

National Imaging Associates, Inc.*	
Clinical guidelines BONE METASTASES	Original Date: June 2013
Radiation Oncology	Last Revised Date: February 2021
Guideline Number: NIA_CG_126	Implementation Date: January 2022

MEDICALLY NECESSARY INDICATIONS FOR RADIATION THERAPY

2D or 3D Conformal External Beam Radiation Therapy (EBRT) is appropriate for the treatment of bone metastases

Good performance status = ECOG less than 3:

- EBRT –Up to 10 fractions for multiple bone metastases

Poor performance status = ECOG 3 or greater or progressive metastatic disease:

- EBRT – Up to 5 fractions

All other treatment regimens require physician review.

TREATMENT OPTIONS REQUIRING PHYSICIAN REVIEW

Intensity modulated radiation therapy (IMRT)

IMRT is not indicated as a standard treatment option and should not be used routinely for the delivery of radiation therapy for bone metastasis. IMRT may be appropriate for limited circumstances in which radiation therapy is indicated and 3D conformal radiation therapy (3D-CRT) techniques cannot adequately deliver the radiation prescription without exceeding normal tissue radiation tolerance, the delivery is anticipated to contribute to potential late toxicity or tumor volume dose heterogeneity is such that unacceptable hot or cold spots are created.

Requests for IMRT require physician review of the clinical rationale and documentation for performing IMRT rather than 2D or 3D-CRT treatment planning and delivery. Supporting documentation will need to:

- Demonstrate how 3D-CRT isodose planning cannot produce a satisfactory treatment plan (as stated above) via the use of patient-specific dose volume histograms and isodose plans.

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- Provide tissue constraints for both the target and affected critical structures.

Stereotactic Body Radiation Therapy (SBRT)

Stereotactic Body Radiation Therapy (SBRT) for treatment of bone metastasis may be medically necessary to treat previously irradiated field (Lutz, 2017).

SBRT is medically necessary for extracranial oligometastatic disease for an individual with One (1) to Four (4) metastatic lesions when the following criteria are met: (Cheung, 2016; Palma, 2018)

- Good performance status: ECOG less than 3 or Karnofsky Scale greater than or equal to 70% **and**
- Stable systemic disease or reasonable systemic treatment options.

Proton Beam Radiation Therapy

Proton beam is not an approved treatment option for bone metastasis. Overall, studies of proton beam therapy have not shown clinical outcomes to be superior to conventional radiation therapy in bone metastases.

THE FOLLOWING APPLIES TO CMS (MEDICARE) MEMBERS ONLY

For Proton Beam and Stereotactic Radiotherapy refer to Local Coverage Determination (LCD), if applicable.

BACKGROUND

Bone metastases are a common manifestation of malignancy that can cause severe and debilitating effects including pain, spinal cord compression, hypercalcemia, and pathologic fracture. Radiation therapy has a proven track record in the palliation of bone metastases. Following a course of palliative treatment, approximately one-third of patients will have complete relief of pain, and two-thirds of patients will have significant reduction in their pain. The optimal delivery of radiation therapy has been the focus of multiple trials looking at the best dose fractionation. Common dose fractionation schedules have shown good rates of palliation, including 8 Gy in 1 fraction, 20 Gy in 4 fractions, 24 Gy in 6 fractions, or 30 Gy in 10 fractions. All provide excellent pain control with minimal side effects. The benefit of the single fraction is that it is the most convenient for patients, whereas the advantage of a longer course of treatment is a lower incidence of re-treatment to the same site. Dose fractionation is typically determined based on location of the metastasis, patient's clinical status, previous irradiation treatment, etc. Therefore, multiple factors must be reviewed prior to prescribing palliative radiotherapy.

POLICY HISTORY

Date	Summary
February 2021	<p>1.MEDICALLY NECESSARY INDICATIONS FOR RADIATION THERAPY</p> <p>Deleted:</p> <ul style="list-style-type: none"> • Conventional 2D planning techniques is appropriate for the treatment of bone metastases. • 3D-CRT may be indicated in select cases such as situations of re-treatment, overlapping volumes or adjacent critical structures that are likely to cause complications. Requests for 3D-CRT must be accompanied by supporting clinical rationale. <p>Favorable Risk (Good performance status = ECOG less than 3):</p> <ul style="list-style-type: none"> • EBRT –Up to 10 fractions for multiple bone metastases • EBRT –Up to 14 fractions for spinal cord compression symptoms or single lesion or instances that require a longer fractionated course to minimize patient discomfort (e.g., nausea) (Lutz, 2017). <p>Unfavorable Risk (Poor performance status = ECOG 3 or greater or progressive metastatic disease):</p> <ul style="list-style-type: none"> • EBRT – Up to 5 fractions <p>Requests and supporting rationale for additional fractions can be discussed with a physician reviewer.</p> <p>Updated:</p> <p>2D or 3D Conformal External Beam Radiation Therapy (EBRT) is appropriate for the treatment of bone metastases</p> <p>Good performance status = ECOG less than 3:</p> <ul style="list-style-type: none"> • EBRT –Up to 10 fractions for multiple bone metastases <p>Poor performance status = ECOG 3 or greater or progressive metastatic disease:</p> <ul style="list-style-type: none"> • EBRT – Up to 5 fractions <p><i>All other treatment regimens require physician review</i></p> <p>2.TREATMENT OPTIONS REQUIRING PHYSICIAN REVIEW</p> <p>Deleted: Stereotactic Body Radiation Therapy is not a standard treatment option for the treatment of bone metastasis (Lutz, 2017). A peer review is required with a radiation oncologist.</p> <p>Updated:</p> <p>Stereotactic Body Radiation Therapy (SBRT) for treatment of bone metastasis may be medically necessary to treat previously irradiated field. (Lutz, 2017).</p>

