

PREFACE

Si facile esset, iam factum sit.

Atherosclerotic disease remains the leading cause of death in the Western Hemisphere, and its prevalence continues to increase as the population ages. Despite progress in surgical and catheter-based revascularization, an ever increasing number of patients are either not candidates for these therapies or remain symptomatic despite prior revascularization and maximal ongoing medical treatment. Thus, it is clear that an alternative treatment strategy such as therapeutic angiogenesis and myogenesis is needed for these “no-option” patients.

The field of angiogenesis/myogenesis, however, has followed the same development pattern seen with other novel therapeutic interventions: early spectacular and “too-good-to-be-true” results leading to unrealistic expectations, followed by sobering complications and disappointments, only later maturing to cautious optimism when better understanding of the biological and logistic obstacles is achieved. We believe that this is such a time for therapeutic angiogenesis/myogenesis, putting behind us the early picture of angiogenesis as “an attempt to influence a process we do not understand, with the agents we do not know how to use and deliver, relying on the end-points we cannot assess.” Unfortunately, this led to failure of early studies and a negative view of the field, at a time when we are finally developing a good understanding of the biology and therapeutic targets, have multiple available and well-studied therapeutic strategies, and have developed the necessary imaging to measure outcomes. From here, much work still needs to be done to eventually achieve functionally significant angiogenesis/myogenesis, but clearly we have turned at least the first developmental corner with the identification of novel therapeutic targets and pathways, the investigation of transcriptional factors, master switch molecules, cell-based approaches, chemokines, a better understanding of the effects of aging, endothelial dysfunction, and hypercholesterolemia in response to angiogenic stimuli, as well as a better understanding of delivery problems. Each development has brought us one step closer to our goal of helping patients with end-stage ischemic heart disease, peripheral vascular disease, and congestive heart failure.

Angiogenesis and Direct Myocardial Revascularization represents an interdisciplinary effort to balance the basic, preclinical, and clinical aspects in this field. The various sections are each written by pioneers and opinion leaders in angiogenesis/myogenesis. Their chapters reflect the latest developments in this rapidly evolving field, including the introduction of cell-based therapy for angiogenesis and myocardial repair. Wherever this field takes us, we hope that this book will be a useful waypoint, and that we can go forward balancing optimistic enthusiasm with a healthy dose of scientific skepticism, in order to finally realize the promise that such therapies may hold for patients with advanced cardiovascular disease.

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