Preface

The field of ophthalmology has witnessed an unparalleled degree of progress over the last decade in the diagnosis and management of age-related macular degeneration (AMD). Before ten years ago, diagnostic techniques consisted of only fundus angiography and treatment was limited to laser photocoagulation for neovascular AMD. Unfortunately, many people suffered severe and irreversible loss of visual acuity from advanced AMD, both neovascular and atrophic or nonneovascular.

A new era began around 1990 with the introduction of photodynamic therapy, which effectively limited vision loss due to certain angiographic classes of neovascular AMD but generally did not afford significant visual gains. More recently, injectable vascular endothelial growth factor (VEGF) inhibiting pharmacotherapeutics have transformed the therapy of all types of neovascular AMD by giving patients a high likelihood of visual stability and a real chance of meaningful visual improvement Frequent intravitreal injections of anti-VEGF medicines remains the standard of care for neovascular AMD; however, there is still room for improvement since only the minority of patients experience significant visual gains and the treatment burden of frequent injections is high. The pace of finding even better therapies for neovascular AMD has quickened and new comparative information on anti-VEGF therapies will play a major role in treatment decision making.

Although the nutritional interventions established by the Age Related Eye Disease Study (AREDS) have incrementally improved the prognosis of patients with significant drusen and nonneovascular AMD, we have not yet witnessed a sea change event. This is about to change as our expanding understanding of the pathobiology of nonneovascular AMD points us toward new therapeutic strategies and targets. While all these therapeutic advances were emerging, our ability to diagnose AMD-related atrophy and exudation improved with the advent of fundus autofluorescence and optic coherence tomography (OCT). These invaluable tools have become essential for day-to-day patient care but also generate and measure important quantitative data in nearly all ongoing AMD clinical trials. Lastly, our understanding of disease has leaped forward with the discovery of various genetic factors and inflammatory mechanisms that are associated strongly with AMD.

This book aims to provide – for the retina specialist, general eye care professional, vision scientist, and those training in these areas – an update on the current understanding of AMD pathophysiology, the use of diagnostic tests, and the management of both nonneovascular and neovascular AMD. It also

looks into the future with potential treatment options that are now under investigation in clinical trials. Finally, it covers the medical economics and societal impact of this major public health issue.

To cover this large array of topics in AMD, the editors are fortunate to have leading authorities in the field of retina to author the chapters of this book. We are grateful to the authors for all their time and efforts. We wish to acknowledge the ongoing support and inspiration of our associates at Mid Atlantic Retina and our ophthalmology colleagues, residents, and fellows at Wills Eye Institute. We also wish to thank our editors at Springer, Rebekah Amos, Shelley Reinhardt, Barbara Lopez-Lucio, and Catherine Paduani for their dedicated guidance and editorial expertise.

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