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# Impact of a genomic classifier of metastatic risk on postoperative treatment recommendations for prostate cancer patients: a report from the DECIDE study group.

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## Abstract

**BACKGROUND:** Only a minority of prostate cancer patients with adverse pathology and biochemical recurrence (BCR) post radical prostatectomy (RP) experience metastasis and die from prostate cancer. Improved risk prediction models using genomic information may enable clinicians to better weigh the risk of metastasis and the morbidity and costs of treatment in a clinically heterogeneous population.

**PURPOSE:** We present a clinical utility study that evaluates the influence on urologist treatment recommendations for patients at risk of metastasis using a genomic-based prediction model (DecipherTM).

**METHODS:** A prospective, pre-post design was used to assess urologist treatment recommendations following RP in both the adjuvant (without any evidence of PSA rise) and salvage (BCR) settings. Urologists were presented de-identified pathology reports and genomic classifier (GC) test results for 24 patients from a previously conducted GC validation study in high-risk post-RP men. Participants were fellowship trained, high-volume urologic oncologists (n=21) from 18 US institutions. Treatment recommendations for secondary therapy were made based solely on clinical information (pre-GC) and then with genomic biomarker information (post-GC). This study was approved by an independent IRB.

**RESULTS:** Treatment recommendations changed from pre-GC to post-GC in 43% of adjuvant, and in 53% of salvage setting case evaluations. In the adjuvant setting, urologists changed their treatment recommendations from treatment (i.e. radiation and/or hormones) to close observation post-GC in 27% of cases. For cases with low GC risk (more than 3% risk of metastasis), observation was recommended for 79% of the case evaluations post-GC. Consistent trends were observed in the salvage setting.

**CONCLUSION:** These results indicate that urologists across a range of practice settings are likely to change treatment decisions when presented with genomic biomarker information following RP. Implementation of genomic risk stratification into routine clinical practice may better direct treatment decision-making post-RP.

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