Usefulness of the nadir value of serum prostate-specific antigen measured by an ultrasensitive assay as a predictor of biochemical recurrence after radical prostatectomy for clinically localized prostate cancer.

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Abstract

INTRODUCTION: The objective of this study was to determine whether the nadir value of serum prostate-specific antigen (PSA) measured by an ultrasensitive assay could be a useful predictor of biochemical recurrence after radical prostatectomy for clinically localized prostate cancer.

MATERIALS AND METHODS: This study included 127 patients who underwent radical prostatectomy for clinically localized prostate cancer without neoadjuvant hormonal therapy and were pathologically diagnosed as negative for lymph node metastasis. The serum PSA value was measured using an ultrasensitive PSA assay system (Roche Diagnostics, Mannheim, Germany), and the findings were analyzed with respect to several clinicopathological factors. In this series, biochemical recurrence was defined as PSA persistently >0.2 ng/ml.

RESULTS: Based on the nadir PSA value, we divided 127 patients into three groups as follows: group A (n=99): ≤0.01 ng/ml; group B (n=16): 0.01-0.05 ng/ml, and group C (n=12): ≥0.05 ng/ml. The nadir PSA value was significantly associated with preoperative PSA value, but not other conventional clinicopathological prognostic parameters. During the observation period (median 31 months, range 6-75 months), biochemical recurrence occurred in 16 patients, that is, 1 in group A (6.3%), 4 in group B (25.0%), and 11 in group C (91.7%). Multivariate analysis using the Cox proportional hazards regression model indicated that the nadir PSA value was an independent predictor for biochemical recurrence after radical prostatectomy.

CONCLUSION: These findings suggest that the nadir serum PSA value measured by an ultrasensitive assay could be a useful predictor of biochemical recurrence after radical prostatectomy for clinically localized prostate cancer, and that careful follow-up should be considered in cases demonstrating a nadir PSA value >0.01 ng/ml because of the significantly higher probability of biochemical recurrence in such cases.

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