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Abstract

Approximately 10 - 20% of prostate cancer cases ultimately progress to castration-resistant prostate cancer (CRPC), for which there is a poor prognosis and a therapeutic need. Radium-223 dichloride (radium-223 [Xofigo]) is a first-in-class α-emitting radiopharmaceutical shown to significantly prolong overall survival in patients with CRPC with symptomatic bone metastases and no visceral metastases. Current treatment guidelines recommended it in both pre- and post-docetaxel settings. Areas covered: Radium-223 mechanism of action, pharmacokinetics and key efficacy and safety data are reviewed. The evaluation of adverse events reported in the Phase III ALSYMPCA trial is summarized for the overall population and patient subpopulations (prior docetaxel, concomitant external beam radiation therapy and baseline opioid use). An evaluation of how radium-223 is being incorporated into the CRPC treatment paradigm and the implications of its safety profile for future use are provided.

Expert opinion: The pronounced efficacy and safety profile of radium-223 positions has a valuable new therapeutic tool in the CRPC armamentarium. Its novel mechanism of action underlies low rates of hematologic adverse events. Radium-223 treatment will become common in the majority of pre-docetaxel symptomatic CRPC cases, as it has proved to be highly efficient with few safety concerns earlier in the course of disease.

Keywords: bone metastases; castration-resistant prostate cancer; overall survival; radium-223 dichloride; safety; α-emitter

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