

Role of radiotherapy in the management of brain metastases of NSCLC – Decision criteria in clinical routine

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PMID: 33186683 DOI: 10.1016/j.radonc.2020.10.043

Abstract

Background: Whole brain radiotherapy (WBRT) is a common treatment option for brain metastases secondary to non-small cell lung cancer (NSCLC). Data from the QUARTZ trial suggest that WBRT can be omitted in selected patients and treated with optimal supportive care alone. Nevertheless, WBRT is still widely used to treat brain metastases secondary to NSCLC. We analysed decision criteria influencing the selection for WBRT among European radiation oncology experts.

Methods: Twenty-two European radiation oncology experts in lung cancer as selected by the European Society for Therapeutic Radiation Oncology (ESTRO) for previous projects and by the Advisory Committee on Radiation Oncology Practice (ACROP) for lung cancer were asked to describe their strategies in the management of brain metastases of NSCLC. Treatment strategies were subsequently converted into decision trees and analysed for agreement and discrepancies.

Results: Eight decision criteria (suitability for SRS, performance status, symptoms, eligibility for targeted therapy, extra-cranial tumour control, age, prognostic scores and "Zugzwang" (the compulsion to treat)) were identified. WBRT was recommended by a majority of the European experts for symptomatic patients not suitable for radiosurgery or fractionated stereotactic radiotherapy. There was also a tendency to use WBRT in the ALK/EGFR/ROS1 negative NSCLC setting.

Conclusion: Despite the results of the QUARTZ trial WBRT is still widely used among European radiation oncology experts.

Keywords: Decision tree; Decision-making; NSCLC; QUARTZ; WBRT.