	<p>SBRT is medically necessary for extracranial oligometastatic disease for an individual with One (1) to Four (4) metastatic lesions when the following criteria are met: (Cheung P,2016; Palma 2018)</p> <ul style="list-style-type: none"> o Good performance status: ECOG less than 3 or Karnofsky Scale greater than or equal to 70% and o Stable systemic disease or reasonable systemic treatment options. <p>3.References Added and Updated</p>
February 2020	Updated references
February 2019	Added and updated references

REFERENCES

- American College of Radiology (ACR). Metastatic Epidural Spinal Cord Compression and Recurrent Spinal Metastasis. <https://acsearch.acr.org/docs/3091670/Narrative/>. Published 2014a. Accessed April 21, 2016.
- American College of Radiology (ACR). Non-Spine Bone Metastases. <https://acsearch.acr.org/docs/69354/Narrative/>. Published 2014b. Accessed April 21, 2016.
- American College of Radiology (ACR). Spinal Bone Metastases. <https://acsearch.acr.org/docs/71097/Narrative/>. Published 2012. Accessed on April 21, 2016.
- American Society for Radiation Oncology (ASTRO). Evidence Based Guideline: Palliative Radiotherapy for Bone Metastases. https://www.astro.org/uploadedFiles/Main_Site/Clinical_Practice/Guidelines/ASTRO_bone_mets_guideline_full_version.pdf. Accessed April 21, 2016.
- American Society for Radiation Oncology (ASTRO) Model Policy. Stereotactic Body Radiation Therapy (SBRT). https://www.astro.org/uploadedFiles/_MAIN_SITE/Daily_Practice/Reimbursement/Model_Policies/Content_Pieces/ASTROSBRTModelPolicy.pdf. Published 2014. Accessed May 12, 2017.
- ASTRO 2020 Radiation Oncology coding Resource. American Society for Radiation Oncology (ASTRO). 2020.
- ASTRO release list of five radiation oncology treatments to question as part of national Choosing Wisely® campaign. 2013 Sep 23.
- Cheung P. Stereotactic body radiotherapy for oligoprogressive cancer. *Br J Radiol*. October 2016; 89(1066): 20160251.
- Choosing Wisely®. <http://www.choosingwisely.org/clinician-lists/american-society-radiation-oncology-extended-fractionation-schemes-for-palliation-of-bone-metastases/>. Updated June 2017. Accessed April 23, 2018.
- Choosing Wisely®. <http://www.choosingwisely.org/clinician-lists/american-academy-hospice-palliative-care-single-fraction-palliative-radiation-for-bone-metastasis/>. February 21, 2013. Accessed April 23, 2018.
- Chow E, Harris K, Fan G, et al. Palliative radiotherapy trials for bone metastases: A systematic review. *J Clin Oncol*. 2007; 25:1423-1436. doi: 10.1200/JCO.2006.09.5281.

Hartsell WF, Scott CB, Bruner DW, et al. Randomized trial of short- versus long- course radiotherapy for palliation of painful bone metastasis. *J Natl Cancer Inst.* June 1, 2005; 97(11):798-804. doi: 10.1093/jnci/dji139.

Kaasa S, Brenne E, Lund JA, et al. Prospective randomised multicenter trial on single fraction radiotherapy (8 Gy x 1) versus multiple fractions (3 Gy x 10) in the treatment of painful bone metastases. *Radiother Oncol.* June 2006; 79(3):278-84. doi: 10.1016/j.radonc.2006.05.006.

Konski A, James J, Hartsell W, et al. Economic analysis of radiation therapy oncology group 97-14: Multiple versus single fraction radiation treatment of patients with bone metastases. *Am J Clin Oncol.* August 2009; 32(4):423-428. doi: 10.1097/COC.0b013e31818da9f7.

Lutz S, Balboni T, Jones J, et al. Palliative radiation therapy for bone metastases: Update of an ASTRO Evidence-Based Guideline. January/February 2017; 7(1):4-12. [http://www.practicalradonc.org/article/S1879-8500\(16\)30122-9/pdf](http://www.practicalradonc.org/article/S1879-8500(16)30122-9/pdf). Accessed April 23, 2018.

Lutz S, Berk L, Chang E, et al. Palliative Radiotherapy for Bone Metastases: An ASTRO Evidence-Based Guideline. *Int J Radiat Oncol Biol Phys.* March 2011; 79(4):965-976. doi: 10.1016/j.ijrobp.2010.11.026.

Meeuse JJ, Van Der Linden YM, Van Tienhoven G, et al. Efficacy of radiotherapy for painful bone metastases during the last 12 weeks of life: Results from the Dutch Bone Metastasis Study. *Cancer.* June 2010; 116(11):2716-2725. doi: 10.1002/cncr.25062.

National Comprehensive Cancer Network (NCCN). Bone Cancer. Version 1.2019. https://www.nccn.org/professionals/physician_gls/pdf/bone.pdf. Retrieved February 15, 2019.

Palma, DA, Olson RA S, Harrow, S, Gaede, A.V, Louie, C, Haasbeek, L.A, Mulroy, M.I, Lock, and others. Stereotactic Ablative Radiation Therapy for the Comprehensive Treatment of Oligometastatic Tumors (SABRCOMET): Results of a Randomized Trial. *Int J Radiat Oncol Biol Phys.*; 2018 Nov 01;102(3): S3–S4 (abstract).

Rutter CE, Yu JB, Wilson LD, et al. Assessment of national practice for palliative radiation therapy for bone metastases suggests marked underutilization of single-fraction regimens in the United States. *Int J Radiat Oncol Biol Phys.* December 24, 2014. doi: 10.1016/j.ijrobp.2014.10.045.

Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

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