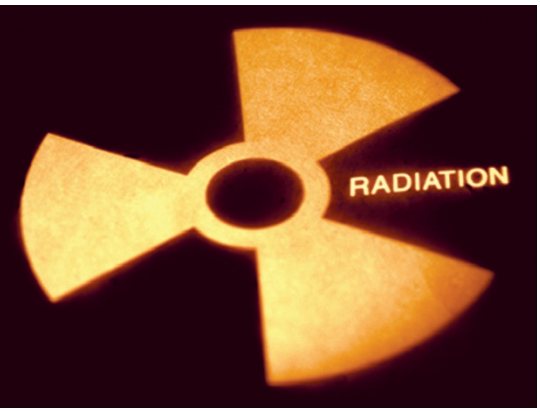
PROSTATE CANCER

Long-term outcomes of SBRT in low-risk prostate cancer

The first reports on long-term outcomes of stereotactic body radiotherapy (SBRT) demonstrate that this treatment is both safe and effective for low-risk prostate cancer. "The benefits [of SBRT] are numerous and far reaching, and include greater patient convenience and diminished impact on quality of life, the benefits of a noninvasive treatment, and a significant reduction in costs (~50%)," notes Christopher King (UCLA School of Medicine, USA), who was involved in both studies.

Given the unique radiobiological nature of prostate cancer—a high sensitivity to radiation dose fraction size compared with other cancers—hypofractionated radiotherapy (that is, large radiation dose per fraction) has emerged as a possible treatment for the disease. SBRT is one such technique that enables focused delivery of a high dose of radiation to a precisely defined target.



Both studies utilized the CyberKnife® (Accuracy Incorporated, Sunnyvale, USA) system to deliver SBRT (35–36.25 Gy in five fractions) to patients with clinically localized, low-risk prostate cancer. "The treatment is entirely noninvasive, has no hospital stay, no anesthesia, and treatment sessions are short (less than 30 min)," explains King.

For the first report, 67 men enrolled in a phase II clinical trial received SBRT and were followed up for a median of 2.7 years. SBRT elicited good tumor control; 4-year PSA-relapse-free survival was 94% and serum PSA levels declined to a median of 0.5 ng/ml during follow-up. Moreover, few serious toxicity-related complications occurred. No grade 4 urinary or rectal toxicities (including persistent urinary bleeding or incontinence, or rectal bleeding or fecal incontinence) were observed, and incidences of mild to moderate (grades 1 and 2) bladder and rectal toxicities were equal to, if not better than, those associated with standard radiotherapy.

The second study focused on the 5-year outcomes of a pooled cohort of 41 men with prostate cancer who received SBRT at two US institutions, one in Stanford, CA, and the other in Naples, FL. Again, the majority (93%) of patients remained progression-free during follow-up (with a median serum PSA nadir of 0.3 ng/ml). No severe (grade 4) rectal or urinary toxicities were observed and SBRT was well tolerated overall. Patients resumed normal activities within 1 week of treatment. Acute adverse effects—such as dysuria, urinary urgency and nocturia—resolved within 1 month of completion of SBRT.

> "...few serious toxicity-related complications occurred"

These data add to the growing body of literature on SBRT for prostate cancer and provide crucial insights into the long-term outcomes of this therapy. "SBRT trials continue to accrue and to extend follow-up," says King. He adds that further trials with greater numbers of participants and longer follow-up are needed before SBRT can be considered a standard of care for men with prostate cancer.

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Original articles King, C. R. *et al.* Long-term outcomes from a prospective trial of stereotactic body radiotherapy for low-risk prostate cancer. *Int. J. Radiol. Oncol. Biol. Phys.* doi:10.1016/j.ijrobp.2010.11.054 | Freeman, D. E. & King, C. R. Stereotactic body radiotherapy for low-risk prostate cancer: five-year outcomes. *Radiat. Oncol.* **6**, 3 (2011)