In this first issue of *Key Leaders' Opinion on Novel Progress in Diagnosis and Treatment of Prostate Cancer*, many interesting thoughts on the fast developments in diagnosis and treatment of prostate cancer are brought together. Some are original articles, some are reflections on previously published papers. All papers aim to reflect on recent literature in clinical and preclinical research, explain the background and relevance of issues, and summarize the state of the art according to the authors opinion.

Which is not easy. There is an enormous amount of publications appearing in the field of prostate cancer, all illustrating smaller or larger steps for better treatments, but nearly all limited by the fact that prostate cancer is a heterogeneous disease with a wide variation in growth. We sometimes feel like looking at the disease by one pair of bad binoculars: the clinical horizon we can see is only at its best at 10-15 years, and we cannot see further. While with the same binoculars we look at the wide spectrum of diagnostics like imaging, pathology slides, and clinical data in present disease, seeing only part of the field in one view. And completely missing the connection to the molecular world beneath it. Nobody ever said science is easy….

The more we therefore appreciate this effort of bringing hot issues together. In clinic we try to intensify and focus our therapies with new technologies to confined spots in order to restrict unwanted side effects, for example in radiotherapy. We are trying to define the best patient cohorts for the optimal medical and surgical therapy. Unavoidably, combinations of new diagnostic modalities like MRI, pathology scores, and increasingly so genetic characteristics serve to stratify patients in more and smaller groups. This might 'personalize' treatments for active surveillance, locally extended high risk disease, and in some metastatic settings, but we are still far off from the situation in which we can predict individual treatment outcomes in the long run based on the diagnostic profile of individual patients. These articles show some examples why validation is difficult and slow.

In order to relate prostate cancer research to the bigger picture of the general health context, some fundamental research issues on expanding diagnostics to the urinoma, and machine learning have been included, as well as the relation to foods and fat.

This book might bring some clinical surprises and unknown molecular promises to you as a reader. And you will also find that science has progressed in some areas during the time that the book was constructed. For example in missing recent outcomes of some medical trials, long term evaluations of diagnostics leading to risk based treatment approaches, newest imaging (like PSMA PET) and genetic insights that are being produced continuously. But the aim is to illustrate the great progress prostate cancer research is making in the broad field of oncology, and which issues remain controversial, unsolved, and exciting for further work.

Enjoy (like I did).

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