

Researchers Testing Virus-Gene Therapy Combination Against Melanoma

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Researchers at the Moores UCSD Cancer Center are injecting a modified herpes virus into melanoma tumors, hoping to kill the cancer cells while also bolstering the body's immune defenses against the disease.

Gregory Daniels, MD, PhD, assistant clinical professor of medicine at the UC San Diego School of Medicine and his co-workers are comparing the modified virus treatment, called OncoVEX GM-CSF, to general immune system stimulation with the immune-boosting protein GM-CSF in an international phase III trial for patients with advanced melanoma. The Moores UCSD Cancer Center is the only site in San Diego for the clinical trial.

Melanoma, the most dangerous kind of skin cancer, takes about 60,000 lives a year in this country. "Melanoma has always been curable, but only in a small fraction of patients," Daniels said. "Local tumor killing with immune activation may provide an additional tool to increase this number to a larger population of cancer patients."

According to Daniels, the injected virus appears to preferentially infect cancer cells, leading to tumor death. The expression of the GM-CSF protein may also direct an immune attack against both infected and non-infected tumors. The virus has in essence been genetically reprogrammed to target the cancer cells, while healthy cells remain relatively untouched. The research team is testing the two-pronged attack of direct tumor cell killing and immune activation. Their aim is to see if it will help those patients whose cancer has spread to other areas of the body to live longer without disease than has been possible with standard therapies.

While the field of cancer immunotherapy – employing the body's own immune system to fight cancer – has had mixed results to date, Daniels remains hopeful. Earlier stage testing showed that about 26 percent of patients receiving the OncoVEX GM-CSF therapy had either a partial or complete response, meaning their cancer either stopped growing or regressed.

Daniels said that while the therapy has been shown in earlier testing to destroy the injected tumors to some degree, it also causes a general change in the immune system, occasionally

shrinking uninjected tumors. "It's a more active type of immunotherapy, causing a cascade of immune system activity in the body," he said.

The team hopes to enroll 30 patients with advanced melanoma. The cancer in these individuals cannot be removed surgically, and the patients must have had one failed prior therapy. The goal of the trial is not necessarily to cure the patients of their cancer, but to enable them to live disease-free for at least six months and longer. In all, 360 patients worldwide will ultimately participate in the trial. Twice as many patients will get the virus as will get the GM-CSF alone. As this is not a blinded study, those running the trial will know who is getting which therapy, but the treatments are randomly assigned to participants.

The virus infection-immune system-boosting approach could potentially be used for other types of cancers, Daniels said, such as colon, breast, prostate, bladder and lung.

OncoVEX GM-CSF is made by BioVex, a Woburn, MA-based biotechnology company.

For more information about this trial, please contact Trang Tran, clinical trials coordinator, at 858-822-4171 or melanoma@ucsd.edu.

[The Moores UCSD Cancer Center](#) [↗](#) is one of the nation's 41 National Cancer Institute-designated Comprehensive Cancer Centers, combining research, clinical care and community outreach to advance the prevention, treatment and cure of cancer. For more information, visit

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