Objectifs

- Previous studies of the cell cycle progression (CCP) score in surgical specimens of prostate cancer in patients treated by radical prostatectomy (RP) demonstrated significant association with time to biochemical recurrence (BCR).

- In this study, we compared the ability of the CCP score and the expression of PTEN or Ki-67 to predict BCR in a cohort of patients treated by RP.

- Finally, we constructed the best predictive model for RP incorporating the biomarkers and relevant clinical variables.

Methods

The study population consisted of a retrospective cohort of prostate cancer patients who had RP surgery in French urological centers from 2000 to 2007.

The following clinical information was collected: age at surgery, pre-surgical measurement of PSA, pathological stage, whether the patient was treated with neoadjuvant therapy, date of RP surgery, date of BCR (if applicable), date of last follow-up, and the pathological measures required to calculate the CAPRA-S score.

The CCP score is obtained by performing the Prolarisk test.

Results

- Among the 652 patients with CCP scores and complete clinical data, BCR events occurred in 41%, and time from surgery to last follow up among patients free of BCR was 72 months.

- In univariate Cox analysis, the continuous CCP score and positive Ki-67 predicted recurrence with an HR of 1.44 (95% CI: 1.17-1.75; p=5.3 x 10^-4) and 1.89 (95% CI: 1.38-2.57; p=1.6 x 10^-4), respectively.

- In contrast, PTEN expression wasn’t associated with the risk of BCR. Of the 3 biomarkers, only the CCP score remained significantly associated in a multivariable Cox model (p = 0.026).

- The best model incorporated CAPRA-S and CCP scores as predictors, with HR of 1.32 and 1.24, respectively.

Conclusions

Our results show that the Prolarisk test was a stronger predictor of BCR after RP compared to IHC markers, and that this test could be used in conjunction with the CAPRA-S score to better determine which RP patients are at highest risk of recurrence and need adjuvant treatment.