Prognostic factors in prostate cancer patients treated with helical tomotherapy

C. Beltran[1], J. Lopez Guerra[2], R. Matute[1], C. Acevedo[3], M. Russo[4], E. Rivin[5], F. Puebla[1], A. Sanchez-reyes[6], J. Jaen[1], I. Azinovic[1]
[1] *Instituto Madrileño de Oncología/Grupo IMO, Radiation Oncology, Spain*
[2] *Hospitales Universitarios Virgen del Rocío, Radiation Oncology, Spain*
[3] *Fundación Valle del Lili, Radiation Oncology, Spain*
[4] *Diego Portales University, Spain*
[5] *Institut de cancérologie Gustave Roussy, Radiation Oncology, France*
[6] *Instituto Madrileño de Oncología/Grupo IMO, Radiation Physics, Spain*

Background. Image-guided radiation therapy (RT) has been shown to decrease acute toxicity for prostate cancer (PC).
Aim. We present the clinical results and the prognostic factors assessment for toxicity of helical tomotherapy (HT) in PC patients.
Methods and materials. From May 2006 to January 2011, 70 cT1-T3 cN0 cM0 PC patients were treated with HT (primary diagnosis, $n = 48$; post-prostatectomy biochemical recurrence, $n = 15$; post-brachytherapy biochemical recurrence, $n = 2$; and post-prostatectomy adjuvance, $n = 5$). The dose prescribed to the prostate ranged between 72 and 78 Gy with conventional fractionation (2 Gy/fraction). Potential risk factors for toxicity were assessed in univariate and multivariate logistic regression analysis.
Results. The median age was 68 years and the median follow-up 37 months. For patients with a primary diagnosis or those receiving adjuvant HT, median overall survival was 45 months. For patients receiving HT for biochemical recurrence, overall survival was 24 months. The rates of acute grade 2 gastrointestinal (GI) and genitourinary (GU) toxicities were 13% and 10%, respectively. Only one patient experienced acute grade 3 GU toxicity. The rates of late grade 2 GI toxicities were 1.5%, and those of late grade 2 GU toxicities were 1.2%. No patients experienced late grade ≥3 toxicity. Multivariate analysis showed that receiving a rectum mean dose > median (39 Gy) or a bladder median dose > median (46 Gy) was associated with a higher grade of acute GI (OR: 3.53; $P = 0.017$) and GU toxicity, respectively (OR: 5.31; $P = 0.019$). In addition, having an older age was associated with a higher grade of late GU toxicity (OR: 3.94; $P = 0.026$).
Conclusion. This preliminary report confirms the feasibility of HT for PC. HT is associated with a very low risk of toxicity and a low recurrence rate. Acute and late gastrointestinal and genitourinary toxicities were tolerable without any grade > 3 side effects.

http://dx.doi.org/10.1016/j.rpor.2013.03.504

Prognostic factors of failure radiotherapy after radical prostatectomy

D. León[1], M. Rodríguez[1], M. Carballo[1], L. Tortolero[1], J. Freire[1], P. Willisch[2], V. Muñoz[2], A. Ojea[3]
[1] *Complejo Hospitalario Xeral-Cies, Urology, Spain*
[2] *Hospital do Meixoeiro, Radiotherapy and Oncology, Spain*
[3] *Hospital do Meixoeiro, Urology, Spain*

Introduction. Biochemical recurrence (RB) after radical prostatectomy (RP) is associated with increased likelihood of metastasis and death from cancer. The goal of radiation therapy (RT) is to control local recurrence. However, after RT, almost half fail at 5 years, suggesting: presence of cancer beyond the radiation field.
Objective. Identify prognostic factors that can predict the outcome of RT after RP.
Material and methods. Were analyzed between enero/1992-diciembre/2012 RP performed, 289 (26%) had RB. 94 (32%) patients were classified as local RB: (1) PSA < 0.20 ng/ml 6 weeks after PR, (2) time to RB > 6 months, (3) duplication PSA > 6 months and (4) speed PSA < 0.75 ng/ml/year. And 195 (68%) as systemic RB. RT failure was defined: two consecutive elevations of PSA > 0.20 after RT or persistent PSA. Survival was calculated with Kaplan–Meier and log-rank test. Prognostic factors were analyzed with proportional hazards models Cox. And logistic regression (relationships between factors and outcome)
Results. 94 patients received a median of 64Gy in bed. PSA pre-prostatectomy 9.65 (4.5–68). Pre-radiotherapy PSA:0.67 (0.1–5.23). Media monitoring 51 months. 55% reached a nadir PSA < 0.1 ng/ml. Of those who failed RT, 52% had positive margins (PSM), 26% seminal vesicle invasion (SVI) and 54% extracapsular extension (CSE). Time from PR to RB was 12.3 months. Time from PR to RT was 18.9 months. Time was 9.4 months failure after RT. Mean follow after PR and RT was 75.8 and 53.6 months respectively. 68% had complete response in mean 18 (6–28) months. RB-free survival at 5 years was 41% (95% CI, 37–45%). In the multivariate analysis were associated with RB: Gleason ≥8 ($p < 0.001$), PSM ($p < 0.05$), IVS ($p < 0.001$), PSA > 0.20 pre-radiotherapy ($p < 0.01$). Gleason and IVS being the strongest predictors of biochemical failure after RT.
Conclusion. The Gleason >7 and seminal vesicle invasion are strongly associated with the failure of radiotherapy after radical prostatectomy
Keywords. Radiation; Radical prostatectomy; Prostate cancer

http://dx.doi.org/10.1016/j.rpor.2013.03.505