

Angiogenesis, lymphangiogenesis and clinical implications, G. Marone, F. Granata, editors (Karger, Basel, Switzerland) 2014. 232 pages. Price: US\$ 221.00 / CHF 188.00 / EUR 157.00
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This book is part of an ongoing series “Chemical Immunology and Allergy”. Angiogenesis is not a new

area, as the importance of new vessel formation in wound healing, tumour progression and metastasis has been recognized for a fairly long time. However, the subject has evoked considerable research attention in the recent years due to better understanding of its role in various diseases and the potential to translate this into therapies. As outlined in the Preface, the book aims to provide the reader with a comprehensive understanding of the factors involved in angiogenesis and lymphangiogenesis, especially in the context of diseases.

The book is concise, and arranged into 13 chapters. The first chapter provides a brief overview of the history of research in this area. It is an interesting chapter, and gives a fair idea of how new the field is and how much of the progress is recent.

The next eight chapters discuss the various aspects of the basic understanding of angiogenesis and lymphangiogenesis, as a biological phenomenon. This area has made significant advances and the topics have been well covered by the respective authors. Much of the new understanding has come from the advances in the fields of immunology and cell biology. Chapter 2 addresses the immune cells which are the main source of the vascular epithelial and placental growth factors (VEGF and PGF), the angiopoietins and semaphorins. Cells of both innate and adaptive immune systems, such as mast cells, macrophages, dendritic cells, basophils, eosinophils and some T cell subsets all contribute to the process. These molecules directly regulate the development of new blood and lymph vessels. Cytokines, chemokines and other mediators produced by immune cells also indirectly influence this process. This detailed chapter though well written has three poorly labelled diagrams and would have benefitted with more illustrations, especially for a non-immunology readership.

Chapters 3 and 4 discuss the role of neuropilins and semaphorins, both of which are crucial molecules in tumour angiogenesis and are, therefore, possible targets for therapy. While the diagrams on semaphorins are good, the neuropilin ones are less so.

In Chapter 5, chemokines and their receptors have been described. These are a large group of about 50 molecules in humans, which with their 20 receptors act directly on endothelial cells and also recruit leukocytes that in turn secrete the angiogenic mediators. These have specific complex expression patterns, although

there is also redundancy. These play a nuanced pro- and anti- angiogenic role(s). All these aspects are well covered by the authors with clear diagrams.

The next chapter deals with the plasminogen activation system. Plasminogen/plasmin, their activators and inhibitors and cell receptors play an important role in proteolysis of the extracellular matrix. This is an important component of new vessel formation. This chapter discusses the more recent evidence regarding the role of this system in the angiogenesis process.

Chapters 7, 8 and 9 deal with the role of neutrophils, eosinophils and T regulatory cells which directly, through their capability to secrete various pro- and anti-inflammatory cytokines regulate/modulate angiogenesis both physiologically as well as pathologically.

The last four chapters deal with the clinical aspects. Although the book title is somewhat suggestive of providing an understanding of the current status of therapies based on the advances on this subject, this part constitutes less than quarter of the book and is far from satisfactory. The only disease conditions that have been addressed are obesity, multiple myeloma, prostate cancer, asthma and chronic obstructive airway disease, while angiogenesis blocking therapies have been approved in colorectal cancer and renal cell carcinoma as well. A more general discussion on these therapies would have been useful for the general oncologist.

Although the book is well presented overall, it has some of the advantages and disadvantages of multi-author books. There is some amount of repetition in content and quality of writing, especially of illustrations is variable. The small introductory paragraph in smaller print at the start of each chapter is often redundant. Many chapters dive into the topics without any overall background and the concluding remarks at the end of each chapter in many cases do not add to the content.

In conclusion, this is a well brought book, with more emphasis on basic mechanisms than the clinical aspects. Hence it may be of greater interest to biologists working in the area than clinicians.

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