

Eur J Cancer, Vol. 28A, No. 4/5, p.999, 1992.
Printed in Great Britain
0964-1947/92 \$5.00 + 0.00
Pergamon Press Ltd

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Book Reviews

The Biology & Clinical Applications of Interleukin-2

Edited by R.C. Rees. Oxford, IRL Press, 1990, 181 pp., £22.50.
ISBN 019 963137 9.

THE CYTOKINE interleukin-2 (IL-2) has a controversial but potentially exciting therapeutic potential. In recent years advances in the biology of this cytokine and its receptor proteins, and the availability of large quantities of recombinant cytokine, has facilitated both experimental and clinical studies particularly relating to malignant disease. A timely meeting at the University of Sheffield discussed the biology of clinical application of IL-2 and the salient features of this meeting are described in this concise and useful book edited by R.C. Rees of the University of Sheffield Medical School. Chapters submitted by presenters at this meeting cover the structure of IL-2 and its receptor complex. The generation of lymphokine activated killer (LAK) activity and regulation of T cells is then discussed along with an interesting theoretical chapter on the range of IL-2 action, the constraints that the architecture of the immune system put upon this range, and the implications for therapeutic administration of exogenous cytokine. Target cell recognition by natural killer cells and cytotoxic T lymphocyte (CTL) is extensively covered by Kärre. Discussion of the clinical application is confined to malignant disease, starting with preclinical data in animal models of renal cell carcinoma from Wiltrout, and studies in B16 melanoma and mouse sarcoma from Herberman. The clinical chapters include detailed description of the production of effector cells, including LAK, adherent LAK, tumour infiltrating lymphocytes (TIL), CTL, and helper T cells from cancer patients' peripheral blood, lymph node and tumour. Then results from a series of clinical trials of IL-2 alone, or in combination with other agents, particularly cytokines, are described. In all, over 5000 cancer patients have been treated with IL-2 over the past 6 years, and the chapters in this book provide a useful guide to many of the important trials. There are chapters from the groups of Rosenberg and West, two of the major contributors to the development of this therapeutic approach.

Although this field is rapidly moving, the contents of this book appear to be relevant to those interested in the clinical use of IL-2 in 1992. Some discussion of other therapeutic applications of this cytokine, for instance, as adjuvant to vaccination and in immune deficiency, would have widened the scope of this book. However, I think this book provides a useful guide to this interesting area of experimental cancer therapy, particularly for those clinicians and scientists who are not familiar with the field.

F. Balkwill
Imperial Cancer Research Fund
PO Box 123
Lincoln's Inn Fields
London WC2A 3PX
U.K.

Manual of Quantitative Pathology in Cancer Diagnosis and Prognosis

Edited by J. P. A. Baak. Springer, Heidelberg, 1991. 616 pp., DM 350.00. ISBN 3540512 756.

THIS USEFUL volume brings together a large amount of up-to-date information on the use of quantitative methods in histopathology. There are some 41 contributors to the work with the major input from the editor, Jan Baak.

Histopathological diagnosis can reasonably be described as both an art and a science and it is not surprising that even experts may differ over the classification of individual tumours. Histological grading of tumours causes even greater dissent among histopathologists and, naturally, they have increasingly been tempted to use quantitative methodology rather than subjective impressions to resolve their differences. Quantitation in microscopy contains many pitfalls for the unwary and this manual provides at least some guidance through the various minefields.

In the majority of the chapters the authors have resisted the temptation to "hard sell" the various methodologies described. I particularly liked chapter 3 on "Diagnosis—Error Sources" which draws our attention to the ways in which we can provide the clinicians with information which may lead them to give the patient inappropriate treatment. Chapter 5 takes the reader into the area of prognostic factors and proposes that quantitation has an important role in this respect.

The second section of the book consists of a series of authoritative accounts of the techniques and equipment which are now available for quantitation including, in many cases, how one should set out to assess the equipment before you buy it and the potential sources of error in the various types of equipment. Techniques dealt with include basic morphometry, image cytometry, digital image processing, laser microscopy, flow cytometers and 3-dimensional reconstruction.

The third part of the book deals with the application of the various techniques and it is interesting here to compare the conclusions at the end of image cytometric DNA analysis (chapter 15), which are very positive, with flow cytometry (chapter 17) where the final remarks are that a lot more study is required before firm conclusions can be drawn. The problem, of course, is that image cytometric DNA analysis is very much slower than flow cytometry. Chapter 18 consists of a detailed analysis of the use of both image and flow cytometry in various tissues and tumours. As with all the earlier parts of the book this chapter is very well referenced and there is an abundance of basic data here which can be used as a base for further research studies. However, the problem here is that much of the data seems to have been included because it exists and not because it is particularly important or significant. Thus, in the differentiation of glial tumours from secondary carcinoma in the brain, an epithelial marker of the cytokeratin variety is likely to be more useful than a quantitation method, yet this is not mentioned.

I am rather sceptical about the practical use of artificial intelligence systems for assistance with histopathological diagnosis in view of the time required to prepare them and consequent costs, but the case is well set out in chapter 19. There is no doubt that setting up an expert system would be a superb educative experience. Perhaps histopathologists should have