GEC-ESTRO Workshop 2022

"Improving Brachytherapy Together"

1-2 December 2022, Nice, France

Report on breast

There were two excellent breast lectures at the Groupe Européen de Curiethérapie - European SocieTy for Radiotherapy and Oncology (GEC-ESTRO) Workshop 2022 held in Nice, France. Both talks were presented as part of the "New developments, new results" topic.

The first lecture, led by Professor Cristina Gutiérrez from the Catalan Institute of Oncology in Barcelona (Spain), gave an overview of current evidence in accelerated partial breast irradiation (APBI) with updated data on very accelerated PBI (vAPBI) and salvage APBI.

There was a presentation of the most recent consensus regarding PBI that was published by the American Brachytherapy Society in September 2022 (1), which reviewed randomised studies that have been performed on PBI and breast brachytherapy techniques. Multicatheter brachytherapy remains a strong recommendation for the performance of PBI. Nonetheless, the lecture showed the lack of uniform criteria regarding indications for PBI. It was also announced that the 10-year results of the GEC-ESTRO randomised phase 3 trial, which compared APBI with brachytherapy and whole breast radiotherapy (WBRT), would be published soon.

The updated results after 33 months of median follow-up of the vAPBI phase I-II study led by José Luis Guinot et al. (2) were enlightening; they found only one local relapse and 5% grade 2 fibrosis. The trial considered two treatment delivery schemes: four fractions, each of 6.25Gy, over two to three days or three fractions, each 7.45Gy, over two days. There is growing evidence that ultra APBI (one fraction of 16Gy) can be delivered to produce similar oncological outcomes and toxicities as APBI.

In the salvage setting, it was made clear that not all local relapses are candidates for a second conservative treatment. To decide whether such a relapse should be retreated, the GEC-ESTRO recommendations (2009) (3) and molecular and APBI classifications can be used, as demonstrated in the study led by Montagne et al. The time interval between primary treatment and salvage surgery is also crucial. The propensity score-matched cohort analysis of the GEC-ESTRO breast working group (4) database exposed a difference in distant metastasis-free survival in those patients with a time interval of ≥36 months versus <36 months (hazard ratio 2.06, p = 0.007). The same study showed no differences in five-year overall survival and cumulative incidence of third breast events for those patients treated with second conservative treatments versus mastectomy. Lastly, one of the most recent observational studies in second conservative treatment was discussed, led by Jean-Michel Hannoun-Levi et al. (5). The study of 224 patients, which used a median follow-up of 121.5 months, showed that the third ipsilateral breast event-free-survival rate was 89% after 10 years, and the mean time to relapse was 13.5 years. Brachytherapy salvage APBI provides an alternative to mastectomy in carefully selected patients.

The second talk was given by Marta Gimeno Morales from Clinica Universidad de Navarra in Pamplona, Spain. The main topic was peri/intraoperative and postoperative implantation techniques in breast brachytherapy. Dr Morales reviewed the evidence for breast brachytherapy in APBI, boost and salvage APBI, and explained the numerous trials that had been performed that used one technique or another. Postoperative breast brachytherapy has been tested in several phase III trials, whereas the intraoperative method has been tested in only phase II trials.

Postoperative breast brachytherapy is performed after the pathology results have been reported. In APBI cases, the overall treatment time should not exceed 12-20 weeks, or four weeks after WBRT in a boost scenario. The pre-plan requires sight of the surgical and pathological reports and an image (mammography, ultrasound, CT or MRI) in order to design the implant. The procedure should be guided by ultrasound, so expertise is required in the acquisition of precise planes of the tumour bed.

Intraoperative breast brachytherapy can be performed after the surgery, preliminary pathological report and sentinel biopsy have been done. This procedure saves overall treatment time and the repeat of anaesthesia. Nonetheless, performance of this procedure requires coordination with surgeons and the availability of brachytherapists. If intraoperative brachytherapy is

performed, treatment can be completed during the week that follows surgery. Needles can be inserted easily due to the direct visualisation of the tumour bed.

To summarise, the advantages and disadvantages of each approach were clearly shown. Target accuracy, treatment duration, and human and technical requirements are better in intraoperative implantation. On the other hand, pathology results must be confirmed, and there can be postoperative complications that extend the implant period.

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