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Abstract

How Does Stereotactic Body Radiotherapy Compare to a Radical Prostatectomy using the Preoperative CAPRA Index: The 6.5 Year Biochemical Relapse Free Survival Results of 362 Patients Treated at a Single Community Hospital

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Abstract

Objectives: Very few surgery outcomes are reported based solely on the information obtained prior to surgery. Our report compares the biochemical relapse-free survival rate of stereotactic body radiotherapy to surgery based off of the CAPRA preoperative index in three hundred sixty-two prostate cancer patients.

Methods: Between 2006 to the present, 423 prostate cancer patients have been treated with robotic stereotactic body radiotherapy. A total of 362 patients with at least 1-1/2 years of follow-up were assigned a CAPRA score. Variables such as the PSA, the primary and secondary Gleason grade, the clinical T stage, the percent of positive biopsy cores, and the age are each assigned a point. Two hundred ninety-four patients received 3750 cGy in 5 fractions, fifty-six patients received 4500 cGy to the whole pelvis with a stereotactic boost to the prostate using 2100 cGy in 2 fractions, and 12 patients received other fractionation schemes. Thirty percent of the patient's considered intermediate risk and 60 percent of patients considered high risk received some androgen deprivation therapy.

Results: The average age of the SBRT patients is 72 (85-56). Recurrence was defined as a PSA level of greater than 0.2 ng/ml for both groups. Additionally, for the surgery group based on the original article, 2 PSA levels of 0.2 ng/ml or a secondary treatment for an elevated postoperative PSA also counted for a biochemical relapse. Six groups were made to compare a radical prostatectomy to robotic stereotactic radiosurgery (0-1, 2, 3, 4-5, 6, >7) with the higher number representing higher risk disease. The results of the surgical outcomes are reported by Dr. Matthew R Cooperberg in the Journal of Urology 2005;173:1938-1942. It involves 1701 men treated with a radical prostatectomy from 33 American Urology practices. The reported five-year biochemical relapse-free survival after radical prostatectomy based on the CAPRA scores are as follows: CAPRA 0-1- 85%; 2- 81%; 3 - 66%; 4-5 - 60%; 6 - 34%; 7-10 - 8%. The corresponding 6-1/2 year SBRT results are as follows: 0-1 - 97%(n=39); 2 - 92%(82); 3 - 98%(60); 4-5 - 92%(107); 6 - 91%(41); 7-10 - 63%(33).

Conclusions: In this large series from a single community-based hospital, we found excellent biochemical control rates compared to a radical prostatectomy. Most surgical studies report

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disease-specific survival outcomes and not biochemical relapse-free survival which can have an impact on the patient's quality of life and the recommendations for additional therapy. Considering the efficacy, the Medicare cost, the convenience, and the safety reported by others, this may become the new standard.