WHEN CAN ACTIVE SURVEILLANCE BE LESS ACTIVE?: PREDICTION OF LONG-TERM NON-RECLASSIFICATION FOR MEN WITH LOW-RISK PROSTATE CANCER

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Background: Active surveillance is increasingly consistently endorsed as the preferred management strategy for most men with low-risk prostate cancer. However, nearly all active surveillance protocols entail frequent PSA testing and follow up prostate biopsies every 1 to 2 years. For many men with biologically indolent tumors, this regimen is overly intense, and exposes men to the discomfort, risks, and costs of repeated biopsies. We aimed to determine if some men can be safely selected for a less intense surveillance regimen by predicting the probability of non-reclassification over the next 4 years of surveillance.

Methods: Data were collected from men enrolled in the multicenter Canary Prostate Active Surveillance Study (PASS), under which PSAs are collected q3 months and biopsies performed within 12 months of diagnosis and then every 2 years. For inclusion in this study, men had to have undergone at least one follow up biopsy, and those with Gleason grade group >1 at diagnostic biopsy were excluded. Reclassification was defined as increase in Gleason grade group on subsequent biopsy; those without reclassification were censored at last study contact, treatment or 2 years after last biopsy. A dynamic risk prediction model based on a Cox regression with robust variance estimates was used to construct and test a model predicting non-reclassification.

Results: Of 1082 men included, 362 (33%) reclassified and the remaining were censored. The final regression model included percent of biopsy cores involved, prior biopsy history, time since diagnosis, BMI, prostate size, diagnostic PSA, and PSAk (a previously described measure of PSA kinetics). This dynamic risk prediction model was assessed at a measurement time of 1 year after diagnosis, predicting out risk of reclassification at 4 years. Men at lowest and highest deciles of this model-based risk faced 6% (95%CI 0-12%) and 73% (55-84%) risks of reclassification within 5 years. For at least 10% of the men in the cohort, the negative predictive value (NPV) for reclassification was 95% or higher.

Conclusions: A substantial proportion of men with low-risk prostate cancer can safely be followed with a de-intensified active surveillance protocol, which would improve both the tolerability and cost-effectiveness of this management strategy.