

From Sufferer to Survivor

Vitamin E Succinate Shows Promise in Controlling Ovarian Cancer

Cancer. The word drives fear into the hearts of millions. It's a serial killer that knows no prejudice, no preference, and no mercy as the body turns on itself in involuntary self-destruction.

But perhaps the scariest part of cancer is this: After all the treatments and surgeries, when the disease appears to be gone, it may not be. If there are even one or two cancer cells lurking behind after treatment, then, given enough time, the cancer can return.

This frightening prospect has led scientists to look for ways to control the growth of cancer cells. A project by researcher Marta Crispens, M.D., assistant professor in the Department of Obstetrics and Gynecology at SIU School of Medicine, is investigating the possibilities of using vitamin E succinate to destroy ovarian cancer cells.

"What we have found in our research project is that vitamin E succinate (VES) inhibits the growth of ovarian cancer cells in the test tube cultures."

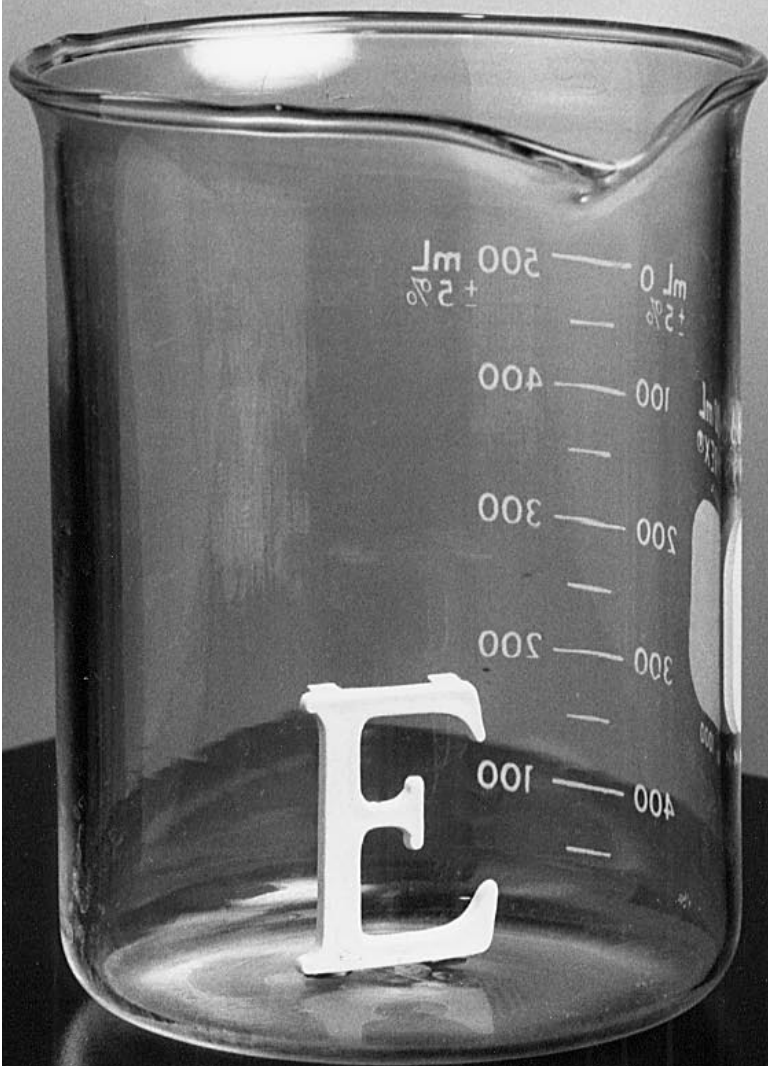
Dr. Crispens' focus with VES is to use it to control ovarian cancer by stopping further growth of cells, changing the perception of cancer from a fatal illness into a manageable, chronic disease like diabetes. "Vitamin E may be useful as a maintenance drug to keep tumors dormant," says Dr. Crispens.

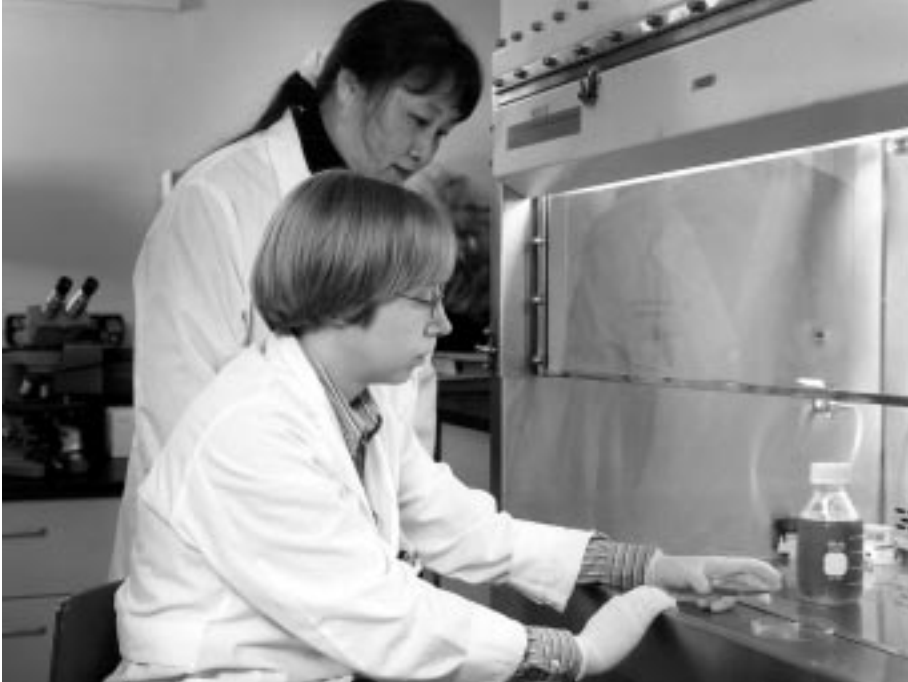
But before you head to the drug store to stock up on the amber-colored pills, read on.

