Cureus

Open Access
Abstract

Cureus

Systemic Therapy as a Risk Factor Associated to Complications in SBRT for Spine Metastases

Corresponding author: Christian Arias

1. Radiation Oncology, Centre Hospitalier De, Montreal, CAN 2. Department of Radiation Oncology, Centre hospitalier de l'Université de Montréal (CHUM) 3. Radiation Oncology, University of Montreal, Montréal, CAN 4. Radiation Oncology, CENTRE Hospitalier De L'universitÉ De MontrÉal, Montreal, CAN 5. Radiation Oncology, CENTRE Hospitalier De L'universitÉ De MontrÉal, Montreal, CAN 6. Radiation Oncology, CHUM, Montreal, CAN

Categories: Radiation Oncology, Pain Management
Keywords: stereotactic body radiotherapy, spine metastases, systemic therapy, pain control, cyberknife™, tomo therapy, sbrt

How to cite this abstract
Arias C, Wong P, Roberge D, et al. (March 21, 2019) Systemic Therapy as a Risk Factor Associated to Complications in SBRT for Spine Metastases. Cureus 11(3): a353

Abstract

Objectives: The benefits of SBRT in pain control await confirmation in 2 large North American trials (RTOG0631 and CCTG SC24) but SBRT is already commonly used to improve local control. We hypothesized that systemic therapy may influence the efficacy of spine SBRT in controlling pain and increase the risk of vertebral compression fracture (VCF).

Methods: We retrospectively reviewed the clinical data of 155 patients treated with SBRT between June 2009 and June 2016. In the current analysis, we included the 127 patients for which SBRT was administered in a context of oligometastatic or oligoprogressive disease (either alone or postoperatively). Outcomes were calculated actuarially and comparisons were performed using log-rank tests (significance set at <0.05).

Results: The mean age was 64 (range: 22.67-81.82). Forty-nine patients (39%) had cancers considered radio-resistant (kidney 16%, thyroid 9%, melanoma 3 %) and 63 patients had breast (26%), prostate (14%) or lung (13%) cancers. Prior to SBRT and surgery, 33%, 63% and 3% had stable (SINS 0-6), potentially unstable (SINS 7-12) and unstable vertebrae (SINS 13-14). Postoperative SBRT was administered in 41%. Pain was present in 78% of patients prior to SBRT. Forty-two percent of the patients received systemic therapy during or within 7 days of SBRT. The median BED10 was 48. Median local recurrence free survival, distant progression free survival and overall survival were 20.5 months, 9 months and 25 months, respectively. There were 14 VCFs. No case of radiation myelopathy was reported. On univariate analysis, patients who were receiving systemic treatment were significantly at a higher risk of developing VCF (p=0.014) or pain recurrence (p=0.001). SINS score, Bilsky scale and pre-SBRT stabilization surgery were not significantly associated with VCF, local recurrence or pain.

Conclusions: In our single center retrospective review, we observed that patients on systemic treatments prior to spine SBRT were are high risk of developing VCF and pain recurrence/progression. These results suggest that pain response analyses in ongoing trials need to take into account concurrent systemic treatments as a potential confounding factor. Patient and clinician expectations as to the risk of VCF may also need to be modulated.

Open Access
Abstract
Published 03/21/2019