PREFACE

Prostate cancer has become one of the world's greatest healthcare challenges. Ageing populations mean the number of men diagnosed with this disease increases year on year. This has implications not only to the patient and their loved ones, but also clinical services, healthcare budget holders and to wider society. Despite being one of the most common cancer in Western men, its natural history, prognosis, and treatment are poorly understood. This book brings together a select faculty of experts to present a comprehensive view of the current state and future perspectives of prostate cancer.

There are ten chapters in the book—the first four cover our present knowledge and understanding of the disease, the following three explore new advancements and treatments, particularly looking at overcoming resistance to therapy, and the remaining three chapters focus on specific molecules with the potential to become drug targets.

Chapter 1 provides a comprehensive review of the global trends in epidemiology, geographical variations, and incidence and mortality of prostate cancer. With numerous modifiable and unmodifiable risk factors, the etiology of prostate cancer is comprehensively covered. Chapter 2 summarizes the current knowledge on the various etiological factors of prostate cancer. Our understanding of the mechanisms that cause the disease requires further expansion if we are to advance our ability to diagnose aggressive tumors and develop more effective therapies. Chapter 3 provides a snapshot of pathogenesis of prostate cancer. The diagnostic tools for prostate cancer have undergone significant advancements in recent years to improve the accuracy of prostate cancer detection and avoid overdiagnosis and subsequent overtreatment. Chapter 4 introduces the reader to the various biochemical, genetic, imaging, and histological modalities that enable the accurate diagnosis and staging of the disease. Together, these four chapters serve as a succinct reference tool not only for clinicians or researchers, but also for the layperson who wish to have a basic understanding of the disease.

Chapters 5, 6 and 7 give a glimpse into future prospects for the treatment of prostate cancer. Androgen-deprivation therapy is the standard of care for metastatic prostate cancer, but patients inevitably develop resistance to treatment; more efficient treatments are therefore necessary. One such possibility is the combination of androgen deprivation with other forms of treatments such as immunotherapy, radiation, or small molecule inhibitors. Chapter 5 summarizes these promising combination treatment strategies and provides a comprehensive list of clinical trials on the topic. Chapter 6 introduces the reader to the exciting field of theranostics, which involves imaging a particular molecular target with a diagnostic radioisotope and then substituting it with a therapeutic isotope to treat patients who demonstrate sufficient target expression on diagnostic imagery. This is topical, given the FDA approval in December 2020 of PSMA-targeted PET imaging for men with prostate cancer. Improvements in systemic therapies need to be developed and applied in a timely, strategic manner to improve the care of those at the most extreme risk of therapy failure with traditional therapy.

Chapter 7 reviews the status of therapy for standard and high-risk patients, and strategies for translational science for patients at risk of compromised outcome and treatment failure.

Chapters 8, 9, and 10 will be of particular interest to basic scientists, as they discuss the therapeutic potential of three molecules. Chapter 8 challenges researchers to rethink the role of p53, often dubbed the 'guardian' of the genome, in prostate cancer. Originally thought to be involved in metastatic disease, emerging data show that p53 is also dysregulated in primary tumors. Chapters 9 and 10, summarize the current evidence we have on the role of MUCIN 1 and STEAP proteins, respectively, and make a case for their therapeutic potential for the treatment of prostate cancer.

We thank the authors for their contribution, diligence, and dedication for making this project possible. This book is aimed primarily at clinicians and scientists, but many areas will also be of interest to the layperson. We all have much to learn about prostate cancer. We hope this book enhances the reader's knowledge in an informative and enjoyable way.

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