

AbstractID: 9604 Title: Preliminary results from the multi-model analysis of bladder and rectum complication data.

Our preliminary results from the analysis of bladder and rectum complication data with different endpoints collected at the Cross Cancer Institute are reported. The data are part of a 3D conformal 4- or 6-field prostate treatment database, comprised of 81 patients. We have fitted Lyman's and critical volume population normal tissue complication probability (NTCP) models to this database. The bladder and the rectum were delineated as 3D solid organs. A set of parameter values for the different endpoints and different models was obtained. It was found that the endpoint corresponding to "at least a mild complication" is hard to model. The curve describing the mild response is usually very shallow in the range of change of the model descriptor – equivalent uniform dose (EUD) for the Lyman model and the mean damaged volume for the critical volume population model. The early response of bladder was well described by both models, while the resulting fits for the late response suggested a lack of relationship between the descriptors and the response. When rectum data were treated, Lyman's model performed better than the critical volume population model.