



Radiooncology and nuclear medicine

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Both in radiolo-oncology with percutaneous radiotherapy and in nuclear medicine with radionuclide therapy, significant progress has been achieved in recent years. In particular, with the aid of optimized imaging, but also through technical improvements, progress has been made with the aim of increasing effectiveness and, in turn, reducing toxicity as much as possible. In this issue, two articles will exemplify these advances. In the first article, Professor Lipp uses the example of imaging and therapy of prostate carcinomas to highlight the increasing importance of the nuclear medicine principle of theranostics [1]. In this principle, a target structure (in this case prostate-specific membrane antigen, PSMA) is addressed with the same ligand but different radionuclides. For diagnostic purposes, a positron emitter is used for positron-emission tomography (PET), and for therapeutic purposes an alpha or beta emitter is used. This makes it possible to determine at the diagnostic stage whether the therapeutic target structure is present in all tumor manifestations, thus, enabling targeted therapy and identifying patients with a low probability of response even before therapy begins. ⁶⁸Ga-PSMA PET/CT has become the gold standard in the diagnosis of biochemical recurrence and provides a high probability of localizing recurrence even at very low PSA levels starting at 0.2 ng/ml, thus, enabling appropriate therapy. Therapy with ¹⁷⁷Lu-PSMA has been shown to be effective and relatively well tolerated in a large phase III trial and has also currently received approval

from the European Medicines Agency for castration-refractory metastatic prostate cancer. The article also illuminates that therapy with ¹⁷⁷Lu-PSMA is more effective and less toxic than chemotherapy with cabazitaxel. Overall, a significant increase in this therapy is expected in the future.

In the second article, Dr. Waldstein summarizes the role of radiation therapy in the treatment of lymphoma [2]. Advances in radiation techniques, such as IMRT and VMAT, have reduced toxicity without disadvantages in terms of efficacy. In particular, she describes the indications for radiotherapy in Hodgkin's lymphoma, which has undergone a transformation in recent years. The indications for radiotherapy have been narrowed, resulting in a significant advantage in patient toxicity without worsening the overall prognosis of patients. Here, FDG PET/CT plays an important role in staging, as well as early treatment response, to select patients who will benefit from radiotherapy and vice versa. However, radiotherapy also plays an important role in indolent lymphomas, especially in the localized stadium, and the corresponding indications are discussed.

Conflict of interest A. Haug declares that he has no competing interests.

References

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