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Advanced Imaging Digest

A new treatment for prostate cancer: Lutetium Lu 177 vipivotide tetraxetan (PLUVICTO™) radioligand therapeutic

PLUVICTO is a new therapy for patients with prostate specific membrane antigen positive (PSMA+) metastatic castrate-resistant prostate cancer (mCRPC). Regardless of the location of metastasis, this therapy works by precisely delivering radiation to PSMA+ tumor cells. PLUVICTO is given weekly over a six-week period. The current application of PLUVICTO is for use in mCRPC patients resistant to androgen receptor directed inhibition (ARDI) and taxane-based chemotherapy.

PLUVICTO is a radioligand, made up of two parts: a ligand and a radioisotope (DOTA chelator radiolabeled with lutetium-117). The ligand finds and specifically binds to the cancer cells that have PSMA, and the radioisotope emits therapeutic radiation to those cells (PSMA+ prostate cancer cells). Unlike many other therapies, PLUVICTO can deliver radiation in a more precise manner to prostate cancer cells found throughout the body by finding PSMA+ cells, binding to them, then delivering radiation regardless of the cell's organ location.

PLUVICTO was approved March 23, 2022 by the FDA after clinical trials showed improved outcomes for patients with mCRPC who have failed other treatments, including ARDI and taxane-based chemotherapy. In the study (VISION trial), patients were randomized to PLUVICTO plus best standard of care (BSoC) or BSoC alone. The study showed statistically significant improvements in overall survival, overall response rate, imaging-based progression-free survival, and improved time to symptomatic skeletal event or death in patients who received PLUVICTO plus BSoC. Some patients in the PLUVICTO plus BSoC subgroup obtained a complete response; whereas, no patients in the standard of care subgroup exhibited a complete response.

Magellan Healthcare clinical leaders continually review imaging trends and needs in light of current medical concerns, available literature, and society and Centers for Disease Control and Prevention recommendations and guidelines. This document is a summary of our latest findings. Please consult references for detailed information.

Currently, phase III clinical trials are underway to determine the effectiveness of PLUVICTO administered earlier in the treatment pathway, which has the potential to shift the paradigm for the treatment of prostate cancer. New radioligand agents, such as PSMA (Lu-177)-PNT2002 (POINT Biopharma), are also on the horizon.

Magellan Healthcare implemented the use of PSMA PET (using Ga 68 PSMA-11 or piflufolastat F 18 (Pylarify®)) for prostate cancer for 2022. Based on current recommendations, we will be adding Ga 68 gozetotide (Locametz®) and incorporating PSMA PET prior to and following treatment with agents such as PLUVICTO in 2023.

About the author

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Dr. Marquez, a board-certified urologist, completed her urology residency at the University of Texas Southwestern Medical Center. In addition to having over 20 years of clinical experience, Dr. Marquez has also served on the editorial board of the Journal of Gynecologic Surgery. She joined Magellan Healthcare in 2019 as a physician clinical reviewer.

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