Can We Omit Radiation Therapy in the Treatment of Brain Metastases from Melanoma?

Minniti et al

There have been dramatic improvements in the overall outcome for patients with metastatic melanoma as a result of immunotherapy with checkpoint inhibitors. There have also been anecdotal reports of intracranial responses observed in those treated with these systemic therapies. Clinicians are now asking when, and even if, radiation therapy should be utilized in those with melanoma brain metastases who are also receiving systemic treatment. In this Oncology Scan, the CNS editorial team critically review three recent trials of immunotherapy alone in patients with brain metastases from melanoma. Responses, often durable, were seen in the brain metastases of around half of those treated with checkpoint inhibitor combinations. Whether immunotherapy, SRS, or both represents first-line treatment is yet to be determined.

The Optimal Use of Imaging in Radiation Therapy for Lymphoma: Guidelines from the International Lymphoma Radiation Oncology Group (ILROG)

Mikhaeel et al

Imaging is now central to the management of lymphomas. Pre-treatment evaluation, treatment choice, radiation target volume definition, and radiation treatment verification all now turn on modern imaging. The safe era of smaller involved site or nodal volumes and lower radiation doses has been enabled by the evolution of modern imaging. The ILROG have developed a set of guidelines to guide the radiation oncologist in the most appropriate use of imaging in the contemporary management of lymphomas.

A Quantitative Clinical Decision—Support Strategy Identifying Which Patients With Oropharyngeal Head and Neck Cancer May Benefit the Most From Proton Radiation Therapy

Brodin et al

These authors assessed the normal tissue complication probability for 33 oropharyngeal cancer patients previously treated with photon IMRT, and then generated comparative proton therapy plans. OAR doses from photon and proton plans were used to calculate NTCPs. The average QALY reduction from all radiation complications for photon therapy was 1.52 and protons 1.15. The long-term complications of dysphagia and xerostomia contributed most to the QALY reduction. The QALYs spared with proton RT varied considerably between patients. Younger patients with p16-positive tumors who smoked ≤10 pack-years appeared to benefit most from proton therapy.
DCE-MRI and Quantitative Histology Reveal Enhanced Vessel Maturation but Impaired Perfusion and Increased Hypoxia in Bevacizumab-Treated Cervical Carcinoma

Hauge et al

Bevacizumab is a monoclonal VEGF-inhibitor that may influence the growth of tumor neovasculature. This xenograft study was designed to determine its influence on the microvasculature and oxygenation of cervical carcinomas, and to see whether these changes can be detected by dynamic contrast enhanced MRI. Tumors grown from two different patient derived cervical cancers were studied. Immunohistochemistry showed decreased vascular density, increased vessel pericyte coverage, and increased vessel maturation after bevacizumab treatment. There were fewer abnormal microvessels after bevacizumab but, due to treatment-induced vessel pruning, the overall function of the microvasculature was impaired resulting in increased tumor hypoxia detected by DCE-MRI.

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A Randomized Controlled Trial of Hyperbaric Oxygen to Prevent Osteoradionecrosis of the Irradiated Mandible After Dentoalveolar Surgery

Shaw et al

Hyperbaric oxygen (HBO) has been advocated in the prevention and treatment of osteoradionecrosis of the jaw following head and neck radiotherapy. This randomized controlled phase 3 trial recruited patients requiring dental extractions or implant placement in the mandible after prior radiotherapy to more than 50Gy. All 144 patients received chlorhexidine mouthwash and antibiotics and half were randomly assigned to HBO. The incidence of osteoradionecrosis at 6 months, the primary endpoints, was 6.4% and 5.7% for the HBO and control groups respectively. Patients in the hyperbaric arm had fewer acute symptoms but there were no significant differences in late pain or quality of life. This low incidence of osteoradionecrosis makes it unnecessary to recommend HBO for dental extractions or implant placement in the irradiated mandible.

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Is the Importance of Heart Dose Overstated in the Treatment of Non-Small Cell Lung Cancer? A Systematic Review of the Literature

Zhang et al

There may be a relationship between cardiac dose and mortality in non-small cell lung cancer (NSCLC), but data is conflicting. These authors conducted a systematic review and meta-analysis of all studies that evaluated cardiac dosimetric factors in patients with NSCLC and included outcomes of cardiac events, cardiac mortality and/or overall survival. They looked at 5614 patients across 22 studies, assessing a total of 214 cardiac dosimetric parameters. V5 was found to be a significant predictor of overall survival on multivariable analysis in 1 of 11 studies, V30 in 2 of 12 studies and Mean Heart Dose was not significant in any of 8 studies. For cardiac events, V5 was found to be significant in 1 of 2 studies, V30 in 1 of 3 studies, and MHD in 2 of 4 studies. Consistent heart dose-volume parameters associated with overall survival of NSCLC patients were not identified.

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Podcast

The latest podcast by Anthony Zietman, MD, Editor in Chief of the International Journal of Radiation Oncology, Biology, Physics focuses on:

Head, Neck, Brain, and Jaw

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