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Impact of Dose Constraints on Organs-at-Risk in Prostate Cancer Radiotherapy an Analysis of IMRT and VMAT Techniques

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ABSTRACT

Nonetheless, prostate cancer continued to afflict numerous patients and radiation remains a standard in the treatment of many. The purposes of this study were to delineate the dose-volume constraints for OAR in prostate patients treated with modern radiation techniques as MFR, IMRT & VMAT. The study uses continuously transmitted data between 2024 and 2025 to better deliver doses of radiation absorbed by critical organs such as the bladder and rectum. They are supposed to lower the radiation dosage that is directed at healthy tissues and make sure an efficient therapeutic dose reaches the prostate. It investigates dispersion concerns in treatment and the means of adapting prompt viability of treatment with long haul reactions. It ends with treatment planning recommendations and methods for organ at risk sparing.

Keywords: *VMAT; IMRT; Radiotherapy; Prostate; Cancer*