book reviews

Horizons in medicine 18

Edited by Jonathan Rhodes. Royal College of Physicians, London 2007. 314 pp. £30.00 (£20.00 for Fellows and Members).

'Increasing pressures on clinicians sometimes squeeze some of the fun out of clinical medicine', writes Jonathan Rhodes, editor of this admirable collection of clinical review articles. The articles have been assembled in 25 chapters grouped under headings of 12 major medical specialties, to which are added the text of three prestigious College lectures, all originally presented at the popular 43rd Advanced Medicine Conference held at the College in 2006. Each section ends with a self-assessment questionnaire (answers provided), and each article includes 10–12 up-to-date references. There is a sense of excitement and innovation in many of the articles, which help to restore the 'relevance of experimental medicine to clinical practice', and at the same time help to bridge 'the worrying division between clinical practice and academic medicine'.

Chapter headings give some sense to the style and content of this book – 'novel therapies', 'management', 'recent progress' – indicating that it is chiefly about clinical advances for practising physicians. Type 2 diabetes, rheumatoid arthritis, some hypertensive syndromes, stroke and sepsis are just some examples of covered subjects. It is exciting to discover new aspects of the physiology of 'second wind angina', or gas exchanges in chronic obstructive pulmonary disease which are driving the development of new treatments. The concept of the 'heart as a self-renewing organ' and the potential of injected stem cells to improve cardiac function must raise exciting prospects. To read of the influence of inflammation of the development of malignant diseases or the genetics of Parkinsonism are advances which could lead to future clinical developments.

Translation of research from bench to bedside, together with the key role of clinicians to move research from bedside to bench, are critical issues of the day. Mitochondrial disorders are probably not foremost in the minds of most of us, yet in this article physicians will be astonished to learn that they are among the most common metabolic diseases (listed over two whole pages of this book) affecting multiple organ systems in at least one in 5,000 of the population, and caused by impaired oxidative phosphorylation leading to adenosine triphosphate depletion. Many physicians are also probably unaware that hypoxia can alter molecular structure by its effect on hypoxia-inducible factor (HIF) which in turn regulates genes with key functions in a broad range of processes, ranging from angiogenesis to vasomotor function and much else. These profoundly important observations were presented by Professor Peter Ratcliffe in his Croonian lecture, and raise the potential to develop agents which might augment HIF activity and could be used to treat hypoxic or ischaemic conditions.

'The chase of ideas' (a phrase often used by the late David Pyke) is crucial to the generation of new research. Specialist physicians reading of advances developing in so many fields other than their own must result in cross fertilisation of ideas. This volume and its predecessors do much to enhance some of the thrill of investigative medicine, and the necessary sense of fun and enjoyment in clinical practice.

PETER WATKINS
Previous Editor, Clinical Medicine

Study design and statistical analysis: a practical guide for clinicians

Mitchell Katz. Cambridge University Press, Cambridge 2006. 200 pp. £26.99.

With the increasing pressure on clinicians to undertake research as part of their busy day-to-day lives comes a need for these individuals to have an appreciation of study design and an understanding of basic statistical concepts. While some are lucky enough to work in an environment with good statistical support and others have managed to develop close links with statistical colleagues, the majority of individuals are unlikely to have this luxury and will have to try a bit of 'do-it-yourself'. As most medical schools provide only fairly basic training in statistical methods (and, for practical reasons, little of this is genuinely 'hands-on'), it is usually up to the individual to reacquaint themselves with statistical methodology. Unfortunately, many of the 'classic' statistics text books that prop up library shelves were written in an era when people had little access to computers, the internet and simple-to-use software packages, and readers were expected to get some perverse joy out of ploughing through pages of Greek letters. Today's clinical researchers, however, have different needs: much as we would hope that they would want to fully appreciate the whys and wherefores of any analysis, we have to be pragmatic and recognise that most simply want to be told what to do and when to do it.

Study design and statistical analysis is precisely that – a book aimed at clinical researchers conducting their own research who need to know how to design their studies, manage their data, perform basic statistical analyses and publish their results. The author is both a clinician and statistician with many years experience of collaborating with colleagues on a wide variety of projects and teaching statistical concepts to students. In his own words, his aim is to 'put the fun first' by including motivating clinical examples at the start of each section and regularly throughout the text. He has tried to avoid providing too many formulae on the basis that most people will now use statistical packages to perform all analyses and will not feel the need to analyse their data with a calculator from raw principles.

The book is ordered chronologically, following the steps that are usually employed in any research study. Hence, the book starts with chapters on study design and data management, followed by