Pluvicto - A novel treatment for Prostate Cancer

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Madam, Prostate cancer is one of the leading causes of mortality in men, and it is also included among the most frequently diagnosed cancers worldwide. Patients with metastatic prostate cancer who received androgen deprivation therapy were shown to develop Metastatic Castration-Resistant Prostate Cancer (mCRPC).[1] mCRPC has increased expression of transmembrane protein Prostate-Specific Membrane Antigen (P.S.M.A.). This high expression of P.S.M.A. indicates a poor prognosis and is associated with decreased survival.[2] As there are limited numbers of treatment options available currently, mCRPC is untreatable and deadly.[3]

For the management of adult patients with PSMA-positive mCRPC who were previously given androgen receptor pathway inhibitors (A.R.P.I.s) and taxane-based chemotherapy, the U.S. F.D.A authorized the use of Pluvicto earlier this year on 23rd March 2022.[4]

Pluvicto is the first of its type, a targeted radioligand therapeutic agent, which the F.D.A. has approved for the treatment of mCRPC patients. Its mechanism of action involves combining a target compound with a therapeutic radioisotope.[4] This agent selectively attacks PSMA-positive cells and the surrounding microenvironment with beta-particle radiation because P.S.M.A. acts as a viable biological target for radioligand therapies.[2,4]

This drug boosts biochemical and radiographic response rates, lessens pain, and is said to be associated with low toxicity in patients with progressing mCRPC after standard therapy.[2] Patients with a disease that was not responsive to A.R.P.I.s and taxane-based chemotherapy were noted to have improved overall survival rates with this drug.[2]

Side effects reported with Pluvicto include dryness of mouth, nausea, anorexia, anaemia, constipation, weakness, and lassitude.[4] A few precautions should be taken when using this drug, such as minimizing radiation exposure during and after the treatment, increasing oral fluid intake, and frequently voiding to decrease the risk of bladder radiation.[5]

Pluvicto can become an essential therapeutic regime due to its high specificity for PSMA-positive cells and low side effects profile. This drug can bring a dynamic change in the medical world for the treatment of prostate cancer by improving the survival rate in patients who were previously not responsive to taxane-based chemotherapy and A.R.P.I.s. However, this drug requires additional studies and trials based on larger populations further to validate its use for the treatment of mCRPC patients and to provide alternative treatment regimens for non-responders.

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