administration dominates in human medicine, but I thought that greater detail concerning the physiological basis and kinetics of inhalation, exhalation and skin absorption might have been useful. For example, particle size and deposition site in the lung, the role of the tracheo-bronchial escalator and the relationships (for gases and vapours) of lipid solubility, lung ventilation rate and blood flow perhaps deserved greater attention. It lies behind understanding absorption (and exhalation) of inhaled drugs, including anaesthetics.

Overall, the book was a very interesting compilation of information which will be useful to everyone working on the development of new drugs. It also provides a summary of the relationships of toxicity and toxicokinetics for several interesting therapeutic areas. The book does not claim to be a basic text, and is not user friendly for those wishing to read it as such. Nevertheless, because the ideas and examples (many of which are new) deserve wide circulation among those involved in the experimental side of the development of novel drugs, it is worth a place in the library.

PAUL ILLING
HEALTH AND SAFETY EXECUTIVE BOOTLE, UK
(Views expressed are personal opinions and should not be taken as those of the Health and Safety Executive.)