Study supports chemotherapy option that reduces side effects for people with gastrointestinal cancers

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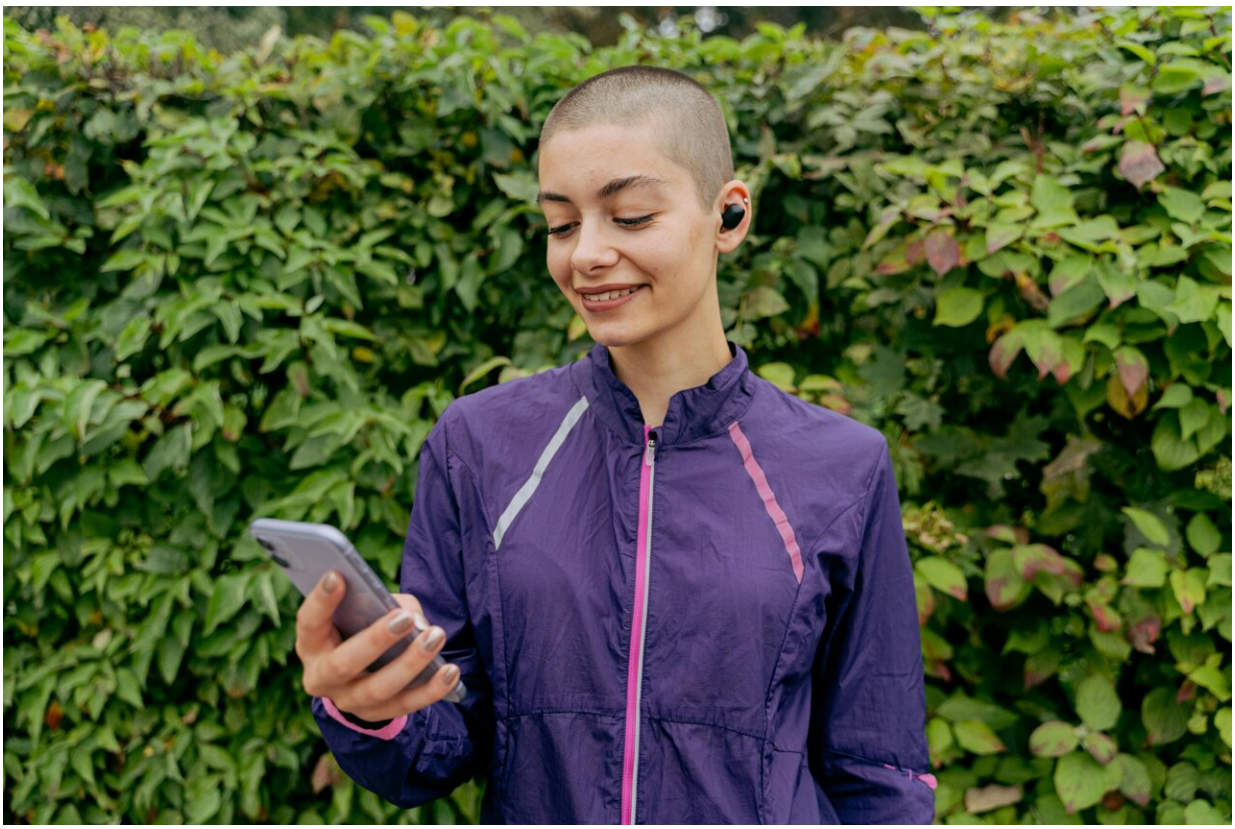

Credit: Antoni Shkraba from Pexels

Research published online by the *Journal of the National Comprehensive Cancer Network* (*JNCCN*) finds that for many commonly-used treatment

regimens targeting metastatic gastrointestinal (GI) cancers, such as FOLFOX, FOLFIRI, or FOLFIRINOX, it is possible to administer 5-FU solely through continuous infusion, minus the bolus (quick-delivery via intravenous push) component, without negatively affecting patient outcomes.

The study, "Omission of 5-Fluorouracil Bolus from Multidrug Regimens for Advanced Gastrointestinal Cancers: A Multicenter Cohort Study," reviewed results from 11,765 patients across 280 cancer clinics who were diagnosed with advanced colorectal, gastroesophageal, and pancreatic cancers between January 2011 and May 2022.

According to the findings, there was no decrease in overall survival for the 13.7% of patients who did not receive a 5-FU bolus component as part of their treatment regimen. However, those patients did see a notable reduction in cytopenias, such as neutropenia (compromised immune system) or thrombocytopenia (bleeding problems).

"The true value of our findings lies in the empirical evidence they provide, which supports what many of us have long suspected," said lead researcher Shun Yu, MD, NYU Langone Health.

"The most significant benefit of this adjustment is that it makes the treatment more tolerable, potentially easing the chemotherapy experience for patients. For decades, the most effective treatment for gastrointestinal cancers was a combination of two forms of 5-fluorouracil: the 5-FU bolus injection, followed by the 5-FU continuous infusion.

"However, in the early 2000s, the standard of care evolved into multi-drug regimens after it was discovered that adding to the two-component 5-FU backbone significantly improved patient outcomes. While the value of the 5-FU bolus was well established in the older single drug

regimens, its role in these newer multi-drug combinations was never thoroughly tested and was largely just assumed."

The study points out that many practicing oncologists—particularly those who have been in practice longer or who specialize in GI cancers—have already begun to omit the bolus. Recent shortages of 5-FU have also highlighted the potential for reducing this bolus portion.

"This study offers solid evidence for not using a 5-FU bolus with FOLFOX/FOLFIRI/FOLFIRINOX regimens in advanced GI cancers," commented Elena Gabriela Chiorean, MD, Fred Hutch Cancer Center, who was not involved in this research.

"5-FU is a core component of treatment regimens for many gastrointestinal cancers and has traditionally been included as a bolus in addition to a 46-hour infusion in many multiagent chemotherapy regimens. However, there has been no clear evidence showing that bolus 5-FU confers additional efficacy when retained with 5-FU infusion in multi-agent regimens.

"The authors conducted a large retrospective cohort study to determine the safety and survival rates for patients with advanced colorectal, gastroesophageal and pancreatic cancers after multiagent 5-FU based chemotherapy with and without the 5-FU bolus from the start, adjusting for clinical factors such as age and comorbidities. This large study shows that omitting the bolus 5-FU has no detrimental effect on survival but reduces side effects and health care costs."

A more detailed response from Dr. Chiorean, who is also a Member of the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) Panel for Pancreatic Adenocarcinoma, will be publishing in the upcoming October 2024 issue of *JNCCN*.

More information: Omission of 5-Fluorouracil Bolus From Multidrug Regimens for Advanced Gastrointestinal Cancers: A Multicenter Cohort Study, *Journal of the National Comprehensive Cancer Network* (2024). DOI: 10.6004/jnccn.2024.7029