The probability of Gleason score upgrading between biopsy and radical prostatectomy can be accurately predicted.


Abstract

The objective of this study was to test the external validity of a previously developed nomogram for the prediction of Gleason score upgrading (GSU) between biopsy and radical prostatectomy (RP). The study population consisted of 973 assessable patients treated with RP at a tertiary care institution. The accuracy of the nomogram was quantified with the receiver operating characteristics curve-derived area under the curve. The performance characteristics (predicted vs observed rate of GSU) were tested within a calibration plot. Overall, GSU was recorded in 39.8% (n = 387) of patients at RP. Of patients with GSU, 70 (18.1%), 23 (5.9%) and 32 (8.3%), respectively, had extracapsular extension, seminal vesicle invasion and lymph node invasion. The accuracy of the nomogram was 74.9% (confidence interval 72.1-77.6%). The model tended to underestimate the observed rate of GSU and the discordance between the predicted and observed rate of GSU ranged from -7 to +10%. The current tool represents the most accurate method of predicting GSU between biopsy and RP. Nonetheless it is not perfect and its performance characteristics should be known prior to its use in clinical decision-making.

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