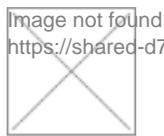


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# Liquid assets: biopsies from the bloodstream

Dr Nicholas Turner, Consultant Medical Oncologist at the ICR and The Royal Marsden, discusses how assessing biomarkers circulating in the bloodstream could improve the way we treat cancer.



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Liquid biopsies have the potential to transform cancer treatment by providing a cheaper, less invasive way of evaluating the genetics of a tumour than a biopsy or expensive scan.

Our researchers have been looking at circulating tumour cells ? cancer cells shed into the bloodstream ? to see how well a tumour is responding to treatment. They then use these cells, instead of a biopsy, to analyse what?s causing it to grow.

The ICR and The Royal Marsden are now taking this further by looking at circulating tumour DNA. This is free DNA in the blood that has been released from cancer cells and can be detected in a blood test. We believe this could transform how we treat cancer patients.

For example, we can get a genetic profile of the cancer, non-invasively, and discover which mutations are driving it. We can then use this information to identify the right course of treatment for that patient at that time. As tumours can change as they go through treatment, and taking multiple, repeated biopsies can be difficult; a simple blood test may be a much better way of directing treatment.

"This could transform how we treat cancer patients"

*Dr Nicholas Turner*

"It's still early days, but circulating biomarkers have an exciting future in cancer treatment"

The Royal Marsden and the ICR already have clinicians and researchers working with circulating biomarkers in prostate, breast, lung and gastrointestinal cancers, and more recently head and neck cancers and paediatrics. Some of our studies have already yielded exciting results. One major study in prostate cancer found that by monitoring tumour DNA, it was possible to predict which patients would respond to the drug abiraterone, which could allow doctors to switch unresponsive patients to an alternative drug.

Another exciting development at our BRC is the use of circulating tumour DNA to assess patients who have had surgery to predict those who could relapse years later. Early research suggests that highly sensitive tests could help pick out those patients who aren't cured by their surgery and will need further treatment to increase their chances of a cure.

At the moment, circulating biomarkers remain a research tool, and we need further studies to validate their use in patients before they can become part of routine care. But research here at the BRC is driving the development of these tests and their use in clinic shouldn't be far away. It's still early days, but circulating biomarkers have an exciting future in cancer treatment.

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