

## **Development of Postoperative Nomogram to Predict PSA Non-Recurrence Rate after Radical Prostatectomy**

**Introduction and Objective:** An accurate prediction for PSA recurrence after radical prostatectomy (RP) is mandatory to decide the strategy of secondary treatments. Therefore, we developed the nomogram based on postoperative factors and PSA levels in predicting of PSA non-recurrence rate after RP.

**Materials and Methods:** We studied the 618 patients who underwent RP for T1-3N0M0 prostate cancer at Tokyo Medical University hospital during 11 years from 2000 to 2010. Prognostic significance of all pathological factors in RP specimens and serum PSA were examined by a Cox hazard regression analysis and the nomogram was constructed after evaluated with Concordance index. The predicted and actual outcomes were compared with a calibration plot.

**Results:** With a mean follow-up of 44 months, a total of 169 (27%) patients had a PSA recurrence. In univariate analysis, pathological features such as EPE, positive surgical margin, SVI, Gleason score, lymphovascular invasion, microvascular invasion, perineural invasion and serum PSA were significant predictor of PSA recurrence but lymph node metastasis was not significant ( $p=0.1$ ). A Cox hazard regression multivariate analysis, EPE, Gleason score and positive surgical margin were significant predictor. Based on these outcomes, we constructed the nomogram using all pathological features and PSA level. The concordance index was 0.73 and the calibration plots appeared to be reasonable.

**Conclusion:** Our postoperative nomogram can provide valuable information for patients to counsel for adjuvant/salvage radiation or hormonal therapy after RP.