

## THREE-DIMENSIONAL CONFORMAL EXTERNAL BEAM RADIOTHERAPY VERSUS THE COMBINATION OF EXTERNAL RADIOTHERAPY WITH HIGH-DOSE RATE BRACHYTHERAPY IN LOCALIZED CARCINOMA OF THE PROSTATE: COMPARISON OF ACUTE TOXICITY

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**Aims and background:** Radiotherapy represents one of the basic therapeutic methods in treatment of localized carcinoma of the prostate. Optimal irradiation dose is the cornerstone of a successful treatment. Along with local control of the disease and overall survival of the patient, possible acute and long-term side effects need to be monitored very closely.

**Methods:** A non-randomized prospective study comparing the acute genitourinary and gastrointestinal toxicity in patients irradiated for localized carcinoma of the prostate. Fifty-seven patients were treated with three-dimensional conformal external beam radiotherapy alone, and in the second treatment arm a combination of external beam radiotherapy and high-dose rate brachytherapy was employed in 40 patients.

**Results:** *Three-dimensional conformal external beam radiotherapy.* Acute G1 genitourinary toxicity was recorded in 35.1% of patients, G2 in 22.8%, and G2-3 in one patient (1.7%). Acute gastrointestinal toxicity was experienced by 54.4% of patients, G1 in 28.1%, G2 in 17.5%, and G3 in 8.8%.

*Three-dimensional conformal external beam radiotherapy + brachytherapy.* Acute G1 genitourinary toxicity was recorded in 37.5% and grade 2 in 15% of the patients. Only G1 acute gastrointestinal toxicity was recorded in 40% of the patients.

**Conclusions:** Acute G1 genitourinary toxicity was experienced by a similar percentage of patients in both treatment arms. Acute G2 genitourinary toxicity was more frequent in the three-dimensional conformal radiotherapy arm. Higher acute genitourinary toxicity, G3 or G4, was recorded only in one patient per treatment arm. Acute gastrointestinal toxicity was more frequent in the three-dimensional conformal radiotherapy arm. Higher acute gastrointestinal toxicity, G2 and G3, was only observed in the three-dimensional conformal radiotherapy arm. The acute toxicity observed was of a low grade. The combination of external beam radiotherapy with brachytherapy resulted in a lower incidence of gastrointestinal toxicity than external beam radiotherapy alone.

**Key words:** acute toxicity, conformal external beam radiotherapy, high-dose rate brachytherapy, localized carcinoma of the prostate.