

Efficacy of eradicated radiotherapy for limited nodal metastases detected with choline PET scan in prostate cancer patients

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ABSTRACT

Aims and background. In patients with recurrent prostate cancer, discriminating local or systemic recurrence is critical to decide second-line treatment. We investigated the capability of stereotactic body radiotherapy to treat limited nodal recurrences, detected using choline PET scan.

Methods and study design. Seventy-one patients with biochemical failure were studied after prostate cancer treatment: prostatectomy (28), radiotherapy (15) or both (28). Following computed tomography and choline PET imaging, stereotactic body radiotherapy was delivered on pathological lymphatic areas by 6 MV Linac, using dynamic micromultileaf collimation and intensity-modulated arc therapy optimization. Sixty days post-treatment, choline PET/CT imaging was carried out.

Results. Median follow-up was 29 months (range, 14.4-48). Choline PET detected recurrences in 39 of 71 patients. Median PSA velocity was 0.40 ng/ml/year in PET-negative patients and 2.88 ng/ml/year in PET-positive subjects ($P < 0.05$). Twenty-five patients with limited nodal recurrences, out of the 71 submitted to choline PET, received eradicated radiotherapy. Persistent regression was recorded in 13; early spread to bone was found in 2 cases; lymph node recurrences in 8, all in sites outside the irradiated areas; 2 patients were lost to follow-up. At the 3-year follow-up, overall survival, disease-free survival and local control rates were 92%, 17% and 90%, respectively. In patients with a complete regression, PSA fell from 5.65 to 1.40 ng/ml (median). PSA nadir value (median 1.06 ng/ml) was maintained for 5.6 months (median).

Conclusions. Stereotactic body radiotherapy was effective in disease eradication of limited nodal recurrences from prostate cancer, saving patients from, or at least postponing, systemic treatments. Free full text available at www.tumorionline.it

Key words: choline-PET, nodal relapses, prostate cancer, salvage stereotactic body radiotherapy.

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Received March 31, 2010;
accepted October 29, 2010.