

SIMPLE BLOOD TESTS CAN BE USED TO LOOK FOR RESISTANCE TO CHEMOTHERAPY

RGCC

When it comes to treating cancer, there's good news and bad news. Part of the good news is that there are many effective medicines, known as chemotherapies, that can treat cancer and improve survival.

The not so good news is that some cancers that initially respond to chemotherapy can become resistant to treatment. This means these cancers stop responding to therapy and suddenly begin to grow again – in other words, the cancer cells begin to resist the effects of the chemotherapy. When this happens, oncologists may say a treatment has failed and the drugs will need to be changed.

In the case of solid tumours – cancers in solid organs such as the breast or prostate – it is difficult to determine and identify markers which could be used to monitor the resistance to chemotherapy as it develops. This means there's a real risk that when people with solid cancers are on chemotherapy their treatment may fail or have a poor outcome.

There's lots of research to understand why this happens. In one recent study, researchers looked for cells called circulating tumour associated cells (c-tacs). These cells are resistant to the normal processes by which cells are destroyed and so are a signal of a tumour that is resistant to chemotherapy.

They took blood samples from 3,662 people with different solid organ tumours, some of whom had had treatment and others who hadn't. Among the 1,325 people who had not had treatment, more than half of blood samples (56.3%) showed resistance to chemotherapy. Among the 2,201 samples from people who had had treatment, more than three quarters (77.8%) showed resistance to chemotherapy.

The increased resistance in C-TACs from people who had previously had chemotherapy indicates that these cells had become resistant during the prior treatment.

The researchers suggest this method, which they call chemoresistance profiling, could be a non-invasive way to find out if chemotherapy is working and adjust treatment before it becomes too late.

“Non-invasive chemoresistance profiling of C-TACs is a viable strategy to monitor treatment efficacy in real time,” the researchers conclude. In future, adopting this strategy in the clinic could guide treatment choices and reduce the risk a treatment fails, they say, and allow oncologists to make timely decisions about and adjustments to therapy if they detect resistance to chemotherapy.