PERSONALISED CANCER TREATMENT IMPROVES PATIENT OUTCOMES

Patients with advanced cancer were more likely to survive for longer or experience longer periods without disease progression if they received personalised cancer therapy, researchers at the University of California San Diego School of Medicine have found. In a recent trial, three-year survival for cancer patients receiving personalised cancer treatments was 55%, compared to 25% of patients who received unmatched therapies.

In the new study published in *Nature Communications*, researchers set out to explore how effective personalised cancer treatments are for patients with various forms of cancer. A multidisciplinary tumour board (MTB) was formed, comprising clinical investigators, bioinformaticians, geneticists, and physicians from multiple specialities who provided expert advice on personalised treatments. Clinical-grade biomarkers were provided for each patient and were used by the MTB to design personalised treatments.

A total of 429 patients were evaluated by the tumour board, with 62% matched to at least one drug, and 20% were matched to all recommended drugs. Clinicians were free to exercise discretion, and ignored the MTB's recommendations in 38% of cases, opting instead for a standard therapeutic approach. In the majority of cases, personalised treatment was much more effective at extending survival.

"Patients who receive MTB-based therapy are better matched to their genomic alterations, and the degree of matching is an independent predictor of improved oncologic outcomes including survival," said Razelle Kurzrock, MD, director of the Center for Personalized Cancer Therapy at Moores Cancer Center and senior author of the study.

At a monthly meeting, the MTB received de-identified patient information, including the date of diagnosis, last treatment, biopsy site and date, the molecular test used, molecular profile results, and comments, and a copy of the critical parts of the molecular diagnostic report.

The MTB calculated the matching score by counting the total number of pathogenic alterations targeted by drugs and dividing them by the total number of pathogenic alterations. The higher the score, the better the match.

The results showed that patients who received the MTB-recommended drug regimens experienced significantly longer progression-free periods and better overall survival rates than those who received standard treatments advised by clinicians.

The use of next-generation sequencing is at the heart of developing new, highly personalised treatments for cancer, but there are challenges, cautions Shumei Kato, MD, associate professor of medicine at UC San Diego School of Medicine. "One of the hurdles is that every cancer patient appears to be carrying different molecular and genomic patterns despite having the same cancer type," he said.

RGCC are pioneers in providing personalised and targeted cancer treatments, based on a study of Circulating Tumor Cells (CTCs). Tests such as RGCC CAMBISEQ use the Next Generation Sequencing (NGS) technology to identify mutations in cancer cells, while Onconomics RGCC provides useful information about the efficacy of drugs and targeted therapies, and are used by clinicians to develop personalised cancer therapies and treatments that target tumours.

The author of several studies into pioneering cancer treatment approaches, RGCC's Dr Ioannis Papasotiriou, believes that personalised treatment is the future for cancer care.

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

You can read the full study, *Real-world data from a molecular tumor board demonstrates improved outcomes with a precision N-of-One strategy*, here.