

Biochemical Failure-Free Survival in Patients with Low And Intermediate Risk Prostate Cancer Treated with Stereotactic Radiotherapy. Experience of The Oncology Hospital at The 21st Century National Medical Center in México City

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Objectives: To determine the 5-year biochemical failure-free survival in patients with low and intermediate risk prostate cancer treated with fractional stereotactic radiotherapy. **Background:** Prostate cancer (PC) is the second most common malignant tumor worldwide in the male population, and in Mexico it ranks number one place in incidence. The treatment options for localized prostate cancer are observation, active surveillance, radical prostatectomy and radiotherapy (external beam irradiation with conventional fractionation, brachytherapy or stereotactic body radiation therapy (SBRT). PC has a lower α / β than surrounding normal tissues, giving a therapeutic advantage to hypo-fractionated schemes versus conventional ones. SBRT treatment offers similar biochemical failure-free survival rates compared to conventional fractionation. In addition, SBRT has more benefits, less treatment days and lower toxicity and cost.

Methods: A retrospective study was performed, we included patients diagnosed with PC -low and intermediate risk- according to D'Amico classification, who were treated with SBRT on CyberKnife platform between July 2012 to August 2014 at the Oncology Hospital of the 21st Century National Medical Center. We obtained demographic, clinical and treatment variables data. The primary objective was to determine the 5-year biochemical failure-free survival with the Kaplan-Meier method. The secondary objectives were toxicity rates and overall survival.

Results: A total of 61 patients were included. The radiation therapy doses were 35 Gy in 47% and 36.25 Gy in 53%. The mean age was 67 years (range, 47-78 years), 19 patients were low risk (31.1%) and 42 were intermediate risk (68.9%). The mean of follow-up was 64 months. Patients were treated in 5 consecutive days, after fusion with MRI and gold fiducial placement. The 5-year biochemical failure-free survival was 90.2% (95% CI) in the total population. In the low risk group, the 5-year biochemical failure-free survival was 89.5% (95% CI) and in the intermediate risk group was 90.5% (95% CI). When applying the log-rank test, no statistically significant difference was found between the groups ($p = 0.932$). The overall survival was 98.4%. The most common acute and chronic toxicity was urinary (grade 1) 39% and 28% respectively.

Conclusions: SBRT has a biochemical failure-free survival of 90.2% and an overall survival rate of 98.4%, similar to previous studies. Nonetheless, SBRT has low severe toxicity rates (1%). Therefore, the use of SBRT for prostate cancer is an effective and safe treatment.

