

UPDATES ON PSMA TARGETED RADIONUCLIDE THERAPIES FOR PROSTATE CANCER

Jaspreet S. Batra, Russell H Morgan Department of Radiology and Radiological Sciences

Johns Hopkins Medical Institutions Baltimore, MD

Multiple centers around the world are adopting PSMA based radionuclide therapies for treating advanced stage prostate cancer patients. Recent anecdotal reports and clinical trial results have been encouraging and have demonstrated personalized approach and efficacy for PSMA-targeted radionuclide therapies. Both, antibodies and small peptide-based agents as well as beta or alpha emitters are actively being pursued. Identifying the optimal agent with the highest efficacy and least toxicity for individual patients, rather than "one size fits all" approach is the need of the hour. Antibody based agents have longer biologic half-lives and delayed tissue penetration while the peptide-based agents have rapid kinetics that affords only a short time to engage with the target. Similarly, alpha particles have higher energy to deliver while beta emitters have longer range. Significant experience has been gained using ^{177}Lu -PSMA-617 and ^{177}Lu -J591 while reports/results for ^{225}Ac -PSMA-617 and ^{225}Ac -J591 are now getting published. With multiple options of targeted therapies, comes the need to identify the most suitable one for each patient. The goal is to personalize the therapies based on the tumor characteristics that suit the need of individual patients.

jbatra1@jhmi.edu