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ESTRO 2023 Clinical Track

Prostate SBRT

Stereotactic body radiotherapy (SBRT) is an emerging treatment option for prostate cancer patients that is associated with encouraging outcomes and promising toxicity profiles. Nevertheless, questions remain concerning the best treatment fractionation, whether or not elective nodal regions should be included, and the role of dose escalation.

During a proffered paper session that was dedicated to prostate SBRT, the impact of overall treatment time (OTT) on toxicity and long-term outcome was discussed. This subject has been investigated in two prospective trials. In the hypo-FLAME 2.0 trial, which was performed by Cédric Draulans *et al.*, a protracted OTT that involved delivery of a once-weekly SBRT schedule (35Gy with a boost up to 50Gy, in five fractions) was associated with a lower toxicity rate than was a semi-weekly schedule, although the effects of severe toxicity were comparable across the two schedules. On the other hand, the phase II randomised trial conducted by Thomas Zilli *et al.,* which was organised within the Novalis Circle scientific network and which compared an every-other-day versus once-weekly prostate SBRT schedule, was unable to show toxicity or outcome differences between the two schedules. This result may be due to the lower dose that was delivered to the prostate (36.25Gy in five fractions) in the Novalis trial and the use of a urethra-sparing technique.

Next, the role of whole pelvis radiotherapy was considered for patients with high-risk and node-positive prostate cancer. Dr Vedang Murthy presented the interim analysis of the phase III randomised trial of the use of moderate and extreme hypo-fractionation (PRIME) in these patients. Treatment of the whole pelvis through the use of a five-fraction SBRT schedule (25Gy and 36.25Gy to the prostate) was associated with a low rate of grade 3 acute toxicities and minimal impact on quality of life. This result was similar to those obtained with moderate hypofractionation in 20 or 25 fractions.

Finally, dose escalation was evaluated in two other trials. The boost to the dominant lesion was investigated by Dr Julia Murray within the cohort E of the dose escalation to intraprostatic tumour nodules in localised prostate cancer (DELINEATE) trial. Dr Murray's group found that delivery of a focal boost of up to 45Gy in five fractions through the use of SBRT was feasible, with a trend in urinary toxicity that was comparable to that caused in the contemporary SBRT series without a boost. From the prostate multi-centre external beam radiotherapy using stereotactic boost (PROMETHEUS) trial, Dr Jarad Martin reported the long-term results of delivery of a gantry-based SBRT boost (19-21Gy in two fractions) followed by conventional fractionated image-guided radiotherapy to the prostate. This schedule was associated with excellent biochemical and clinical disease control after five years and an acceptable rate of early and late urinary toxicities.

Prof Thomas ZILLI
Department of Radiation Oncology
Oncology Institute of Southern Switzerland, EOC
Bellinzona, Switzerland