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Book Reviews

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M. Baggiolini, C. Sorg (eds): **Interleukin-8 (NAP-1) and related chemotactic cytokines.** Karger, Basel 1992. 164 Pages, 40 Figures, 12 Tables. Hardcover, US$ 144.00, DM 216,00 (ISBN 3-8055-5426-5)

Four years after the identification of IL-8 this book attempts to present a comprehensive overview of the biochemical, molecular biological and pathophysiological properties of this new class of inflammatory proteins. The authors, from the United States, Switzerland, Federal Repbulic of Germany, and Japan, have contributed eight short chapters, with a clarity of style and presentation which is to be commended.

The initial chapters set IL-8 and its related cytokines in the context of other chemotactic and neutrophil-activating agents such as C5a and fMet-Leu-Phe. The position of IL-8 as a mediator of the effects of IL-1 and tumor necrosis factor is described. Monocytes and macrophages are the major source, although a wide range of cells, including endothelial cells, hepatocytes and keratinocytes, also produce it. IL-8 is more selective for neutrophils than other chemotactic agents and is relatively resistant to inactivation, injected IL-8 retaining its neutrophil-attracting activity for up to 8 h.

The discussion of the structure of IL-8 illustrates the structural similarity between members of the superfamily of cell-specific chemotactic mediators of the inflammatory response. A minor structural feature defines two subclasses of these peptides: the first two cysteines are separated by one amino acid (CXC) in IL-8 and other neutrophil-activating peptides, but are adjacent (CC) in the monocyte chemoattractant protein-1 (MCP-1) and related peptides that act on monocytes but not on neutrophils. The striking structural similarity with the class 1 major histocompatibility antigen HLA-A2 is also discussed. It seems likely that this region which serves antigen recognition and T cell receptor functions in the HLA molecule may, in the case of the similar region on IL-8, also serve as the site of receptor interaction. The chromosomal loci of the two subfamilies are different, IL-8, PF4, IP-10 and GRO being on chromosome 4 and MCP-1, JE, MIP-1 and Act-2 being located on chromosome 17.

Understanding of the regulatory steps in IL-8 production is still incomplete, particularly with little definite information on modulating factors being available. Similarly, the regulation of specific IL-8 receptors, which have been identified in neutrophil membranes, depends partly on down-regulation by IL-8 associated with internalization of the ligand, but is not fully understood.

The description of NAP-1 (IL-8) isolation from psoriatic skin scales illustrates how these cytokines may take on clinical importance in the future with the development of potential inhibitors. Also, the finding of similar quantities of NAP-1 (IL-8) and MGSA (GRO) in eczema, atopic dermatitis and ichthyosis congenita but not healthy epidermis underlines the need to appreciate the difference between specific pathology and the physiology of the inflammatory response.

The discussion moves on from IL-8 (NAP-1) to review related chemotactic cytokines and introduces the concept of molecules with functional similarity and having widely different modes of formation and cellular origins. In contrast to the secretion of IL-8 from stimulated mononuclear phagocytes, NAP-2 is produced by proteolytic processing from inactive precursors (platelet basic protein) released from platelet alpha granules. This processing occurs in the presence of monocytes or their supernatants and also with purified proteases. The in vivo function of NAP-2 is probably restricted to the vasculature where platelet activation may occur.

The final chapters deal succinctly with the current knowledge concerning the GRO gene and protein, macrophage inflammatory proteins-1 and -2 and monocyte chemoattractant protein-1. They widen the scope of the book and serve to remind us that the relative importance of these agents and physiological and pathological roles for them should be determined soon.

The wide range of clinical conditions mentioned in discussing biochemical and molecular biological aspects of these cytokines includes rheumatoid arthritis, psoriasis, glomerulonephritis, uveitis, asthma and acute leukemias. The gulf between molecular medicine and clinical medicine is narrowed by this book, which should be read by researchers working on aspects of inflammatory disease.

J.Mansfield (Sheffield)

H.G. Siebert, H. Mann, H.K. Stummvoll (eds.): **Continuous Hemofiltration (Contributions to Nephrology, vol. 93).** Karger, Basel 1991. 272 Pages, 77 Figures, 72 Tables. Hardcover, DM 293,00 (ISBN 0302-5144)

Continuous artiovenous hemofiltration, developed by P. Kramer et al. (1977), represents a new form of therapy enabling "artificial substitution" for one organ system, primarily kidney function in acute renal failure. Results with these methods were discussed at the Second International Conference on Continuous Hemofiltration.

One of the main indications for the use of continuous treatment is hemodynamic instability. In critically ill intensive care patients, a survival rate of up to 50–55% can be expected. There is no limitation on fluid intake, enabling parenteral nutrition to be adapted to the needs of the patients. Even in hypercatabolic states efficacy may be achieved. In the management of multiple organ failure methods of continuous hemofiltration are very effective in normalizing water and electrolyte metabolism and in the removal of metabolic waste products. After cardiac surgery, hemofiltration produces hemodynamic stability without any change in preload, cardiac index or systemic blood pressure. It corrects metabolic acidosis and eliminates neurotoxic substances. In endstage cardiac disease, slow, continuous ultrafiltration appears to be the only procedure allowing the removal of large amounts of extracellular fluid. In cardiogenic pulmonary edema, ultrafiltration/hemofiltration offers a means for the reduction of extracellular lung water without adversely affecting cardiac output and oxygen delivery to the tissues.

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