

American Urological Association: Genomic urine test accurately predicts bladder cancer

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A new genomic urine test can predict bladder cancer as many as 12 years

before clinical signs and symptoms emerge, according to a study presented at the annual meeting of the American Urological Association, held from April 28 to May 1 in Chicago.

Yair Lotan, M.D., from the UT Southwestern Medical Center in Dallas, and colleagues examined the effectiveness of screening for preclinical urinary carcinoma (UC) with a modified UroAmp (Convergent Genomics) genomic profiling test using 10 genes. The analysis included a model evaluation case-control design with 96 controls and 70 UC cases, as well as a nested case-control design within the Golestan Cohort Study (50,045 participants followed for up to 12 years).

The researchers found that the UC screening model was trained to a sensitivity of 88 percent (97 percent sensitivity for high-grade disease) and a specificity of 94 percent. In the first validation, the test achieved a sensitivity of 86 percent in de novo patients (87 percent for high-grade), a sensitivity of 71 percent overall (de novo + recurrent tumors), and a specificity of 94 percent.

In the Golestan cohort, the baseline modified UroAmp had a prediction [sensitivity](#) of 66 percent (71 percent for high-grade) and a specificity of 94 percent.

In contrast, baseline telomerase reverse transcriptase (*TERT*) mutations predicted 48 percent of cancers with a specificity of 100 percent. In modified uroAmp-predicted positives versus modified urinary comprehensive genomic profiling-predicted negatives, [cancer](#)-free survival was significantly worse (hazard ratio, 8.5). When limiting the analysis to UC diagnosis within five years, UroAmp detected preclinical UC in 90 percent of future cancers compared with 57 percent using *TERT* mutations alone.

"This is the first study to show comprehensive genomic profiling of

somatic mutations can detect preclinical urothelial cancer more than a decade ahead of a natural diagnosis," Lotan said in a statement. "With further studies, this discovery could improve how we identify, risk stratify and monitor patients at increased risk of developing [bladder cancer](#)."

More information: Yair Lotan et al, MP22-19 URINARY COMPREHENSIVE GENOMIC PROFILING PREDICTS UROTHELIAL CANCER UP TO 12 YEARS AHEAD OF CLINICAL DIAGNOSIS. AN EXPANDED ANALYSIS OF THE GOLESTAN COHORT STUDY, *Journal of Urology* (2023). [DOI: 10.1097/JU.0000000000003247.19](#)

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