PROSTATE CANCER

Salvage brachytherapy following local failure of radiation therapy: 5-year and 10-year outcomes

The best treatment option for patients with prostate cancer who experience local recurrence after definitive radiation therapy is a topic of debate. Salvage brachytherapy, cryotherapy and radical prostatectomy have shown varying biochemical and quality-of-life outcomes according to disease-related and patient-related factors, but long-term data are currently in short supply. A group at Mount Sinai Medical Center have published the results of a retrospective, long-term follow-up study of salvage brachytherapy in patients who failed initial radiation therapy.

“...careful patient selection for salvage brachytherapy might lead to improved clinical and quality-of-life outcomes...”

The study, published in the August issue of the *International Journal of Radiation Oncology, Biology and Physics*, included 37 men (median age 65 years, 31 white) with biopsy-proven local failure after initial external beam radiation therapy ($n = 32$) or brachytherapy ($n = 5$). Between June 1994 and February 2008, these patients underwent salvage brachytherapy with

either ^{103}Pd or ^{125}I at a median radiation dose to 90% of the prostate of 122 Gy (range 67–166 Gy). The median post-brachytherapy follow-up duration was 86 months (range 2–156 months).

The overall 5-year and 10-year rates of freedom from biochemical failure (according to the Phoenix definition) were 65% and 54%, respectively. The 5-year and 10-year cause-specific survival rates were both 96%; of the 10 deaths that occurred during follow-up, only 1 was attributed to prostate cancer. On multivariate analysis, only pre-salvage PSA level $<6\text{ ng/ml}$ was significantly associated with improved freedom from biochemical failure compared to pre-salvage PSA $\geq 6\text{ ng/ml}$ (hazard ratio 8.44, $P = 0.046$).

Of the 37 patients included in the study, 17 (46%) experienced grade ≥ 2 toxicity. Of these, three patients developed grade 3 toxicity (obstructive uropathy [$n = 2$] and gross hematuria [$n = 1$]), and one patient developed a grade 4 prostatic fistula. Pelvic lymph node dissection before salvage therapy was the only factor significantly associated with an increased risk of grade ≥ 2 toxicity ($P = 0.033$).

The long follow-up duration employed in this study revealed that the risk of biochemical recurrence persists beyond

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5 years, with approximately 10% of patients experiencing biochemical failure beyond this point. As patients with pre-salvage serum PSA levels $<6\text{ ng/ml}$ seemed to have an increased rate of freedom from biochemical failure, and previous pelvic lymph node dissection seemed to increase the risk of moderate-to-severe toxicity, careful patient selection for salvage brachytherapy might lead to improved clinical and quality-of-life outcomes.

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Original article Burri, R. J. *et al.* Long-term outcome and toxicity of salvage brachytherapy for local failure after initial radiotherapy for prostate cancer. *Int. J. Radiat. Oncol. Biol. Phys.* 77, 1338–1344 (2010)