Blood-Based Molecular Testing For Pancreatic Cancer Patients

Perthera, Inc. study urges caution in use of blood-based biopsies.

McLean, VA (PRWEB) December 07, 2016 -- A new study published in the just-published "Oncotarget" peer-reviewed medical journal has concluded that “in the setting of previously treated, advanced pancreatic cancer, liquid biopsies are not yet an adequate substitute for tissue biopsies. Further refinement in defining the optimal patient population and timing of blood sampling may improve the value of a blood-based test.” The study was conducted by a team of researchers and clinicians from Perthera, Inc., a precision medicine company based in McLean, VA, the Pancreatic Cancer Action Network (PanCAN), Lombardi Comprehensive Cancer Center of Georgetown University, Cedars-Sinai Medical Center, Ohio State University, City of Hope Cancer Center, Virginia Mason Medical Center, and the Sidney Kimmel Cancer Center at Thomas Jefferson University. The study is entitled "a pilot study evaluating concordance between blood-based and patient-matched tumor molecular testing within pancreatic patients participating in the Know Your Tumor (KYT) Initiative." Know Your Tumor is a benchmark precision cancer therapy program of the Pancreatic Cancer Action Network that is executed by Perthera.

The study asserted that “molecular profiling of the tumor itself should remain the gold standard,” or as approved by the FDA. Liquid biopsies can "go wrong" in a variety of ways: mainly because the tumor isn't dumping DNA into the blood, or because the detection assays aren't sensitive enough to detect the DNA when it is too low in abundance to see. The investigators assessed the ability of the circulating genomic information obtained from a blood sample of 34 consecutively screened pancreatic cancer patients with metastatic disease to accurately recapitulate the genomic information obtained by direct analysis of a tumor biopsy obtained from the same patient taken at the same time. They used the high frequency of KRAS mutation (~90%) in pancreatic cancer as a benchmark for comparison, and they found that KRAS mutations “were only detected in 10/34 (29%) blood samples, compared to 20/23 (87%) tumor tissue biopsies."

Dr. Jonathan Brody, the last author on the study and Director of Surgical Research and Co-director of the Jefferson Pancreas, Biliary and Related Cancer Center and on the scientific advisory board at Perthera, cautioned that "the results of this study should give people some pause; we need to be very careful about the state of the liquid biopsy field right now." He said, "we need to be very circumspect- in this study, we detected DNA with KRAS mutations in only a third of the patients that you should see the genomic alteration, so what does it say about being able to reliably detect actionable alterations that doctors would use to make critical treatment decisions?" Dr. Michael Pishvaian, the first author of the study and Perthera’s CMO as well as the Director of the Phase I Clinical Program and Co-Director of the Ruesch Center Pancreatic Cancer Program at Georgetown University added that “there will be times when a tumor biopsy is unable to be performed due to medical issues, and then could a liquid biopsy be considered. Pishvaian says: “There are papers that show good but not perfect concordance between the genomic information in tumor samples and blood samples, and our study in pancreatic cancer reveals something different. Some of the disparate results from these studies come from differences in the clinical aspects of the patients studied, but ultimately if liquid biopsies are to be used routinely for precision medicine applications then the field needs more improvements.”

In the meantime, Emanuel “Chip” Petricoin, PhD, Perthera’s Chief Science Officer said, “Central to Perthera’s medical philosophy is that the patient should have as extensive molecular profiling as relevant, and blood-based testing will be great to add to our arsenal of testing options as it becomes more reliable and sensitive. So, we are committed to implementing molecular profiling technologies that have the best evidence of impact to patients’
precision cancer therapy outcome and we will be constantly monitoring the state of the field on this topic. As the liquid biopsy technologies and approaches improve and become more sensitive, then we can validate them and implement them."

ABOUT PERTHERA, INC.: Perthera is a founder- and venture-backed precision medicine company based in McLean, VA, that has achieved more than 1,000 case histories since it was founded about five years ago, often working in an alliance with cancer advocacy agencies as well as hospitals, community oncology practices, and academia. In every patient instance, the Company seeks to become the precision medicine partner on their cancer care team, providing the widest, deepest, and most independent range of service possible.

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