Gynae sessions at the Groupe Européen de Curiethérapie-European SocieTy for Radiotherapy and Oncology online workshop, 9-10 Feb

There were excellent presentations in the gynaecological track at the Groupe Européen de Curiethérapie-European SocieTy for Radiotherapy and Oncology (GEC-ESTRO) online workshop, which gave us a good perspective on the future of brachytherapy (BT). The topic was widely represented in several sessions, not only in the gynaecological track.

The track opened with a lecture by Cyrus Chargari (France) that was dedicated to the combination of immunotherapy and radiotherapy that is widely used to treat gynaecological cancer. In high-risk cervical-cancer patients, the most promising therapeutic options are the anti-programmed-death ligand 1 and anti-vascular endothelial growth factor therapies. However, the results of the largest multicentre immunotherapy studies, such as the chemoradiotherapy for women with locally advanced cervical cancer study and the European network for gynaecological oncological treatment trials, are controversial regarding these therapies.

The next session, in which one of the main topics was gynaecological BT, covered technological advancements. There were exciting presentations about intra-operative imaging with mobile CT (by Christoph Bert and Vratislav Strnad, both from Germany). The O-ring or Imaging Ring device (from Elekta Studio) has been introduced in several BT centres in Europe. There are indications where the use of this device has a significant benefit in certain treatments, i.e. gynaecological, breast and liver tumours. It is a quality-assurance tool that offers perfect real-time insertion guidance. The image quality is not at the diagnostic level, but its use can be fused with any other imaging modality. The metal artefacts and air in the small bowel decrease the image quality, but vessels and the tips of the needles are visible in the images. It is mobile and compact, but operators find it difficult to control the velocity of its movement.

The next talk, by Maarten ter Mors from Elekta, featured the Geneva applicator, which is a widely usable modular gynae applicator. This one device can cover almost all the types of gynaecological BT because of its flexibility.

The session on the brachytherapy physics quality assurance system started with presentations about the commissioning and implementation of model-based dose calculation algorithms in BT. The speaker was Javier Vijande from Spain. The session concluded that Monte-Carlo is the most accurate method for dose calculation in BT; however, model-based algorithms that take into account tissue inhomogeneities result in calculations of similar dose distributions in a shorter time than is required for Monte Carlo simulations. However, application of any of these algorithms takes longer than the use of the American Association of Physicists in Medicine Task group 43 formalism.

The next presentation, by Taran Paulsen-Hellebust of Norway, discussed the considerations that physicists should make regarding combinations of BT with external beam radiotherapy (EBRT). The problems regarding the dose summation and image registration when these two therapies were combined were presented.

The epidemiological study of familial breast cancer (EMBRACE) and its follow-ups were the focus of the clinical studies session. The first lecturer was Remi Nout of The Netherlands, who talked about the overall frame of the EMBRACE III studies. He gave a panoramic view of the generations of EMBRACE studies, from RetroEMBRACE to EMBRACE III.

The second topic was the EMBRACE III registration study by Max Schmid of Austria. Unfortunately, technical difficulties hampered this presentation.

The last talk was about EMBRACE III low risk: the study of the de-escalation of EBRT and BT in low-risk patients. This talk was given by Kari Tanderup of Denmark. The third phase of this study has separated patients into high-risk (HR) and low-risk (LR) subgroups, and treatment of the two groups has been differentiated. For HR patients, a systematic approach is necessary; however, in LR cases (~20% of the patients) de-escalation to an external dose of 40Gy is a feasible option to reduce unnecessary toxicity.

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