

## **Prospective study on quality-of-life and toxicity of high-dose-rate brachytherapy as an interstitial boost for localized prostate cancer**

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### **Background and purpose:**

We report on the outcome, toxicities and quality-of-life (QoL) of patients after high-dose-rate (HDR)-brachytherapy as a boost to external beam radiotherapy (EBR) for intermediate and high risk localized prostate cancer.

### **Materials and methods:**

416 patients were treated in a single institution with HDR-brachytherapy in afterloading-technique as a boost to 3D-conformal EBR (50.4 Gy) between April 2003 and December 2006. Patients were classified as low-risk in 7.8%, intermediate-risk in 40.1% and high-risk in 52.1%. 53% of patients received neoadjuvant or adjuvant androgen deprivation therapy. Patients were followed in terms of PSA-levels, QoL, urinary function and sexual status. Validated questionnaires (IPSS; EORTC QLQ C30, PR25-Prostate-Module, IIEF5) were prospectively administered to all patients before and at 1, 3, 6, 12 and 24 months after treatment.

### **Results:**

Median follow-up of patients was 34 months (12-56 months). Median PSA for intermediate-risk and high-risk groups decreased from initially 11 ng/ml to 0.15 ng/ml after 36 months. 3-year biochemical control rate for hormone naive patients, as defined by the ASTRO, was 87%. Urinary function (before HDR mean IPSS 8.9) worsened at 3, 6 and 12 months after HDR but remained stable (mean IPSS 10.6/9.3/10.3). Urinary bother score (UB) in PR25 was 30.17 immediately after HDR and improved significantly over the next twelve months (mean UB 23.61) to almost baseline 19.05 at 24 months. There was no change in bowel function (BF) throughout the study period (before HDR score 4.06, after HDR mean score 5.81). General health status (GHS) before HDR was excellent (score 72.41) and showed only slight decrease at all intervals after HDR (mean score 67.25). At 24 months patients reached baseline in GHS with a mean score of 69.84.

### **Conclusions:**

Combined HDR-brachytherapy for intermediate and high-risk prostate cancer results in excellent biochemical control and quality of life with minor acute or late complications.