

BOOK REVIEW

FREE RADICAL REACTIONS IN MEDICINE

J. FEHÉR, G. CSOMÓS and A. VERECKEI

Springer-Verlag (Berlin), 1987, 199 pages

This book is a brief introduction to free radicals and free radical reactions, chiefly lipid peroxidation, followed by an extensive survey of disease states in which free radicals have been implicated and finally some thoughts on antioxidant therapies. It is intended for medical readers. As a medical reader myself I finished it with a sense of bewilderment. Is all pathology free radical pathology? The short answer to this question is no. In most instances all we have to go by is suspected evidence of involvement of poorly specified reactive oxygen intermediates (to use the preferred terminology of this book). We are on better ground where we have activation of granulocytes or postischaemic states but even so we have no good evidence that any human disease has a free radical aetiology. I am of course thinking of classical diseases not carbon tetrachloride poisoning, for instance. The term "free radical diseases" is a misnomer and can be misleading.

My criticism of this book is that it comes down to readily on the side of free radical aetiology for many clinical conditions. To be fair to the authors they do strike a note of caution in the epilogue but only after many strong statements in the main body of the book. Consider, for instance, the question of lipid peroxidation. Cells and tissues damaged by any mechanism probably peroxidize more rapidly than normal. Increased lipid peroxidation may be a non-specific consequence of almost any tissue damage which has to be excluded before any idea of free radical aetiology can be entertained. One might ask: Has any useful concept emerged regarding free radicals and disease? Free radicals are indeed generated in many pathological conditions so far as we can tell. It seems that the prooxidant-antioxidant balance of cells, tissues and extracellular fluids is rather easily upset. It is not clear why this should be so. Once free radicals are formed in excessive quantities they interact with ongoing pathological processes in ways that remain to be understood. One can find in this book a number of free radical ideas in pathology that remain to be more fully explored. A case in point which has now been an open question for several years is the generation of a chemotactic factor from plasma lipid by the action of granulocytic superoxide. Other areas, to mention a few, include interactions of free radicals with modulators of the immune response, the possibility of a link between lipid peroxides and atherosclerosis, and the complex field of carcinogenesis.

This book is intended to stimulate interest in free radical research in medicine. I think it does achieve this purpose but it must be read with an open mind. Thorough readers will find in it many irritating typographical errors. The section summaries are a useful feature combining main points of the text and provocative comment. The glossary is another excellent idea of the book but little effort has gone into it. The compilation of literature references is quite wide and very useful to have. The subject index is extensive. On the whole, I consider the book a handy guide to the free radical literature of disease states. It comes after an earlier Hungarian version. The authors

are obviously keen to promote awareness of free radicals in experimental and clinical medicine. One hopes they plan to write a second, updated edition.

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OXYGEN RADICALS

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This is a recent addition to the list of topics covered by SUBIS. It comprises a listing of papers and books published on the topic of oxygen radicals. The subject area is divided into: books, reviews and symposia; general; reactive oxygen species; enzymes; lipid peroxidation; respiratory burst/chemiluminescence; pharmacology/toxicology; DNA damage; ischaemia/hypoxia; peroxisomes; inflammation; ozone; radiation; plants; techniques; forthcoming events. The references are obtained by both direct scanning of relevant journals and of ISI Current Contents issues, and therefore are not necessarily reproduced in any other commercially available database. The coverage of the topics appears to be quite good, although I found it rather sparse in references on atherosclerosis.

Each reference comprises; a full title, authors, journal reference and, usually, an address for correspondence. No abstracts are supplied. The format is particularly clear and easy to scan. Approximately 80 references are provided per issue. Clearly, although the annual cost of maintaining a record of publications in one's own subject area may be less, depending on the scope and consequent number of references generated, this periodical may provide a convenient and relatively economic means of keeping in overall touch with developments in the field of oxygen radicals.

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