

Simple test could identify bladder cancer patients who won't respond to immunotherapy

August 21 2018



Professor Florian Kern, Chair of Immunology at BSMS. Credit: Brighton and Sussex Medical School.

Patients who are unlikely to benefit from a commonly used immunotherapy for bladder cancer could be identified by a simple blood

test, according to researchers at Brighton and Sussex Medical School (BSMS).

This could potentially save months of unnecessary and ineffective [treatment](#).

Currently, 30-40% of individuals have no benefit from the standard immunotherapy treatment, and they are only identified once [therapy](#) has failed, which often takes six months or longer to find out.

The pilot study, conducted under the supervision of Professor Florian Kern, Chair of Immunology at BSMS, shows that a test measuring the release of the pro-inflammatory molecule, Interleukin-2, from immune cells performed before therapy appears to immediately identify about 50% of the patients who will not benefit from the treatment.

Overall, the test correctly predicted therapy outcome in almost 80% of cases.

Bladder [cancer](#) is among the top most common cancers worldwide and predominantly affects older men, with hundreds of thousands of cases every year.

The majority present with early [bladder cancer](#) that has not yet infiltrated the muscular layer of the [bladder](#), and this is treated by removing the tumour.

Subsequent instillation of live bacteria, Bacille Calmette-Guérin(BCG), which is also used in the tuberculosis (TB) vaccine, given in several cycles over one year, reduces the otherwise high recurrence and progression rates.

This report suggests that the immune response to Tuberculin, widely

used in TB testing, may help identify those who will benefit or not from BCG immunotherapy.

The lead author, Dr. Samer Jallad, Urologist previously at Brighton and Sussex University Hospitals Trust, now working at Imperial College Healthcare NHS Trust, London said: "Our results suggest that a test predicting the outcome of BCG immunotherapy may be within reach. This would be extremely useful for making the best choices for our patients and using alternative treatments for those who are unlikely to benefit. If confirmed in a larger study, this test could save tens of thousands of [patients](#) valuable time and the negative experience of undergoing eventually unsuccessful therapy."

Professor Kern added: "The simplicity of our new test makes it very attractive as a clinical test. There are several tests for tuberculosis that are ultimately based on the same [test](#) principle and have been rolled out across the world in recent times."

More information: Samer Jallad et al. Baseline cytokine profiles of tuberculin-specific CD4+ T-cells in non-muscle invasive bladder cancer may predict outcomes of BCG immunotherapy, *Cancer Immunology Research* (2018). [DOI: 10.1158/2326-6066.CIR-18-0046](https://doi.org/10.1158/2326-6066.CIR-18-0046)

Provided by University of Sussex

Citation: Simple test could identify bladder cancer patients who won't respond to immunotherapy (2018, August 21) retrieved 3 May 2024 from <https://medicalxpress.com/news/2018-08-simple-bladder-cancer-patients-wont.html>

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