

EP08.15: Single-Fraction SBRT With Radixact for Lung Malignancies: Early Outcomes of a Single-Center Experience

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INTRODUCTION

Stereotactic radiotherapy (SBRT) represents an established treatment option for isolated lung nodules, both in the primary setting and in oligometastatic patients. As fractionated schedules are routinely reported in daily clinical practice, the use of single-fraction stereotactic treatments is less described in the literature.

METHODS

This is a mono-institutional retrospective experience of inoperable patients with small lung lesions, both primary tumors and oligometastases treated with single fraction SBRT performed with helical tomotherapy linac. Data were prospectively collected. 18F-FDG-PET scans were compared to assess metabolic response. Acute and late toxicity were scored by CTCAE v5.0; local control (LC), distant progression-free survival (DPFS), and overall survival (OS) were estimated using Kaplan-Meier and Cox models.

DISCUSSION AND CONCLUSION

For elderly patients with a relevant burden of comorbidities, in the case of isolated lung malignancies, single-fraction SBRT achieved remarkable metabolic response with excellent short-term tolerance and survival. Although limited by small sample-size and few events, these findings support the feasibility and effectiveness of single-fraction SBRT in selected patients.

REFERENCES & ACKNOWLEDGEMENTS

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RESULTS

Thirty consecutive patients (median age=76.3 years, range 57-87 - M=19;F=11) with isolated small lung lesions (median size=2.15 cm, range 1-3.7) were treated with single-fraction SBRT performed with Radixact system for a median total dose of 26 Gy (range, 20-30 Gy). Four patients had a pacemaker during radiotherapy, with 9 lesions located in the left lung, five patients were in continuous oxygen-therapy. Nodules were mainly located in the superior lobe (53%), followed by lower lobe in 40% and medium in 7%, for a total of 10 peripheral and 20 centro-parenchymal lesions. Overall, 16 patients received single-fraction SBRT for primary tumors, 3 squamous, 10 adenocarcinoma; in 3 cases biopsy could not be performed due to severe comorbidities. The remaining 14 patients were treated for lung oligometastases: 6 from colorectal cancer, 3 oesophageal, 2 non-small cell lung cancer, one bladder and 2 endometrial cancer. In 30% of cases, SBRT was delivered with ongoing systemic therapy. Treatment was well tolerated, with 90% of patients free from any acute toxicity; acute G1-G2 dysphagia or chest pain occurred in 3 patients, no G≥3 events. SUVmax significantly decreased post-RT (p=0,00001), confirming strong metabolic response, with no evidence of local failures at the time of the analysis, with a median follow-up of 6.3 months (range, 5-18 months). 1-year DPFS and OS were respectively 90% and 96.7%. Cox analysis suggested higher post-RT SUVmax tended to predict worse DPFS (HR 1.8; p=0.09)

