PROSTATE CANCER

Urinary PCA3 and TMPRSS2:ERG reduce the need for repeat biopsy

A finding of no detectable prostate cancer at biopsy, despite serum PSA levels suggestive of prostate cancer, raises an important question: when to rebiopsy? Now, findings of a decision analysis study reveal that incorporation of measures of urinary prostate cancer antigen 3 (PCA3) or transmembrane protease serine 2: Vets erythroblastosis virus E26 oncogene homolog 1 (Avian) (T2:ERG) fusion with serum PSA significantly reduces the number of repeat biopsy procedures, with no change in survival outcomes after a follow-up duration of 10 years.

Describing the approach, lead author Selin Merdan explains: “We developed a decision tree to perform head-to-head comparison of urinary PCA3 and T2:ERG at repeat biopsy and conducted sensitivity analyses around model parameters to assess the robustness of the estimates.”

Using this approach, Merdan and colleagues found that more than half of all

repeat biopsies would have been avoided by addition of either urinary PCA3 or T2:ERG to serum PSA measurements. Thus, such an approach avoids exposing a large number of men to an invasive procedure, with no notable negative consequences in terms of 10-year overall, or 15-year cancer-specific survival.

Merdan concludes: “We demonstrated that the use of PCA3 and T2:ERG can reduce the number of unnecessary repeat biopsies.” Senior author Brian Denton adds: “We are now investigating the use of simulation models to study the use of these biomarkers in a screening setting to decide whether and when men should receive a first biopsy.”

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Original article Merdan, S. *et al.* Assessment of long-term outcomes associated with urinary prostate cancer antigen 3 and TMPRSS2:ERG gene fusion at repeat biopsy. *Cancer* doi:10.1002/cncr.29611