

Folate receptors may serve as a front door to ovarian cancer treatment

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A new strategy that takes advantage of ovarian cancer's reliance on folate appears to give relapse patients extra months of life with few side effects, according to research by Sharad Ghamande, Chief of the Section of Gynecology Oncology at Georgia Health Sciences University. Credit: Phil Jones, Georgia Health Sciences University Photographer

A new strategy that takes advantage of ovarian cancer's reliance on folate appears to give relapse patients extra months of life with few side effects, researchers say.

The therapy uses the folate receptors on cancer cells as a sort of front door by pairing a substance attracted to the receptors with a chemotherapeutic agent too toxic to be given systemically, said Dr.

Sharad Ghamande, Chief of the Section of Gynecologic Oncology at Georgia Health Sciences University.

Large numbers of folate receptors typically indicate the most aggressive ovarian cancers, as well as a variety of other cancers such as breast, lung and kidney.

The combination, called EC145, delivers a Vinca alkaloid directly inside cancer cells, improving effectiveness while reducing side effects particularly in women who overexpress folate receptors. A similar approach of pairing the folate [ligand](#), which is attracted to the receptor, with a drug that makes those receptors glow, enables physicians to see how many folate receptors are present and who would be the best candidates for this treatment.

"We think this offers women with platinum-resistant disease a well-tolerated, effective treatment at a time when other drugs have failed them," Ghamande said. "We hope it will give them more quality time to meet important milestones, such as seeing a grandson graduate from high school." He noted that the strategy likely could enable targeted delivery of other drugs.

Ghamande is presenting findings of the phase 2 clinical trial at an Oct. 27-29 meeting in Brussels of the European Organisation for Research and Treatment of Cancer-National Cancer Institute-American Society of Clinical Oncology Annual Meeting on [Molecular Markers](#) in Cancer. The study enrolled 149 patients at 65 centers in North America and Poland; GHSU was among the top enrollers.

Platinum-based drugs are the standard of care for [ovarian cancer](#), which is typically diagnosed in the late stages because there is no good screening test, such as the Pap smear for cervical cancer. After surgery and a round of chemotherapy, most women go into remission, but it's

usually short-lived: about 70 percent of patients relapse within two years, Ghamande said. Physicians today often pair chemotherapeutic agents with biologic agents that bolster the immune response to try to improve outcomes. When women relapse or, inevitably, become platinum-resistant, they receive the [chemotherapeutic agent](#) Doxil.

The study compared, women receiving Doxil to those receiving Doxil as well as EC145. They found those with the most folate receptors on their cancer cells benefited the most from the new therapy: their progression-free survival went from 6.6 to 24 weeks, a 72 percent improvement from the standard therapy. "There is a proof of concept because the more folate receptors you overexpress, the better you do," Ghamande said.

Folate, or folic acid, is a B vitamin that is a basic component of cell metabolism and DNA synthesis and repair. [Cancer cells](#), which are constantly multiplying and adapting, need more of it than healthy cells.

A larger Phase 3 study is underway internationally. The research was funded by Endocyte, Inc.

Provided by Georgia Health Sciences University

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