Blood Test for Multi-Cancer Screening Has Impressive Success Rate

The test can detect more than 50 cancers, including many that are difficult to catch early, with very few false positives.

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Last spring, study results revealed that a blood test called Galleri developed by the California-based pharmaceutical company Grail Inc. was capable of detecting more than 50 different cancers. Now, new research shows that the test is highly accurate, yielding very few false positives.

Of the more than 100 types of cancer known to science, many are difficult to catch early. These include lymphoma, lung cancer, liver cancer, anal cancer, bowel cancer, bladder cancer, stomach cancer, ovarian cancer, pancreatic cancer, esophageal cancer and blood cancers, such as multiple myeloma. If Galleri proves effective outside of a research setting, it could drastically reduce the number of annual cancer deaths by facilitating treatment at earlier stages of disease, when outcomes are often more favorable.

Galleri works by surveying a blood sample for cell-free DNA (cfDNA). Often shed by tumors into the bloodstream, cfDNA bears chemical signatures specific to individual cancers. For example, cfDNA that originates in a pancreatic tumor is easily distinguishable from cfDNA that originates in an esophageal tumor.

Researchers administered Galleri to 2,823 people with cancer and 1,254 people without cancer. The researchers found that the test correctly detected cancer in 51.5% of all cases regardless of stage and incorrectly detected cancer in 0.5% of all cases. Their observations and conclusions were presented at the American Society for Clinical Oncology Annual Meeting and have been published in the journal Annals of Oncology.

“False positives are low, which is important, as this will avoid misdiagnoses,” Marco Gerlinger, MD, a team leader at the Institute of Cancer Research in London and a consultant medical oncologist at the Royal Marsden NHS Foundation Trust, told The Guardian.

Galleri correctly identified the tissue of origin, meaning the type of cancer, in 88.7% of cases. In addition, Galleri was better at correctly detecting cancer in cases that involved solid tumors that don’t have accepted screening methods, such as liver tumors, pancreatic tumors and esophageal

tumors, than it was at correctly detecting cancer in cases that involved solid tumors that do have accepted screening methods, such as breast tumors, bowel tumors, prostate tumors and cervical tumors. Breast tumors can be detected via mammograms, bowel tumors can be detected via colonoscopies, prostate tumors can be detected via prostate-specific antigen (PSA) tests and cervical tumors can be detected via Pap smears.

“These data suggest that, if used alongside existing screening tests, the multi-cancer detection test could have a profound impact on how cancer is detected and, ultimately, on public health,” Eric A. Klein, MD, the chairman of the Cleveland Clinic’s Glickman Urological and Kidney Institute and the first study author, told The Guardian.

How soon might a blood test become a standard part of cancer screening? In England, the National Health Service (NHS) is planning a pilot study, according to The Guardian. The study will include approximately 165,000 people, states a press release issued by Grail in November; results are due by 2023. If successful, the NHS may expand the study to include a million people by 2024 or 2025.

In the United States, a bipartisan bill was introduced in the Senate in March to require Medicare to pay for “multi-cancer early detection,” or MCED, tests, a category that would include Galleri. The Medicare Multi-Cancer Early Detection Screening Coverage Act of 2021 is supported by over 300 advocacy organizations and cancer centers.

For more on blood tests and cancer detection, read “NIH Scientists Develop Blood Test to Help Improve Liver Cancer Screening” and “Blood Test Boasts High Accuracy in ID’ing Gastrointestinal Cancers.”

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