

C-33

Palliative Radiotherapy for Skeletal-Related Events in Neuroendocrine Tumors

Ingrid He¹; Michael Luu¹; Veronica Placencio¹; Varun Roy¹; John David¹; Michelle Guan²; Richard Tuli¹; Andrew Hendifar¹

¹Cedars-Sinai Medical Center; ²University of California Los Angeles

BACKGROUND: Bone metastases have been reported in up to 12% of patients with neuroendocrine tumors (NETs). These metastases can lead to pain and other skeletal-related events (SREs) resulting in diminished quality of life and functional status. In other solid tumors, radiotherapy is an established treatment approach for SREs. We hypothesize that radiotherapy is an effective therapy for pain and other SREs in patients with NETs.

METHODS: We reviewed 600 records of consecutive NET patients treated at Cedars-Sinai Medical Center between 2011-2018 to identify patients with NETs who underwent radiation for bone metastases. The primary endpoint was change in patient reported pain scores following radiotherapy.

RESULTS: Twenty-eight patients treated for 61 cases of SREs were identified. There were 13 males and 15 females between the ages of 35 and 88 years. There were 11 lung NETs (7 typical carcinoids, 2 atypical carcinoids, 1 large cell, 1 small cell NET); 18 non-lung NETs (8 low, 8 intermediate, and 1 high grade NET). Seven patients received 1 line of systemic therapy, 19 patients received 2 or more lines, and 2 patients no systemic therapy. All 28 patients experienced bone pain; 7 patients experienced neurological compromise and 9 patients impending or pathologic fractures. Nineteen sites were treated with single fraction doses of 800-1800 cGy; 34 sites with fractionated regimens (doses of 900-3750 cGy over 3 to 15 fractions).

In 56/61 (92%) cases, patients experienced improvement in pain scores following radiotherapy. Median time to recurrence or progression of pain was 3.5 months. Outcomes were similar for patients who received single fraction vs fractionated regimens ($p=0.545$) in this cohort.

CONCLUSION: A significant portion of patients with NETs who experienced SREs from bone metastases demonstrated improvement in bone pain following radiotherapy. Further studies are needed to determine the role and optimal schedule of radiotherapy in the treatment of painful bone metastases.