SCIENTISTS IDENTIFY NEW BIOMARKER FOR CANCER DIAGNOSIS

Scientists have identified tiny packages of materials released by tumours, called EVPs (extracellular vesicles and particles) that could be a potential biomarker for detecting several types of cancer at an early stage.

In a recent study, published in the prestigious *Cell* journal, a US-based team have identified an exciting new biomarker that could lead to the development of a new range of liquid biopsy tests that can improve cancer diagnosis.

Liquid biopsy tests, such as those offered by RGCC, find and diagnose cancer in the body by detecting biomarkers based on Circulating Tumour Cells or biomarkers that the tumour sheds into the bloodstream (eg ctDNA). Scientists are always looking to identify new biomarkers that can improve cancer diagnosis, and researchers at the prestigious Memorial Sloan Kettering and Weill Cornell Medicine have identified EVPs as a potential candidate.

During his research, co-author David Lyden, a physician-scientist at Weill Cornell, found that tumours within the body may release EVPs into the bloodstream as part of the spread of cancer. In the study, Lyden and his-co-authors attempted to assess how effective using EVPs as a biomarker could be in screening for cancer.

The study used blood and tissue samples from patients with 18 different forms of cancer, including breast, colon, and lung cancer. There was a comparison group with samples from healthy patients.

The samples were analysed by a powerful computer to match specific EVP protein signatures with certain forms of cancer. Results from the small-scale trial found that the computer could diagnose different types of cancer with a 95% accuracy and with a specificity of 90% (which means that 10% of the cancers it identified were false positives).

“One of the holy grails in cancer medicine is to diagnose an early cancer in a patient based on a blood test,” says Memorial Sloan Kettering surgeon William Jarnagin, Chief of the Hepatopancreatobiliary Service and co-senior author of the study. “This research is a proof-of-principle study; much more work is needed before it can be used as a screening tool.”

By focusing on proteins in EVPs rather than cancer genes, researchers believe that they may also be able to characterise the different cells located around the tumour in the area known as the tumours macro-environment.

RGCC’s Dr Ioannis Papasotiriou welcomed the new research. “The identification and validation of tools that enable clinicians to detect cancer at earlier stages using liquid biopsy are always welcomed.”

Dr Papasotiriou has co-authored numerous scientific papers on the use of liquid biopsies in selecting appropriate therapies and its potential for diagnosing breast cancer in patients.

If you would like to learn about liquid biopsies, RGCC has created a video to explain what liquid biopsies are and how they can be used to diagnose cancer. If you would like to read more about the specific liquid biopsy tests offered by RGCC they are; Oncotrail RGCC, Oncotrace RGCC and Oncocount RGCC.

You can read the full study, *Extracellular Vesicle and Particle Biomarkers Define Multiple Human Cancers,* for free.