

DNA analysis helps tailor cancer treatments

Study finds molecular profiling can improve survival rates

By Russ Wiles

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Analyzing a patient's genetic makeup can result in more effective cancer treatments and improve survival rates, according to a new study that was driven by Valley researchers, funded by a Valley businessman and primarily involved patients at Scottsdale Healthcare.

The research shows promise in tailoring chemotherapy and other treatments to a patient's individual genetic profile. In addition to longer periods when the cancer didn't progress, the treatments prescribed in the study also helped to shrink tumors in some cases.

"It's a major demonstration of this ap-

proach," said Dr. Mark Slater, vice president of research at Scottsdale Healthcare, referring to the molecular profiling that was a focus of the research. "It's absolutely a unique study."

The research shows the value of personal medicine based on DNA analysis, said Dr. Daniel Von Hoff, physician in chief at the Translational Genomics Research Institute in Phoenix who was the principal investigator.

Von Hoff released study results Sunday in Denver at the annual meeting of the American Association for Cancer Research.

In the study, conducted from late 2007 through early 2009, researchers at nine medical facilities across the nation,

primarily Scottsdale Healthcare's Shea Medical Center, tracked the progress of 66 patients. Some 41 of the patients were treated at Scottsdale Healthcare where six physicians and two nurse practitioner assisted in the research, Slater said.

All the patients, nearly two-thirds of whom were women, had persistent cancer that required anywhere from two to six previous treatments.

Researchers compared each patient's prior treatments to those tailored by molecular profiling, which involves examining a person's DNA after taking a biopsy of the tumor, Von Hoff said. After identifying more precise targets for treatment, researchers adjusted the drugs, dosages, delivery means and

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other treatment aspects.

Their focus contrasts with the traditional approach, where similar treatments initially are given to all patients "and you wait to see who responds," said Slater, who leads the Scottsdale Clinical Research Institute, where TGen conducts research at Scottsdale Healthcare.

Molecular profiling not only helps pinpoint treatments likely to succeed but also can spot those not likely to prove effective, thereby reducing delays and cutting down on side effects, Slater said.

Of patients in the study with breast cancer, 44 percent experienced a longer survival period without progression of their cancer. So did 36 percent of those with colorectal cancer, 20 percent of those with ovarian cancer and 16 percent with other types of cancer.

The progression-free survival periods ranged from six weeks to 16 months and longer, said Von Hoff, who designed the study and is the chief scientific officer of TGen Clinical Re-

search Services at Scottsdale Healthcare.

The study suggests molecular profiling could be effective when traditional treatments aren't working.

"This is not for the front line," Von Hoff said. "But about half the people leave you scratching your head because nothing is working."

The research was significant not only in terms of using molecular profiling but also in showing a broad local collaborative effort, said Slater.

The study was funded by a \$5 million grant from Valley businessman Jerry Bisgrove's Stardust Foundation to the Scottsdale Healthcare Foundation. Bisgrove has been a patient at Scottsdale Healthcare and is a member of the Healthcare Foundation's board of trustees.

Caris Diagnostics in Phoenix performed the molecular profiling used in the study. The company offers a commercially available testing service to help oncologists prescribe more effective treatments.

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