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Abstract

Clinical and Technical Factors For Stereotactic Body Radiotherapy For Gynecological Cancer - Results from An International Radiosurgery Consortium Survey

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Abstract

Objectives: Stereotactic Body Radiotherapy (SBRT) has become one of the standard therapies for lung, liver and spine tumors but its role in gynecological cancers (GYN) has not been well defined. In the published literature, there exist significant variations in the clinical and technical factors of GYN SBRT technique among different treatment centers. The aim of this study is to determine technical and clinical factors in the use of SBRT for GYN among expert radiation oncologists.

Methods: A comprehensive 63 question survey on GYN SBRT was sent out to 11 radiation oncologists who have published original research, conducted clinical trials or have an established GYN SBRT program at their institutions in 5 different countries. The items addressed included clinical and technical factors such as eligibility criteria, indications, pre-treatment evaluation, target delineation, treatment planning technique, dose regimen, dose constraints and post-SBRT response evaluation. Responses were collected and analyzed at a central institution.

Results: Most respondents indicated that SBRT could be considered as salvage therapy for nodal (81%) and primary recurrent disease (91%) when brachytherapy is not feasible. All other indications should be considered in a clinical trial setting. Most would not use SBRT as a boost after external beam radiotherapy in primary treatment unless a patient has absolute contraindications to brachytherapy or is on a clinical trial. The most commonly used SBRT device for treatment delivery were LINAC with cone-beam CT and Cyberknife (7 centres each).Multi-modality imaging, including PET, contrast CT and MRI, is often (91%) used for treatment planning. Bladder protocols and fiducial markers are commonly used (81%) for CT simulation. There is a wide variation in dose constraints used for organs-at-risk (OARs). Small bowel is considered the dose-limiting structure for most experts (91%). Fractionation regimens range from 3-6 fractions for definitive and boost SBRT. For boost treatments, total EQD2 range from 64 Gy to 85 Gy, when prescribing to a CTV.

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Conclusions: Based on the results of this survey, there exist significant differences in GYN SBRT practice among different centers across the globe. There is a good consensus that nodal and recurrent disease is considered a potential indication for SBRT. However, no consensus can be reached with regard to other indications and SBRT is best offered in a clinical trial setting. There is a good consensus on the simulation and treatment delivery protocols but variations exist in dose-fractionation and planning.