

Research looks to slow prostate cancer's 'joyride'

July 25 2017, by Paul Mayne



Dr. Alison Allan, an Anatomy and Cell Biology professor at the Schulich School of Medicine & Dentistry, is asking if circulating tumour cells (CTCs) can predict which prostate cancer treatments will be most effective for patients. Credit: Paul Mayne//Western News

When it comes to arresting cancer's joyride through the body, one



Western researcher's work looks to be the 'traffic cop' on the bloodstream highway.

Anatomy and Cell Biology professor Dr. Alison Allan is examining circulating <u>tumour cells</u> (CTCs) – <u>cancer cells</u> that detach from a primary tumour, travel through the bloodstream and invade other parts of the body – as a possible guide for individualized <u>prostate cancer</u> treatment success.

"With prostate <u>cancer</u>, 90 per cent of the deaths occur because of metastasis to the vital organs, which can disrupt the making of <u>immune</u> <u>cells</u>," Allan said. "In order to get to these distant sites from the prostate, these <u>cells</u> have to get into the bloodstream, using it like the highway, like their own 401. Think of this <u>blood test</u> as the traffic cop, trying to determine who are the 'good cells' and 'bad cells' – and keeping the bad ones of the road."

Allan, a Lawson Health Research Institute scientist at the London Regional Cancer Program, is a national leader in the study of CTCs. Her lab has developed a unique blood tests to track metastasis – the spread of cancer from the original tumour to other sites in the body – by measuring the number of CTCs in a patient's bloodstream. As a result, London Health Sciences Centre now offers these blood tests for prostate, breast and colorectal cancers.

"We know cancer constantly changes – usually in response to treatment – and will become resistant. It will change its molecular characteristics," Allan said. "We're looking at not only finding those cells and counting them, but actually isolating them down to the single cell level. We want to determine the genomic characteristics of them to figure out what particular gene and protein they're expressing, and whether we can use that information to determine the best type of treatment."



A recent donation from the Telus Ride for Dad (London and Grey Bruce) fundraiser will allow Allan to partner with a group in New York City, who are doing similar work, to leverage a larger group of patients for the research.

"With this funding, we will use an emerging technology to determine whether CTC analysis can be used to indicate which patients will respond to chemotherapy versus other targeted therapies," she said. "This could lead to more effective and personalized management of prostate cancer with improved patient outcomes. These drugs are toxic, are expensive, so we want to know we're giving the right drug to the right patient for the best result possible."

Provided by University of Western Ontario

Citation: Research looks to slow prostate cancer's 'joyride' (2017, July 25) retrieved 25 April 2024 from <u>https://medicalxpress.com/news/2017-07-prostate-cancer-joyride.html</u>

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