

AbstractID: 2895 Title: Common Dosimetry Errors in Cervix Patients treated with Brachytherapy on Clinical Trials

Purpose: The mission of the Radiological Physics Center (RPC) is to assure NCI and the Cooperative Groups that institutions participating in clinical trials deliver radiation doses that are clinically comparable and consistent. Records of patients treated with brachytherapy on a cervix trial were reviewed for completeness, consistency with the protocol, and dosimetric accuracy. Independent dose calculations were performed at points A, B, vaginal surface, bladder and rectum.

Method & Materials: The RPC reviewed 271 HDR and LDR implants. Doses were calculated to points A, B, bladder, rectum and the vaginal surface as defined by the protocol in accordance with ICRU-38. The vaginal surface was defined as a point lateral to the center of the source(s) at the surface of the ovoid. RPC doses were compared to the institution's reported doses.

Results: Dosimetry dose reporting errors were discovered in 78% of the implants. Most errors resulted from incorrectly defining calculation points. For example, point B frequently was measured from the tandem rather than midline of the patient. Other errors were caused by planning only the first implant and not subsequent implants.

Conclusion: Points A, B, bladder, rectum and vaginal surface have been defined in publications, but a significant percentage of the community incorrectly calculates doses at these points. These reporting errors lead to inconsistencies in reported doses for the trial.

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