

## Adverse reactions mediated by radiopharmaceuticals for palliative treatment of bone metastases: a systematic review of literature

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**Background:** Bone metastases are one of the most frequent complications of advanced cancers and one of the therapies used for the palliative treatment of pain associated with them is radiopharmaceutical therapy. Like any other drug, radiopharmaceuticals can cause adverse reactions (AR). Therefore, a global and up-to-date view of AR related to radiopharmaceuticals is essential, to allow the detection, understanding and management of them by health professionals and the patient. **Objective:** Review the results and conclusions of studies on the use of RF in the palliative treatment of pain associated with bone metastases, particularly, Strontium-89 (89Sr), Samarium-153 (153Sm), Rhenium-186 (186Re) and Rhenium-188 (188Re). **Methods:** A systematic literature review was conducted according to PRISMA statement, using the databases MEDLINE and EBSCO. After the selection process, 20 articles were included. **Results:** The main AR reported are flare responses and hematologic toxicity. All the studies recovered show that these drugs can provide safe, symptomatic relief from painful osseous metastases and, in most cases, the hematological toxicity was reversible, even in elderly and severely ill patients. There is also evidence of secondary outputs for health and quality of life. **Conclusions:** Pain is among the most common and distressing symptoms encountered by patients with advanced cancer. The challenge of pain palliation is to achieve effective relief with minimal AR. The studies analyzed presented very similar results regarding pain relief after treatment, decrease in analgesic consumption, AR at the time of administration, hematologic toxicity and disease progression after treatment. The use of RF for pain palliation seems to be safe and an alternative to existing treatments, however more studies are needed to access safety and toxicity. Pharmacovigilance of radiopharmaceuticals is imperative so we can safely study the possible adverse effects of such drugs.

**Keywords:** adverse reactions; bone metastases; pharmacovigilance; pain palliation; radiopharmaceuticals;

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