

**National Cancer Institute:  
Effectiveness of Prostate Radiation Therapy**

*Prostate-specific antigen screening has led to an increase in the diagnosis and treatment of localized prostate cancer. However, the role of active treatment of low- and intermediate-risk disease in elderly men is controversial. This study estimates the association between treatment (with radiation therapy or radical prostatectomy) compared with observation and overall survival in men with low- and intermediate-risk prostate cancer. This study suggests a survival advantage is associated with active treatment for low- and intermediate-risk prostate cancer in elderly men aged 65 to 80 years.*

**Lead Agency:**

National Cancer Institute/National Institutes of Health

**Agency Mission:**

The National Cancer Institute coordinates the National Cancer Program, which conducts and supports research, training, health information dissemination, and other programs with respect to the cause, diagnosis, prevention, and treatment of cancer, rehabilitation from cancer, and the continuing care of cancer patients and the families of cancer patients.

**Principal Investigator:**

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Planning Officer  
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**General Description:**

Prostate-specific antigen screening has led to an increase in the diagnosis and treatment of localized prostate cancer. However, the role of active treatment of low- and intermediate-risk disease in elderly men is controversial. This study estimates the association between treatment (with radiation therapy or radical prostatectomy) compared with observation and overall survival in men with low- and intermediate-risk prostate cancer using the US cohort from Surveillance, Epidemiology, and End Results Medicare data. A total of 44,630 men aged 65 to 80 years who were diagnosed between 1991 and 1999 with organ-confined, well- or moderately differentiated prostate cancer and who had survived more than a year past diagnosis. Patients were followed up until death or study end and were classified as having received treatment if they had claims for radical prostatectomy or radiation therapy during the first 6 months after diagnosis. They were classified as having received observation if they did not have claims for radical prostatectomy, radiation, or hormonal therapy. Patients who received only hormonal therapy were excluded. At the end of the 12-year study period, 37% of men in the

observational group 23.8% in the treatment group had died. The treatment group had longer 5- and 10-year survival than the observation group. After using propensity scores to adjust for potential confounders (tumor characteristics, demographics, and comorbidities), there was a statistically significant survival advantage associated with treatment. A benefit associated with treatment was seen in all subgroups examined, including older men (aged 75-80 years at diagnosis), black men, and men with low-risk disease. This study suggests a survival advantage is associated with active treatment for low- and intermediate-risk prostate cancer in elderly men aged 65 to 80 years. Because observational data cannot completely adjust for potential selection bias and confounding, these results must be validated in randomized controlled trials of alternative management strategies in elderly men with localized prostate cancer.

***Excellence:*** What makes this project exceptional?

This observational study suggests a reduced risk of mortality associated with active treatment for low- and intermediate-risk prostate cancer in the elderly Medicare population examined. Although a randomized controlled trial design is needed to confirm these findings, they help begin to answer the long-standing questions regarding treatment decisions for older men.

***Significance:*** How is this research relevant to older persons, populations and/or an aging society?

This study is relevant to older populations because prostate cancer primarily affects older men. In fact, from 2001-2005, the median age at diagnosis for cancer of the prostate was 68 years of age, with over 62% of all persons diagnosed over 65. This study supports the use of treatment to prolong life for these older men.

***Effectiveness:*** What is the impact and/or application of this research to older persons?

This research is especially applicable to older men because of the large percentage of prostate cancer cases in this population. Upon further study, confirmation of these results will lead to the more effective treatment of older men.

***Innovativeness:*** Why is this research exciting or newsworthy?

This study suggests a survival advantage is associated with active treatment for low- and intermediate-risk prostate cancer in elderly men aged 65 to 80 years. By helping to answer long-standing questions about appropriate types of treatment for prostate cancer, especially for older men, these findings propel researchers to begin to confirm these findings. Through future randomized studies the finding that treatment is effective for older men can be confirmed and put into practice holding the promise to affect countless older men diagnosed with this disease.