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Authors: Artur Szymon Bandura, Rafał Dziadziuszko

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Stereotactic body radiation therapy for treatment of oligometastatic EGFR-mutated non-small cell lung cancer

Artur Szymon Bandura, Rafał Dziadziuszko

Department of Oncology and Radiotherapy, Medical University of Gdansk, Gdansk, Poland

74-year old female was treated for a disseminated EGFR-mutated lung adenocarcinoma with chemotherapy (cisplatin + pemetrexed in 2010) then docetaxel (2012), erlotinib (2013–2015) and paclitaxel (2016). Finally, because of T790M mutation detected in the tumor, she started Osimertinib in June 2016. In October 2019 solitary metastases in liver were observed. According to ESMO guidelines [1] local therapy and continuation of tyrosine kinase inhibitors (TKI) is an option, therefore she was referred for stereotactic body radiation therapy (SBRT) to liver metastases with 50Gy in 5 fractions (fig. 1 A, B). After 3 months, stabilization of disease was noted in control CT. She remains free of progression with good performance (ECOG 1), and continues osimertinib treatment (progression-free survival after SBRT: 32 months).

This case shows importance of local ablative treatment with oligometastatic lung cancer. Oligoprogression is defined as limited number and locations where progressive disease appears [2]. Hypothetically, when PD is observed in oligoprogressive state, local treatment could eradicate resistant clone of the tumor cells before they seed into other organs. Such management could enable continuation of the same TKI, as it is active in all other affected areas. Although further studies evaluating this concept are needed, local treatment in oligoprogressive NSCLC is one of the options leading to clinical benefit for the patients as shown in this case.

Conflict of interest: none declared

Artur Szymon Bandura

Medical University of Gdansk

Department of Oncology and Radiotherapy

ul. Smoluchowskiego 17

80-214 Gdańsk, Poland

e-mail: artur.bandura@gumed.edu.pl

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A.



B.

Figure 1. A. Computer tomography showing delineation of the lesion in liver, green contour – gross tumor volume, red – planning target volume. **B.** Stereotactic body radiotherapy with 50Gy in 5 fractions (98% isodose to planning target volume is shown)