Radionuclide Therapy in Prostate Cancer
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Radionuclide therapy in prostate cancer is the new star among nuclear medicine therapies. Not long ago, there were only bone seeking radionuclides for palliation of bone pain like Sr-98, or Sm-153[1-3]. Although these are quite effective in reduction of bone pain from metastases, they have not been "best sellers" among nuclear medicine therapies.

The situation has dramatically changed since two new players entered the arena of nuclear medicine therapies: Ra-223[4] and the shooting star radiolabelled Prostate-specific membrane antigen (PSMA)[5].

Ra-223 is not only the first approved α-emitter after quite a long time, it is the first radiotherapeutical to show an increase in overall survival, a decrease in skeletal events, and palliation of bone pain[2]. Ra-223 paved the way from a palliative therapy to prolongation of survival. Moreover, Ra-223 has a low profile of adverse reactions (which are mild and manageable)[2].

Prostate-specific membrane antigen (PSMA) is a receptor on the surface of prostate cancer cells that is revolutionising the way we image and treat men with prostate cancer[6]. Therapy with radiolabelled PSMA is the first targeted therapy for prostate cancer in nuclear medicine and an area of active investigation. Several studies demonstrated promising results even in a significant proportion of men with metastatic prostate cancer, who have already failed other therapies. The theranostic “image and treat” strategy with radiolabeled PSMA ligands has the potential to improve treatment outcomes and is paving the way towards precision medicine[6].

Conclusion: Being up-to-date is more necessary than ever in this emerging field of nuclear medicine. This talk gives an overview how to handle nuclear medicine’s armamentarium in the treatment of prostate cancer from the ‘oldies’ to the hot topics.

References: