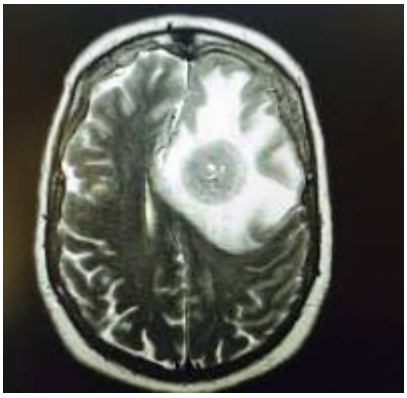
Radiation necrosis treatment



Radiation necrosis (RN) will be increasingly encountered due to the widespread use of SRS. Symptomatic RN can cause significant morbidity and should be managed pro-actively. There is no single modality which can reliably distinguish RN from recurrent tumor, and a multi-modal approach is often required. For patients with symptomatic RN, oral corticosteroid therapy and bevacizumab are both effective. A minority of patients, with an unclear diagnosis, or refractory symptoms, will require surgical resection. As RN proves to be a challenging condition to diagnose and manage, risk factor mitigation becomes important in clinical decision making [1)].

Using the internal database for pharmaceutical products, all patients who received BEV in the University of Munich were identified. Only patients who received BEV as symptomatic treatment for radiation necrosis were included. Patient characteristics, symptoms before, during, and after treatment, and the use of dexamethasone were evaluated using medical reports and systematic internal documentation. The symptoms were graded using CTCAE version 5.0 for general neurological symptoms. Symptoms were graded directly before each cycle and after the treatment (approximately 6 weeks). Additionally, the daily steroid dose was collected at these timepoints. Patients who either improved in symptoms, received less dexamethasone after treatment, or both were considered to have a benefit from the treatment.

Twenty-one patients who received BEV due to radiation necrosis were identified. For 10 patients (47.6%) symptoms improved and 11 patients (52.4%) remained clinically stable during the treatment. In 14 patients (66.7%) the dexamethasone dose could be reduced during therapy, 5 patients (23.8%) received the same dose of dexamethasone before and after the treatment, and 2 patients (9.5%) received a higher dose at the end of the treatment. According to this analysis, overall, 19 patients (90.5%) benefited from the treatment with BEV. No severe adverse effects were reported.

BEV might be an effective and safe therapeutic option for patients with radiation necrosis as a complication after cranial radiation therapy. Patients seem to benefit from this treatment by improving symptomatically or through reduction of dexamethasone [2)].

Perez-Torres et al. validated the VEGF specificity by comparing the therapeutic efficacy of anti-VEGF with non-specific isotype control antibody. Additionally, they found that VEGF over-expression and radionecrosis developed simultaneously, which precludes preventative anti-VEGF treatment [3)].

References

1)
Vellayappan B, Tan CL, Yong C, Khor LK, Koh WY, Yeo TT, Detsky J, Lo S, Sahgal A. Diagnosis and Management of Radiation Necrosis in Patients With Brain Metastases. Front Oncol. 2018 Sep 28;8:395. doi: 10.3389/fonc.2018.00395. eCollection 2018. Review. PubMed PMID: 30324090; PubMed Central PMCID: PMC6172328.
2)
Bodensohn R, Hadi I, Fleischmann DF, Corradini S, Thon N, Rauch J, Belka C, Niyazi M. Bevacizumab as a treatment option for radiation necrosis after cranial radiation therapy: a retrospective monocentric analysis. Strahlenther Onkol. 2019 Oct 4. doi: 10.1007/s00066-019-01521-x. [Epub ahead of print] PubMed PMID: 31586230.
3)
Perez-Torres CJ, Yuan L, Schmidt RE, Rich KM, Drzymala RE, Hallahan DE, Ackerman JJ, Garbow JR. Specificity of vascular endothelial growth factor treatment for radiation necrosis. Radiother Oncol. 2015 Sep 12. pii: S0167-8140(15)00462-4. doi: 10.1016/j.radonc.2015.09.004. [Epub ahead of print] PubMed PMID: 26376163.

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