"Vitamin E won't work orally to kill cancer cells," says Dr. Crispens, who is collaborating on the project with Mary McAsey, Ph.D., assistant professor in the School's Department of Obstetrics and Gynecology. Taken orally, says Dr. Crispens, vitamin E loses the cancer-killing effects of VES, a naturally-occurring derivative.

Although this research project is only in the beginning stages of laboratory work, the scientists already have achieved great success. After growing ovarian cancer cells in vitro, which means in an artificial environment, Dr. Crispens treated them with VES, and in as little as 48 hours, all the ovarian cancer cells died.

"We've been able to achieve a definite goal, asserts Dr. Crispens. "VES kills ovarian cancer cells in test tube cultures." She stresses that the tests were performed numerous times under controlled conditions to ensure the accuracy of the tests.





Dr. Marta Crispens, (seated) with researcher Jennifer Li, is focusing on changing the perception of cancer from a fatal illness into a manageable, chronic disease.

How cancer spreads

To understand how VES works on ovarian cancer, Dr. Crispens explains how cancer spreads throughout the human body. “Your body’s cells know when errors occur in the DNA or when a cell gets sick. Cells are naturally programmed to eliminate abnormal cells through a process called *apoptosis*, or cell suicide. Cancer cells accumulate genetic errors but don’t recognize them and don’t commit suicide, so the disease spreads as the tumors sustain themselves.”

According to Dr. Crispens’ research, VES stimulates the cells to undergo apoptosis. “Our next step is to figure out what the mechanism is, how and why the cells undergo apoptosis.” Dr. Crispens says she is ready to move on to animal models as soon as she acquires the necessary funding. If those tests achieve positive results, she plans to take her research on to human trials, though that prospect is at least two years away.

The hopes for VES

Scientists and researchers are discovering the powerful health benefits

of vitamin E. As a preventative tool, research has shown that the vitamin is a potent antioxidant that can absorb the body’s “free radicals” — atoms or molecules in the body that are very reactive. Free radicals are the culprits in cellular damage, which can lead to cancer, heart disease and a host of other illnesses.

Dr. Crispens’ focus is using VES as a controlling modality for cancer.

“VES has a lot of promise. We can show that it does kill cancer cells, but we don’t understand a lot about how it works. Animal models will help us do that.” Her research eventually could produce more effective drugs or treatment plans for ovarian cancer.

Dr. Crispens was first alerted to the potential of vitamin E succinate by SIU associate professor Mokenge Malafa, M.D., who has been studying the effects of VES in breast cancer patients.

His research involved growing breast cancer cells in mice. He injected VES into the abdominal cavity, and the vitamin traveled through the bloodstream to the tumor sites, halting the growth of the breast

tumors. Dr. Crispens reasons that the same procedure might work even better for ovarian cancer, since ovarian cancer grows and spreads in the abdominal cavity.

The VES project recently received national attention. In March, Dr. Crispens presented a paper about her research at the national meeting of the Society of Gynecologic Oncologists.

Understanding ovarian cancer

Ovarian cancer is the deadliest cancer for women. Last year, the American Cancer Society estimated that more than 23,000 women would be diagnosed with ovarian cancer and 14,000 would die from the disease. This type of cancer is difficult to detect early, since the symptoms, which include abdominal discomfort, nausea, diarrhea, loss of appetite, abnormal vaginal bleeding, and enlargement of the abdomen, are mild until the disease has advanced. According to the American Cancer Society, only about 25 percent of ovarian cancer cases are found at the earliest, most treatable stage. The five-year survival rate for advanced stages of ovarian cancer is only 20 percent, which means new treatments are seriously needed.

Standard treatment for ovarian cancer consists of surgery to remove as much of the tumor as possible, followed by chemotherapy. But chemotherapy can be very toxic and has numerous side effects. Since VES is nontoxic, Dr. Crispens speculates that it could be added to boost existing treatments without side effects.

Much more work needs to be done before scientists will know whether women with ovarian cancer could benefit from VES. But Dr. Crispens’ work gives hope that, though cancer cells may remain, they can be controlled. And that means patients’ lives can thrive, and survivors will triumph. ■