



Virus Shows Some Cancer-Killing Abilities

TUESDAY, Oct. 30 (HealthDay News) -- While most people associate viruses with human illness, a new study suggests that at least one virus might have cancer-fighting abilities that could be used to treat some metastatic cancers.

Reporting in the Nov. 7 issue of *Journal of the National Cancer Institute*, researchers explained that the virus, Seneca Valley Virus-001 (SVV-001), was effective in treating lines of cells from small-cell lung cancer and some pediatric cancers, as well as lung cancer and eye cancer in immune-deficient mice.

"In animal studies, we found complete eradication of small-cell lung cancer," said the study's lead author, Paul Hallenbeck, founder, president and chief scientific officer of Neotropix, in Malvern, Pa. "This is a promising new, yet old, approach to a very serious disease," added Hallenbeck, noting that people first noticed that viruses had some effect on cancer as long as 100 years ago.

However, at least one expert advised caution when interpreting these findings about the virus and metastatic cancer, which is cancer that has spread from one site in the body to another.

"These initial results look promising and warrant further investigation, but this is a very early study done in cell lines and an animal model," said Dr. Jay Brooks, chairman of hematology and oncology at Ochsner Health System in Baton Rouge, La. Brooks said there are still many questions that need to be answered about this virus, such as what are the long-term effects in humans, how expensive is it, will it continue to work in the long run, and would you have to be on it for the rest of your life?

Hallenbeck and his colleagues hope to answer the safety question shortly. They're in the midst of a phase I clinical trial that includes 18 people. Phase I trials are designed solely to look at whether or not a product is safe to administer in humans; they are not designed to assess effectiveness.

For the new study, Hallenbeck and other researchers reported on their results with cell lines and mice. Hallenbeck said he originally discovered the virus while working at a subsidiary of Novartis Pharmaceuticals, called Genetic Therapy. He said the virus is a previously undiscovered strain from the *Picornaviridae* family of viruses.

Previous viruses have shown cancer-fighting (oncolytic) ability. But, because the human immune system is primed to fend off viruses, oncolytic viruses may have trouble surviving until they reach their intended target -- the spreading cancer cells. To avoid this, researchers have been directly injecting viruses into tumors. But, according to Hallenbeck, if you're able to access a tumor well enough to inject the virus into it, that tumor can probably be well treated with surgery or radiation.

The SVV virus appears to be able to reach metastatic cancer cells without being inactivated by the immune system cells present in blood. With this virus, Hallenbeck is hoping to be able to track down metastatic cancer cells that can't easily be detected.

And, in cell lines, the virus appears to be effective at treating small-cell lung cancer and some pediatric cancers, without being inactivated by the immune system. The researchers also tested the virus in mice with deficient immune systems and found it was able to eradicate small-cell lung cancer in 10 out of 10 mice tested and knock out eye cancer in five out of eight mice tested.

"It is unclear whether these results from immune-deficient mouse models would be similar to those of patients with metastatic cancer. In particular, it is unknown whether the patients' immune system would reduce the effectiveness of SVV-001," the study authors wrote.

Hallenbeck said the phase I trial is expected to be completed some time next year. If all goes well in that trial, testing of the virus will move on to trials designed to measure effectiveness, he said.