Digital biomarker to guide cancer therapy and predict response duration

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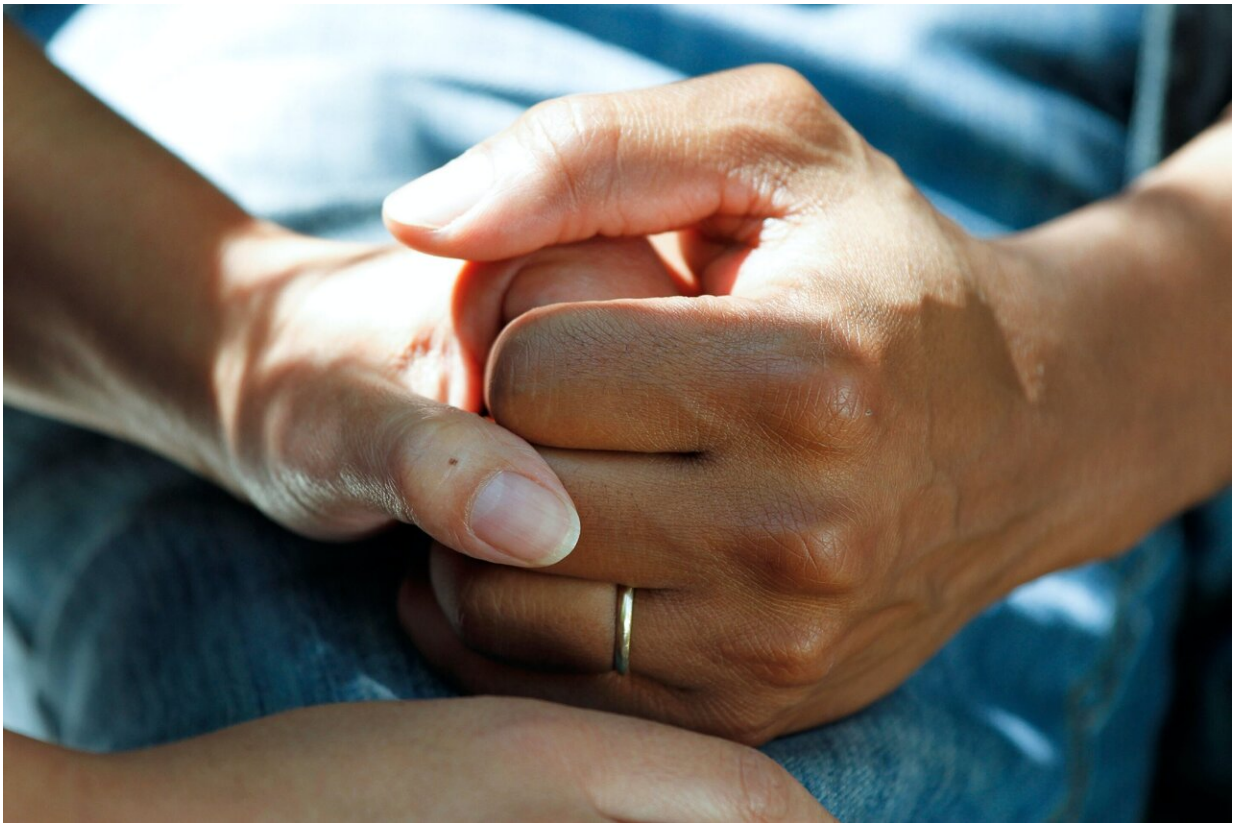

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Precision oncology has led to approved, molecularly specific, biomarker-defined indications for targeted therapies. With the number of validated drug targets increasing, testing each patient's tumor for all markers

related to all possible targeted therapies is infeasible due to limited amount of tissue usually obtained via biopsies. In addition, the current companion diagnostic approach used for most targeted therapies provides limited treatment options, with a binary "yes/no" expected response to a drug and no recommendation for which treatment, among a range of possible options, is likely to be the best option for a particular patient.

The Worldwide Innovative Network for personalized cancer medicine has now reports development of the Digital Display Precision Predictor, a prototype of a global biomarker model to guide treatments with targeted therapy and predict progression-free survival for cancer patients . The paper is published in *NPJ Precision Oncology*.

The Digital Display Precision Predictor (DDPP) is a biomarker strategy and tool able to predict the duration of progression-free survival (PFS) for multiple targeted treatments for patients with advanced/metastatic cancers, based on the comprehensive investigation of the whole transcriptome (the gene expression profile of the tumor compared to that of normal tissue).

DDPP is based on: (1) the exploration of the whole transcriptome (20,000 genes) providing insight about the status of activation of almost all drug targets in the context of the network of genes or pathways that drive tumor progression; (2) the data can be obtained from a single assessment requiring very small amounts of tumor and analogous normal tissues; and (3) the prediction of the duration of the time until tumor progression (PFS) under a specific therapeutic regimen.

"One of the main challenges of finding new biomarkers is that they are built in a relatively small number of patients treated with the same drug (from the WINTHER trial), for whom both molecular profiles (from tumor and analogous normal tissues) and PFS data were available," said

Dr. Josep Tabernero, vice-chairman and chairman of the Scientific Advisory Board of WIN.

"The DDPP is potentially a new global biomarker tool that can apply to any type of cancer drug used alone or in combination, agnostic of tumor type, and can lead, pending further prospective validation, to a new approach to optimal treatment selection for patients with cancer," concluded Dr. Richard L. Schilsky, chairman of WIN.

More information: Vladimir Lazar et al, Digital Display Precision Predictor: the prototype of a global biomarker model to guide treatments with targeted therapy and predict progression-free survival, *npj Precision Oncology* (2021). DOI: 10.1038/s41698-021-00171-6

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