50 Heymann, E. and Mentlein, R. (1981) *Methods Enzymol.* 77, 333–344
51 Halpin, R. A. *et al.* (1993) *Drug Metab. Dispos.* 21, 1003–1011
52 Wang, R. W. *et al.* (1991) *Arch. Biochem. Biophys.* 290, 355–361
53 Dain, J. G., Fu, E., Gorski, J., Nicoletti, J. and Scallen, T. J. (1993) *Drug Metab. Dispos.* 21, 567–572
54 Transon, C., Leemann, T. and Dayer, P. (1996) *Eur. J. Clin. Pharmacol.* 50, 209–215
55 Pan, H. Y. *et al.* (1990) *J. Clin. Pharmacol.* 30, 1128–1135
56 Oie, S. (1986) *J. Clin. Pharmacol.* 26, 583–586
57 Pentikainen, P. J. *et al.* (1992) *J. Clin. Pharmacol.* 32, 136–140
58 Vgontzas, A., Kales, A., Bixler, E. O., Manfredi, R. L. and Tyson, K. L. (1992) *Clin. Pharmacol. Ther.* 50, 730–737
59 Mauro, V. F. (1993) *Clin. Pharmacokinet.* 24, 195–202
60 Stone, B. G., Evans, C. D., Prigge, W. F., Duane, W. C. and Gebhard, R. L. (1989) *J. Lipid Res.* 30, 1943–1952
61 Scandinavian Simvastatin Survival Study Group (1994) *Lancet* 344, 1383–1389
62 Shepherd, J. *et al.* (1995) *New Engl. J. Med.* 333, 1301–1307
63 Keidar, S., Aviram, M., Maor, I., Oiknine, J. and Brook, J. G. (1994) *Br. J. Clin. Pharmacol.* 38, 513–519
64 Grandaliano, G., Biswas, P., Choudhury, G. G. and Abboud, H. E. (1993) *Kidney Int.* 44, 503–508
65 Gerson, R. J. *et al.* (1989) *Am. J. Med.* 87, 29S–38S
66 MacDonald, J. S. *et al.* (1988) *Am. J. Cardiol.* 62, 16J–27J
67 McTavish, D. and Sorkin, E. M. (1991) *Drugs* 42, 65–89
68 Frishman, W. H., Zimetbaum, P. and Nadelmann, J. (1989) *J. Clin. Pharmacol.* 29, 975–982
69 Newman, T. J., Kassler-Taub, K. B., Gelarden, R. T., Korzin, E. G. and DeVault, A. R. (1990) *J. Drug Devel.* 3, 275–281
70 Jokubaitis, L. A. (1994) *Am. J. Cardiol.* 73, 18D–24D
71 Lovastatin Study Group III (1988) *J. Am. Med. Assoc.* 260, 359–366
72 Phan, T. *et al.* (1995) *J. Neurol. Neurosurg. Psychiatry* 58, 625–628
73 Ayanian, J. Z., Fuchs, C. S. and Stone, R. M. (1988) *Ann. Int. Med.* 109, 682–683
74 Chrysanthopoulos, C. and Kounis, N. (1992) *Br. Med. J.* 304, 1225
75 Tobert, J. A. (1994) *Am. J. Med.* 96, 300–301
76 Schmidt, J., Schmitt, C., Hockwin, O., Paulus, U. and Bergmann, K. V. (1994) *Ophthal. Res.* 26, 352–360
77 Black, D. M., Lamkin, G., Olivera, E. H., Laskarewski, P. M. and Stein, E. A. (1990) *J. Am. Med. Assoc.* 264, 1105
78 Harrison, R. W. S. and Ashton, C. H. (1994) *Br. J. Clin. Pharmacol.* 37, 231–236
79 Roth, T. *et al.* (1992) *Clin. Cardiol.* 15, 426–432
80 Farnsworth, W. H., Hoeg, J. M., Maher, M., Brittain, E. G. and Sherins, R. J. (1987) *J. Clin. Endocrinol. Metab.* 65, 546–550

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BOOKS

The other EDRF

Endothelium-Derived Hyperpolarizing Factor

edited by P. M. Vanhoutte,
Harwood Academic Publishers, 1996. £69.00 (xxi + 338 pages)

ISBN 3 7186 5929 8

There can be few pharmacologists who are not familiar with the pivotal role of the endothelium in vascular control through the release of both NO and prostacyclin. However, it is clear that the endothelium also releases at least one other, somewhat neglected, vasorelaxant, the endothelium-derived hyperpolarizing factor (EDHF). In this book Professor Vanhoutte, one of the pioneers of EDHF biology, has brought together short contributions from many of the key researchers in this exciting field, arising from the First International Symposium on this novel agent held in 1995. The book is also the first of a new series dealing with endothelial biology.

