

Navigating the Challenges of Prostate Cancer and Dysuria

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ABOUT THE STUDY

In 2014, over 200,000 men were diagnosed with prostate cancer in the United States, making it the most frequent cancer in males. External beam radiation therapy and brachytherapy are the most commonly used radiation treatment techniques for localized prostate cancer. A number of factors influence treatment modality selection, including age, performance status, risk stratification, and patient desire. Because prostate cancer has a high cure rate and a long natural history, therapy side effects may have a significant influence on quality of life. Urinary symptoms are a primary predictor of post-prostate radiation outcomes. Dysuria is a clinical symptom of benign prostatic enlargement and/or prostatitis. It is a typical side effect of pelvic radiation therapy that can be difficult to manage. Individuals with radiation-induced dysuria report burning or pain during urinating. The cause of radiation-induced dysuria is uncertain, but it could be caused by inflammation and mucosal loss in the urethra and bladder neck. A variety of factors appear to influence the risk of dysuria, including prostate volume, volume of the urethra receiving a high-radiation dose, and delayed administration of alpha-blockers. Dysuria is frequently an acute symptom that occurs within the first few months of treatment and resolves with time. Proper capture of the patient's reported experience is strongly dependent on the assessed time points, with some reports potentially missing the entire level of dysuria when the first evaluation is not during the first weeks to months after therapy. Additional factors that may influence dysuria reporting include the severity of the symptom, with only the most severe symptomatology being reported, and the questions used to

collect data, with only some forms including specific questions about dysuria. Despite the challenges of acquiring dysuria information and changes in data capture procedures amongst researchers, there appear to be differences in both the severity and the temporal characteristics of the peak and resolution of dysuria depending on the radiation approach used.

After 2, 6, and 12 months after conventionally fractionated External Beam Radiation Therapy (EBRT), the frequency of moderate to severe dysuria is 12, 5, and 1%, respectively. At 2, 6, and 12 months, brachytherapy patients reported a frequency of moderate to severe dysuria of 24, 11, and 11%, respectively.

Indeed, dysuria is a regularly documented side effect of brachytherapy treatment, with rates ranging from 85-88% at 1 month to 50% at 6 months. Men who reported dysuria following brachytherapy had it for 36 months before it went away. While urethral dosage has been demonstrated to be a statistically significant predictor of urinary morbidity, investigations examining clinical, therapeutic, and dosimetric variable predictors of brachytherapy-related dysuria have failed to show relevance. Only higher American Urological Association post-implant ratings strongly predicted dysuria. Prophylactic tamsulosin dramatically reduced dysuria rates following irradiation. Radiation dose and fractionation for the curative treatment of prostate cancer are now being studied in clinical trials. While normal radiation dosing requires daily treatment for 8-9 weeks, stereotactic body radiation therapy allows for treatment in a shorter time frame with fewer, higher-dose fractions of radiation. However, it is unclear whether using large fraction sizes may increase the incidence and severity of urinary morbidity, such as dysuria.

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