

Once-weekly stereotactic radiotherapy for patients with oligometastases: compliance and preliminary efficacy

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ABSTRACT

Aims and background. This retrospective analysis reports the outcomes obtained with an original once-weekly stereotactic radiotherapy fractionation given to patients affected by evolving oligometastases from different solid malignancies.

Methods. From 2009 to 2011, patients with symptomatic and/or evolving oligometastases were submitted to a median 5-fraction cycle of stereotactic radiotherapy of one fraction per week in order to exploit a radiobiological rationale designed to increase the therapeutic index. Individual fractionation was mainly planned according to patient performance status, oligometastasis size and site, and record of previous irradiation in the same site.

Results. Thirty-six patients in stage IV UICC-TNM affected by oligometastases were treated with image-guided intensity-modulated stereotactic tomotherapy with a single weekly radiation. Median age was 70 years (range, 34-89). The median weekly single dose, number of fractions and overall total radiation dose were 7 Gy, 5 fractions and 35 Gy, respectively. Thirty-five (97%) patients completed the treatment schedule. No patient suffered mild or severe radiation-related side effects. Twenty-one (87%) of 24 patients with local pain had complete symptomatic response within 30 days following the end of radiotherapy. Local control assessed at imaging after stereotactic radiotherapy was evidenced in 30 (83%) patients. Median time to response after the end of radiotherapy was 40 days.

Conclusions. The original radiotherapy regimen delivering only a single stereotactic dose per week seems to be highly feasible with an interesting high efficacy rate in patients with oligometastases from different solid tumors. Overall, the once-weekly treatment was very compliant in an advanced cancer stage especially for elderly and frail patients.

Key words: oligometastases, once-weekly fractionation, stereotactic radiotherapy, tomotherapy.

The authors declare no conflicts of interest.

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Received October 19, 2012;
accepted December 4, 2012.