Prognostic value of preoperative multiparametric magnetic resonance imaging (MRI) for predicting biochemical recurrence after radical prostatectomy.


Abstract

OBJECTIVE: To evaluate the suitability of preoperative multiparametric magnetic resonance imaging (MRI) positivity as a predictor of biochemical recurrence after radical prostatectomy (RP).

PATIENTS AND METHODS: We reviewed the clinical records of patients who underwent either standard RP or laparoscopic RP between January 2005 and December 2009 at our institution. Patients who received radiotherapy or androgen deprivation therapy before surgery were excluded. A total of 314 patients met the study inclusion criteria. Cox proportional hazard regression models were used for analyses. In accordance with the criteria in the established guidelines, a radiologist scored the probability of the presence of prostate cancer using a five-point scale of diagnostic confidence level. The highest confidence level of any pulse sequence was considered as the evaluation result.

RESULTS: MRI positivity was significantly associated with a high clinical stage (cT ≥ 2; P = 0.039), a high positive biopsy core rate (≥0.2; P < 0.001), a high biopsy Gleason score ([GS] ≥8; P < 0.001) and a high pathological GS (≥8; P = 0.005). Univariate analysis and multivariate analysis showed that MRI positivity was a prognostic indicator in the analysis that included only preoperative variables and also in the analysis including preoperative and pathological variables.

CONCLUSION: Multiparametric MRI positivity can independently predict biochemical recurrence after RP.

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KEYWORDS: MRI; PSA; biochemical recurrence; clinical stage; prostate cancer; radical prostatectomy

PMID: 23937660 [PubMed - indexed for MEDLINE]