Hypofractionated Radiation Therapy (66 Gy in 22 Fractions at 3 Gy per Fraction) for Favorable-Risk Prostate Cancer: Long-term Outcomes.


Department of Radiation Oncology, McGill University Health Centre, Montreal, Quebec, Canada.

Abstract

PURPOSE: To report long-term outcomes of low- and intermediate-risk prostate cancer patients treated with high-dose hypofractionated radiation therapy (HypoRT).

METHODS AND MATERIALS: Patients with low- and intermediate-risk prostate cancer were treated using 3-dimensional conformal radiation therapy to a dose of 66 Gy in 22 daily fractions of 3 Gy without hormonal therapy. A uniform 7-mm margin was created around the prostate for the planning target volume, and treatment was prescribed to the isocenter. Treatment was delivered using daily ultrasound image-guided radiation therapy. Common Terminology Criteria for Adverse Events, version 3.0, was used to prospectively score toxicity. Biochemical failure was defined as the nadir prostate-specific antigen level plus 2 ng/mL.

RESULTS: A total of 129 patients were treated between November 2002 and December 2005. With a median follow-up of 90 months, the 5- and 8-year actuarial biochemical control rates were 97% and 92%, respectively. The 5- and 8-year actuarial overall survival rates were 92% and 88%, respectively. Only 1 patient died from prostate cancer at 92 months after treatment, giving an 8-year actuarial cancer-specific survival of 98%. Radiation therapy was well tolerated, with 57% of patients not experiencing any acute gastrointestinal (GI) or genitourinary (GU) toxicity. For late toxicity, the worst grade ≥2 rate for GI and GU toxicity was 27% and 33%, respectively. There was no grade >3 toxicity. At last follow-up, the rate of grade ≥2 for both GI and GU toxicity was only 1.5%.

CONCLUSIONS: Hypofractionation with 66 Gy in 22 fractions prescribed to the isocenter using 3-dimensional conformal radiation therapy produces excellent biochemical control rates, with moderate toxicity. However, this regimen cannot be extrapolated to the intensity modulated radiation therapy technique.