Radiochemotherapy

Combined modality therapy using chemotherapy and radiotherapy.

With the publication of the European Organisation for Research and Treatment of Cancer/National Cancer Information Center EORTC NCIC protocol, concomitant radiochemotherapy followed by intermittent chemotherapy became the new treatment standard for patients with primary glioblastoma.

Eight years after widespread introduction of this protocol, it is of interest to investigate whether this new standard has been established in daily neuro-oncologic practice.

Rapp et al. analyzed primary glioblastoma patients diagnosed between 2005 and 2013 treated at the Heinrich Heine Medical Centre, Düsseldorf, Germany according to the EORTC/NCIC trial. Parameters associated with treatment performance (interruption of radiotherapy, concomitant chemotherapy and intermittent chemotherapy, total number of cycles, and side effects) were retrospectively analyzed and compared with the available data from the EORTC/NCIC trial.

In this single-center retrospective study, we identified 189 patients (116 men, 73 women; median age: 62 years) who were treated according to the EORTC/NCIC trial protocol. A total of 176 patients received cytoreductive surgery; 13 patients had stereotactic biopsy only (EORTC/NCIC trial: 239 patients and 48 patients, respectively). Radiotherapy had to be interrupted in 9 patients (5%) (EORTC/NCIC trial: 15 patients [5%]) and concomitant chemotherapy in 26 patients (14%) (EORTC/NCIC trial: 37 patients [13%]). In 156 patients (83%), adjuvant TMZ chemotherapy was initiated (6 median temozolomide [TMZ] cycles; range: 1-30). In the EORTC/NCIC trial, 223 patients (47%) received the intermittent chemotherapy protocol (median: 3 cycles; range: 1-7). Overall, 97 patients (62%) completed 6 TMZ cycles (EORTC/NCIC-trial: 105 patients [47%]); dose escalation to 200 mg/qm at the second cycle was performed in 91 patients (58%) (versus 149 patients [67%]). Intermittent TMZ therapy was discontinued in 59 patients (38%) (versus 118 patients [53%]). Median overall survival in our patient cohort was 19 months (versus 14.6 months); median time to progression was 9 months (versus 6.9 months).

Comparison between the feasibility of the treatment protocol established by the EORTC/NCIC trial (performed within the setting of a prospective randomized trial) and the daily routine in a dedicated neurosurgical neuro-oncologic department demonstrates that the protocol is suitable for daily practice within a neurosurgical unit [1].

Waiting time after surgery and overall time data do not indicate a relevant time factor in the treatment of glioblastoma multiforme in a large contemporary single-centre cohort. Although a study was limited by its retrospective nature, its results indicate that short delays of postoperative radiochemotherapy, e.g. for screening of a patient for a clinical trial, may be uncritical [2].

1)
Rapp M, Sadat H, Slotty PJ, Steiger HJ, Budach W, Sabel M. Feasibility of the EORTC/NCIC Trial Protocol in a Neurosurgical Outpatient Unit: The Case for Neurosurgical Neuro-Oncology. J Neurol Surg A Cent Eur Neurosurg. 2015 Jul;76(4):298-302. doi: 10.1055/s-0034-1396437. Epub 2015 Apr 27. PubMed PMID: 25915500.
2)
Seidlitz A, Siepmann T, Löck S, Juratli T, Baumann M, Krause M. Impact of waiting time after surgery

and overall time of postoperative radiochemotherapy on treatment outcome in glioblastoma multiforme. Radiat Oncol. 2015 Aug 16;10(1):172. PubMed PMID: 26276734.