

Multivariable analysis comparison of patients' reported quality of life following MR- and ultrasound-guided brachytherapy for localized prostate cancer

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Purpose: To prospectively compare quality of life (QoL) outcomes between patients treated with either MR- (MRBT) and ultrasound- (USBT) guided brachytherapy for localized prostate cancer.

Materials and Methods: Men treated for localized prostate cancer and who completed a baseline QoL questionnaire before treatment and again 3 months after were included. The validated QoL instrument assessed urinary incontinence and obstruction/irritation symptoms, bowel symptoms, and erectile function. Urinary and bowel questions asked about the degree and frequency of symptoms; erectile function items assessed the quality of erections, orgasm and ejaculation. Linear regression models were used to determine the effect of treatment on changes in QoL from baseline to 3 months, adjusting for known prognostic factors.

Results: Between 1997 and 2002, 387 men were treated and returned self reported baseline QoL questionnaires. Of those, 298 received USBT (mean age 67 years, range 46-85), and 89 received MRBT (mean age 63, range 49-77) in 2 institutions. The groups did not differ in baseline PSA, clinical stage, race and marital status. USBT patients were older ($p < 0.0001$) and more often received hormonal treatment prior to therapy ($p < 0.0001$), whereas more MRBT patients received additional external beam (EB) radiation therapy ($p < 0.0001$). The USBT group had significantly lower baseline scores for urinary incontinence ($p = 0.001$), urinary obstruction/irritation ($p = 0.05$) and erectile dysfunction ($p = 0.0001$), but bowel function was similar. In a multivariable model of the difference between baseline and 3 months adjusting for age, baseline PSA, Gleason grade, clinical stage, baseline QoL scores and receipt of hormones/external beam radiation, MRBT patients fared better than USBT patients in urinary incontinence ($p = 0.0002$) and obstruction/irritation ($p < 0.0001$), but were similar in bowel function ($p = 0.09$) and erectile dysfunction ($p = 0.89$).

Conclusion: At 3 months patients treated with MRBT were less likely to develop urinary incontinence and urinary obstruction/irritation symptoms than those treated with USBT. Changes in bowel symptoms and erectile dysfunction were similar for the two groups.