In the space of a little over 300 pages Professor Vanhoutte has put together a comprehensive story of EDHF, from its initial identification in the late 1980s to some of its physiological and pathophysiological roles. Central to the EDHF story is its chemical identity, which is an area of great debate. This is reflected in the balanced, multiauthor approach to the book in which the reader is presented with several chapters by different groups, providing evidence that EDHF is a cytochrome P450 monooxygenase-derived metabolite of arachidonic acid via the epoxygenase pathway. These are followed by a chapter ruling out the involvement of these mediators in certain vascular preparations; a later chapter then hints at the involvement of C-type natriuretic peptide. Necessarily, a book centred on a fast-moving area will be dated by the time of publication. It is now known that some of the cytochrome P450 inhibitors used to support the involvement of the epoxygenase pathway are, in fact, K^+ channel blockers, and so inhibit EDHF at its site of action rather than synthesis, thereby weakening the argument that these substances are EDHF(s). Furthermore, a recent, novel hypothesis, that EDHF is an endogenous cannabinoid derived from arachidonic acid, has also emerged since the book's publication.

A second example of the balanced approach that Vanhoutte has managed to achieve is the inclusion of chapters that question the very existence of EDHF as a distinct entity. Although the evidence in the book compels the reader to believe that EDHF is a humoral factor in its own right, recounting reports of its successful bioassay, some of the contributors provide evidence to indicate that both NO and prostacyclin are themselves EDHFs. However, anyone who has witnessed that, even in the presence of NO synthase and cyclooxygenase blockade, endothelium-dependent vasorelaxants cause substantial relaxation, would find this proposition wanting. Indeed, Professor Vanhoutte concludes that the criteria of NO and prostanoid-independent, but endothelium-dependent relaxation, should be used to define EDHF.

A consensus to emerge from the book is that EDHF plays a substantial role in resistance vessels, where it appears to exceed that of NO. A second, attractive, hypothesis to appear is that EDHF becomes upregulated on loss of NO and so may compensate for this deficit, such that

EDHF may be of greatest functional importance in disease states. Research published since the compilation of this book would certainly support this.

The book sets the scene for publicising the role and function of EDHF, which will undoubtedly become an area of immense interest over the next few years once it is widely realized that it acts in partnership with NO. The book also points the way to future research, for example it only contains scant reference to EDHF in the context of the human cardiovascular system; clearly this is a fertile area for investigation. The book should be of great interest and value to anyone concerned with endothelial research or teaching advanced cardiovascular pharmacology; it brings together the past decade of research, and provides the arguments and evidence on which to build future work.

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Picture this…

Lippincott's Illustrated Reviews: Pharmacology (2nd edition)

by Richard A. Harvey, Mary Mycek and Pamela C. Champe
Lippincott-Raven, 1996. £21.50
(480 pages)

ISBN 0397 51567 79 (paperback)

The second edition of this textbook, appearing five years after the first, represents an update rather than a major revision. One welcome improvement is that answers to questions posed at the end of each chapter now appear immediately after the question rather than at the back of the book. An addition to the second edition is an appendix of ten case studies which are well presented with appropriate questions and answers. Other characteristics of the first edition remain: a clear layout, plenty of well-designed illustrations, cartoons to help the student remember adverse drug reactions and brave attempts to give phonetic pronunciations as, for example, medroxyprogesterone (meh DROX ee proe JESS ter one).

I have no serious criticisms of the book although I prefer the term adrenergic (cholinergic) to refer to the nerve, with the drugs being either adrenoceptor (cholinoceptor) agonists or antagonists. As far as students in the UK are concerned, it is unfortunate that the terms adrenaline and noradrenaline do not appear, even in the index. Nitric oxide is also absent from the index but is mentioned in the mechanism of action of the organic nitrates which perhaps emphasises the point that this book is written to 'summarize the essentials of medical pharmacology'.

In a small survey of likely consumers the book was well received with all students commenting favourably on the layout which was described as being 'light' and 'non-threatening'. This is achieved by the use of wide margins which are either empty or occupied by diagrams or cartoons. According to the authors the book is for 'students in the health-related professions who are preparing for licensure examinations and professionals who wish to review or update their knowledge'. Students taking a second year pharmacology course stated that there was insufficient information for a ten minute presentation on an individual drug, which confirms my impression that it is an appropriate text for first year students and a user friendly book for revision of the basics for other students.

I advise new undergraduates to browse before purchasing a pharmacology text book and I anticipate that several will opt for this new edition of Lippincott.

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