

AbstractID: 2067 Title: Comparison of Bladder Dose Descriptors in HDR Therapy for Intracavitary Gynecological Malignancies

The rapid change from fluoroscopically based simulation to CT based simulation in Radiation Oncology has led to an increasing number of facilities with CT simulation as the sole simulation modality. This has in turn led to an increase in the use to CT based 3-dimensional treatment planning for intracavitary Brachytherapy. Dosimetry based on multi slice CT data sets allows increased options for review of organ at risk (OAR) doses using 3-d isodose displays and dose volume histograms (DVH).

This work reviews the relationship among three potential bladder dose descriptors: the traditional Foley catheter balloon reference point, the bladder dose at the 5% volume level, and the bladder dose to the 0.2 cm³ volume. In a retrospective review of 20 dosimetry sets that include tandem and ovoids, ovoids only and vaginal candles, the Foley balloon and 5% volume DVH doses were similar, but the dose to the 0.2 cm³ volume was approximately 35% higher than doses described by the other two methods. Isodose clouds showing the spatial relationship between the volume specific doses and the OAR along with analysis of the potentially significant bladder neck doses will be presented.