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GENETICS

PREDICTOR FOR PROSTATE CANCER

The natural history of prostate cancer is highly variable and the disease course is difficult to predict. Some men have indolent disease that does not require intervention, while others require treatment for aggressive tumors. Predicting disease behavior is critical to avoid overtreatment in those with indolent disease and undertreatment of men with high-risk cancer.

Current clinical variables, such as Gleason score and prostate-specific antigen (PSA) levels have been used in models to predict disease but these variables have limited accuracy. Now, Jack Cuzick and coauthors have developed a cell-cycle progression (CCP) score that serves as a strong prognostic marker. "The CCP score is the best single predictor of death from prostate cancer and adds to Gleason grade and PSA level," explains Cuzick.

The researchers selected a set of CCP genes and tested their prognostic value retrospectively in two cohorts. In one cohort, men with prostate cancer were treated with radical prostatectomy and in the second cohort conservative treatment with transurethral resection of the prostate (TURP) was used. The primary end points were time to death from prostate cancer and biochemical recurrence for the TURP and radical surgery cohorts, respectively. In patients treated with radical surgery, a high CCP score was predictive of biochemical recurrence and death after disease progression. In the TURP cohort, the CCP score was more prognostic than any other clinical variable. In both cohorts, the CCP score was predictive of outcome providing considerably more prognostic information than clinical variables alone. Cuzick notes, "we are now studying the value of this test in needle biopsies. It will have a major impact on how this disease is managed, particularly for screen-detected early disease."

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Original article Cuzick, J. *et al*. Prognostic value of an RNA expression signature derived from cell cycle proliferation genes in patients with prostate cancer: a retrospective study. *Lancet Oncol*. doi:10.1016/S1470-2045(11)70295-3