Researchers develop ultasensitive blood test to predict recurrence of gastric cancers

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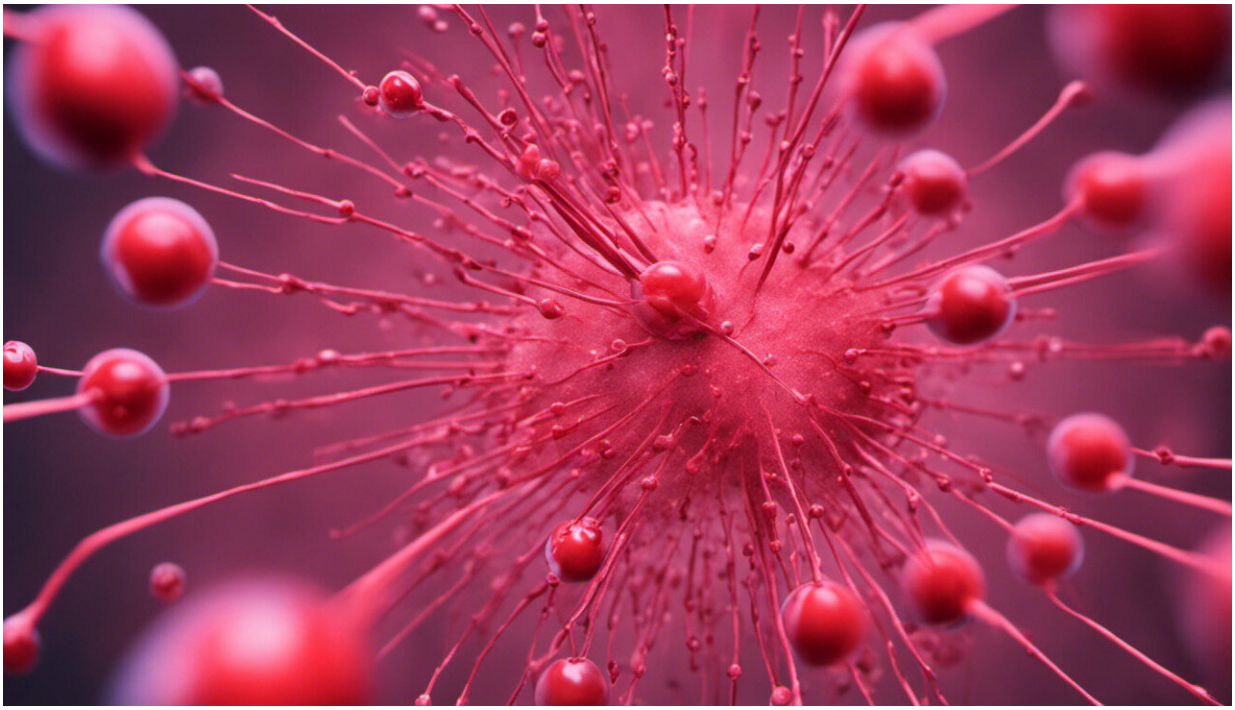

Credit: AI-generated image (disclaimer)

Researchers at the Johns Hopkins Kimmel Cancer Center in Baltimore, working with colleagues in the Netherlands, developed a blood test that can predict recurrence of gastric cancer in patients after surgery. A description of their test, which is still experimental, was published online Jan. 27 in the journal *Nature Communications*.

Investigators analyzed blood samples from 50 patients with gastric cancer who participated in the CRITICS trial, a phase III, randomized controlled study of chemotherapy given at about the time of surgery. They performed deep sequencing of both circulating cell-free DNA (cfDNA) and of white blood cells to look for mutations. Subtracting the white blood cells' information from cfDNA yielded data investigators could use to predict cancer recurrence within nine weeks following preoperative treatment and surgery.

"We performed this study to see if we could predict whether gastric cancers would recur using noninvasive liquid biopsies. Using a deep sequencing approach of cell-free DNA and white blood cells, we found an outstanding prediction of whether the therapy was successful," says senior study author Victor Velculescu, M.D., Ph.D., professor of oncology, pathology and medicine. Velculescu also is co-director of the Kimmel Cancer Center's cancer genetics and epigenetics program, and associate director for precision medicine.

Alessandro Leal, M.D., Ph.D., lead author of the paper on the study and former graduate student at the Johns Hopkins University School of Medicine says, "Patients who did not have mutations in the blood after surgery were all cured of cancer, while patients who had mutations in the blood typically recurred. We were able to predict patient outcome about nine months earlier through the blood test than we otherwise could have through clinical evaluation."

More information: Alessandro Leal et al. White blood cell and cell-free DNA analyses for detection of residual disease in gastric cancer, *Nature Communications* (2020). DOI: 10.1038/s41467-020-14310-3

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