LIQUID BIOPSIES "SUBSTANTIALLY IMPROVE" BREAST CANCER DIAGNOSIS

Liquid biopsies have the potential to "substantially help to improve diagnosis" of breast cancer in women, a new study has found.

Researchers writing in EBioMedicine (published by world-leading publisher The Lancet) found that "the clinical validity of liquid biopsy in the early breast cancer setting is more than evident."

Liquid biopsy techniques involve analysing a sample of blood (biofluids) for tumour components such as circulating-tumour DNA (ctDNA), circulating-tumour cells (CTCs) and circulating-tumour RNA (ctRNA). Scientists can examine these samples, looking for the presence and concentration of cancer cells. The results can provide a confirmed diagnosis of cancer, identify potential tumour location and assess its current stage of development.

Diagnosing breast cancer as early as possible is the key to the best outcomes, but there are limitations to current techniques used by healthcare systems across the world.

Breast cancer is typically diagnosed through a tissue biopsy, where a sample of a potential tumour is analysed in a laboratory. Biopsies provide clinicians with important information about the tumour itself, as well as providing standard biomarkers for subtyping and treatment planning.

However, the biopsies have their limitations, the study authors caution. Primary tissue samples may be difficult to access and waiting times for laboratory results can be "tedious". Aside from the clinical concerns, taking a biopsy can be painful and uncomfortable for the patient. In some cases, surgical procedures themselves come with significant risks, particularly when patients are anaesthetised.

After analysing the available research, and comparing the two techniques, the authors conclude that "It is indisputable that liquid biopsies show great promise based on the data presented by several observational studies."

The minimally invasive process is much quicker to obtain a sample, and results can be processed much more quickly than traditional biopsies. This means patients can get a confirmed diagnosis as soon as possible. In cancer, the quicker the treatment, the better the outcome.

The potential for liquid biopsy doesn't end with a confirmed diagnosis. The same techniques can be used to monitor the effectiveness of treatment, therapeutic response and assess the risk of relapse. Liquid biopsies are "rapidly transforming the cancer patient's clinical management," authors conclude.

The authors caution that liquid biopsy may not be as effective at diagnosing breast cancer in its early stages, because the circulating tumour materials may only be present in low amounts in samples. Acknowledging the experimental nature of the treatment, researchers conclude by calling for more research into the standardisation of sample extraction procedures, circulating-tumour material isolation and methodologies used.

RGCC's Dr Ioannis Papasotiriou is a recognised authority in liquid biopsies. The author of several studies into pioneering cancer treatment approaches, he welcomes this new addition to the growing literature into liquid biopsies.

RGCC offers a range of cutting-edge liquid biopsy tests to diagnose cancer and to improve the development of personalised treatments even at earlier stages. The Oncotrace RGCC test provides essential information on CTCs, including their concentration and immunophenotype, which can provide clinicians with a crucial insight into potential cancer.

The full range of RGCC tests is available to view here. If you are interested in advanced cancer tests, please view the RGCC Patient Leaflet where you will find essential information on how you can access them.

You can read the full paper, Challenges and achievements of liquid biopsy technologies employed in early breast cancer, for free here.