

Reovirus may be a novel approach to prostate cancer treatment

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Researchers in Canada have detected a novel oncolytic viral therapy against prostate cancer with use of a virus called the reovirus, according to study results published in *Cancer Research*, a journal of the American Association for Cancer Research.

The respiratory, enteric, orphan virus (commonly known as reovirus) is a non-attenuated, environmental virus that has shown oncolytic potential against many types of cancer, specifically lymphoid, ovarian, breast, pancreatic and high grade glioma cancer, according to the study. This is the first time the virus has been studied against prostate cancer.

"The reovirus is a very common, ubiquitous virus that most people are exposed to. As far as we know, it doesn't cause any significant illness in humans, even though when someone is exposed to it, it manifests, at most, as a mild [respiratory infection](#) or mild diarrhea," said researcher Don Morris, M.D., Ph.D., medical oncologist in the Department of Oncology at the Tom Baker Cancer Center in Alberta, Canada.

"For the treatment of localized prostate cancer, we found that the reovirus is safe and has evidence of specific tumor vs. normal prostate cell efficacy," added Morris.

Using preclinical and clinical settings, Morris and colleagues examined the efficacy of the reovirus as an experimental therapeutic for prostate cancer in vitro and in vivo. Among the six patients who participated in the study, all had early-stage, organ-confined prostate cancer. Each

patient underwent a single intralesional virus injection into a suitable prostate cancer nodule via transrectal ultrasound guidance. Three weeks later, Morris and colleagues removed the prostate as part of the patient's standard treatment for correlative science analysis.

Findings showed safety and efficacy with minimal toxicity and no [viral replication](#) in the normal parts of the prostate, according to Morris. Cancer [cell death](#) was evident in the prostate. Studies to date have suggested that the virus' side effects are relatively modest, consisting of mild, self-limiting, flu-like symptoms.

"Our results are a stepping stone into future prostate cancer clinical trials with another category of cancer therapeutics," he said.

Robert Clarke, Ph.D., D.Sc., professor of oncology at Lombardi Comprehensive Cancer Center at Georgetown University and an editorial board member of [Cancer Research](#), agreed, stating that he believes this study is worthy of subsequent clinical trials of the reovirus as a possible way of treating some prostate cancers.

"People have known of this application of the reovirus in trials, but no one to my knowledge has conducted studies in [prostate cancer](#)," said Clarke, who was not associated with this study. "I think this is an interesting approach. There is not a lot done in oncolytics, but clearly it is an area that is getting increasing attention, and we need everything we can get our hands on to make a difference in these patients."

Provided by American Association for Cancer Research

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