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Personalized Cancer Therapy Improves Outcomes in Advanced Disease, Says Study

Patients receiving care for advanced cancer at Moores Cancer Center at UC San Diego Health were more likely to survive or experience a longer period without their disease progressing if they received personalized cancer therapy, report University of California San Diego School of Medicine researchers.

Led by Razelle Kurzrock, MD, director of the Center for Personalized Cancer Therapy at Moores Cancer Center and senior author of the study, a multidisciplinary molecular tumor board was established to advise treating physicians on course of care using an individual patient's molecular tumor makeup to design precision medicine strategies.

"Patients who underwent a molecular tumor board-recommended therapy were better matched to genomic alterations in their cancer and had improved outcomes," said Kurzrock. "The three-year survival for patients with the highest degree of matching and who received a personalized cancer therapy was approximately 55 percent compared to 25 percent in patients who received therapy that was unmatched or had low degrees of matching.

Razelle Kurzrock, MD, director of the Center for Personalized Cancer Therapy at Moores Cancer Center.

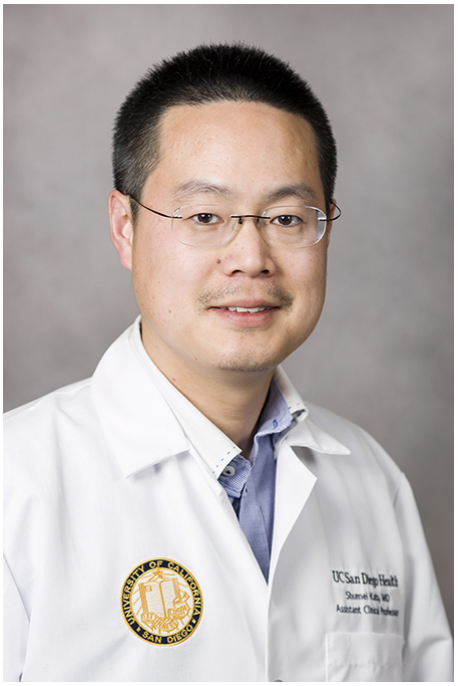
Of 429 patients evaluated by the molecular tumor board, 62 percent were matched to at least one drug, report the researchers in the October 2, 2020 online issue of *Nature Communications*. Twenty percent of patients matched to all recommended drugs, including combination therapies.

The tumor board acted in an advisory role and treating physicians chose not to use the board's recommended strategy in 38 percent of cases, opting instead for a standard

therapy approach that might have been unmatched to the patient's genetic alterations or had a low degree of matching. These patients experienced a lower progression-free survival and overall survival rates.

The use of next-generation sequencing allows for the identification of novel potential targets for patients with cancer to improve outcomes, but there are challenges to using this approach widely, said Shumei Kato, MD, associate professor of medicine at UC San Diego School of Medicine and first author.

"One of the hurdles is that every cancer patient appears to be carrying different molecular and genomic patterns despite having the same cancer type," said Kato, a Moores Cancer Center medical oncologist specializing in rare and gastrointestinal cancers. "This can be challenging since we are customizing therapy based on the unique genomic pattern patients have, and thus it is difficult to predict the response. In addition, this approach requires multidisciplinary expertise as well as access to drugs or clinical trials not always available in smaller practices.



Shumei Kato, MD, associate professor of medicine at UC San Diego School of Medicine.

At Moores Cancer Center, the molecular tumor board is composed of experts in basic, transitional and clinical research as well as bioinformatics, genetics, radiology, pathology and physicians in multiple specialties such as medical, surgical and radiation oncology.

Further clinical investigations with a larger sample size are necessary to identify the matching score thresholds that determine the usefulness of a precision medicine approach, said the researchers.

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