

Radiation therapy for prostate cancer raises bladder, rectal cancer risk, study indicates

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The risk of developing bladder cancer is higher for men receiving radiotherapy for prostate cancer than those who undergo radical prostatectomy, and the risk of rectal cancer is higher for those receiving external beam radiotherapy than those who undergo radical prostatectomy, according to a recent study.

Prostatectomy and radiation therapy are the 2 most common forms of treatment for prostate cancer, and their success rates for achieving long-term disease-free survival are relatively similar. Radiotherapy, however, does not carry the risks of incontinence and erectile dysfunction associated with radical prostatectomy.

In this retrospective study, 243,082 men 40 years or older who underwent radical prostatectomy or radiotherapy for prostate cancer between 1988 and 2003 were grouped according to type of treatment received: radical prostatectomy (RP; 109,178; 45%); external beam radiotherapy (EBRT; 93,059; 38%); interstitial brachytherapy (BT; 22,889; 9%); or a combination of EBRT and BT (EBRT-BT; 17,956; 7%).

The groups were followed from the time of prostate cancer diagnosis until the development of bladder or rectal cancer, death, or date of last follow-up. Median follow-up time was 49 months (range, 6-191 months).

Compared to radical prostatectomy, the relative risk of developing bladder cancer was 1.88 after EBRT, 1.52 after BT, and 1.85 after EBRT-BT. The relative risk of developing rectal cancer was 1.26 after EBRT, 1.08 after BT, and 1.21 after EBRT-BT.

Patients who had a radical prostatectomy had a standardized incidence ratio (SIR) of bladder cancer nearly identical to the U.S. population (SIR, 0.99; 95% CI, 0.91-1.05). However, subjects in the EBRT (SIR, 1.42; 95% CI, 1.34-1.50) and EBRT-BT cohorts (SIR, 1.39; 95% CI, 1.19-1.64) had higher than expected incidence rates of bladder cancer compared to the U.S. population.

"When we calculated the age adjusted incidence risk ratio, we found that all radiation treatment cohorts had a statistically significant higher risk of bladder cancer developing compared to the radical prostatectomy cohort," the investigators noted. Those at highest risk were those who received EBRT. Only the EBRT cohort had an increased risk of rectal cancer. Patients undergoing EBRT-BT were 3 times more likely to have rectal cancer after 10 years than those treated with radical prostatectomy (HR, 3.25; 95% CI, 1.25, 8.44).

According to the investigators, the results of this study support including the risk of secondary malignancy of the bladder and rectum into the decision-making process for the patient. (Nieder A, et al. [J Urol](#) 2008;180:2005-2010.)