

# European Society for Therapeutic Radiology and Oncology (ESTRO) teaching course and workshop

## E6. Recent advances in breast cancer radiotherapy

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**Keywords:** Breast cancer; Radiotherapy; Treatment planning; Target volume delineation; Organs at risk; Multi-disciplinary treatment; Side effects; Breast conserving treatment; Postmastectomy radiotherapy; Radiochemotherapy

Breast cancer is a very attractive subject for conferences and workshops as it constitutes a continuously moving field of interest thanks to the contribution of basic and translational research and, as a consequence, results emerging from clinical trials and other studies that contribute to our knowledge on aspects of disease progression, treatment and late effects. During this second ESTRO workshop on breast cancer preceding the European Breast Cancer Conference, we would like to update the participants on those topics that particularly have a direct practical consequence on the daily care of breast cancer patients.

### Session one – Target volume and OAR definition and delineation

Whereas our knowledge in many aspects of diagnosis, clinical behaviour and treatment of breast cancer has grown tremendously over the last decades, the radiotherapy techniques that are currently still in use at several radiotherapy departments have not kept up with this growth in knowledge.

This can be explained, at least in part, by a lack of knowledge regarding the definition and delineation of the precise target volumes in breast conserving therapy as well as in post-mastectomy radiotherapy.<sup>1</sup> In this session we will update you on the current status of this topic. Based on this work and the discussion that is intended to be generated, we are going to develop and present general guidelines for target volume delineation in breast cancer for the breast, the primary tumour bed, the thoracic wall as well as the regional lymph node areas. Together with this, delineation of the organs at risk will also be discussed. Only after this work has been done will we be able to make further progress in improving our radiotherapy techniques in breast cancer in a concise and reproducible manner.

### Session two – Fitting radiotherapy in the multimodality environment

Breast cancer treatment is an interdisciplinary approach. Almost all patients receive adjuvant or primary systemic treatment or even both.<sup>2,3</sup> Besides surgery, radiotherapy, hormonal treatment and chemotherapy, targeted therapies have been widely introduced as a standard treatment in case of Her2-neu positive tumours.<sup>4</sup> Adjuvant chemotherapy may cause considerable delay of radiotherapy in case of sequential treatment and enhanced toxicity in case of concurrent treatment.<sup>5,6</sup> The understanding of possible interactions between loco-regional radiotherapy and adjuvant systemic treatments including aromatase inhibitors and trastuzumab is still limited.<sup>7,8</sup> Our current knowledge of the optimal sequence and the potential influence of different approaches on the efficacy and toxicity of these treatments will be discussed.

### Session three – Late side effects

Nowadays, many more patients with breast cancer are diagnosed at an early stage of disease and therefore with a better prognosis. Moreover, the continuous improvement in the therapeutic approaches has clearly had a positive effect on the long time survival rate. Therefore, the occurrence of especially late side effects has become a very important issue, which should be anticipated and prevented already at the time of diagnosis and before proposing the initial treatment to the individual patient.

Long term side effects can be related to a number of physical parameters of radiotherapy such as dose, fractionation and volume, but also to patient characteristics including age and the presence of associated diseases, concurrent – oncological and other – treatments, and genetic factors that can be associated with an increased sensitivity to the effects of ionising irradiation.<sup>9</sup>

The current knowledge on these issues will be presented during this session with the aim of offering the audience a number of tools that can be used to improve the estimation of the risk/benefit ratio for the individual patient at the time of their treatment.

## Session four – Debates, discussions and case presentations

Whereas the idea of ‘ten doctors ten opinions’ does not hold true in radiation oncology, there exist several points of interest where some controversies do continue to exist. In two interactive debates we will discuss whether post-mastectomy radiotherapy should be advised to low-intermediate risk breast cancer patients and if we might consider breast conserving therapy as an appropriate approach for confirmed BRCA gene carriers.<sup>2,10,11</sup>

For some specific points, no common agreement exists because of a paucity of data due to an uncommon presentation or it may just because of the low incidence of a particular problem. An expert in this field will shed light on this.<sup>12</sup> The workshop will be concluded by the discussion of a number of clinical cases submitted beforehand by the audience.

We kindly invite not only radiation oncologists but also oncologists who are active or interested in the field of breast cancer to participate in this meeting where sufficient opportunities will be offered for interactive discussions and participation. Those who are in training are of course warmly welcomed as well.

## Conflict of interest statement

None declared.

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