Common Cold Virus Strain Is Highly Effective Against Bladder Cancer

The cancer is particularly difficult to treat with traditional therapies.

July 25, 2019 By Benjamin Ryan

Traditionally difficult to treat, bladder cancer responded well to treatment with a strain of common cold virus in a recent study.

Publishing their findings in Clinical Cancer Research, Hardev Pandha, PhD, a professor of Medical Oncology at the University of Surrey in the United Kingdom, and colleagues conducted a study of 15 people with non-muscle invasive bladder cancer. They investigated the safety and tolerability of exposure to the oncolytic, or cancer-killing, virus coxsackievirus A21 (CVA21), which is a naturally occurring strain of the common cold virus.

Standard treatment for bladder cancer involves surgery, radiation therapy, platinum-based chemotherapy or exposure to BCG, a bacterium similar to the one that causes tuberculosis.

“Non-muscle invasive bladder cancer is a highly prevalent illness that requires an intrusive and often lengthy treatment plan,” Pandha said in a press release. “Current treatment is ineffective and toxic in a proportion of patients, and there is an urgent need for new therapies.”

One week before they were set to receive surgery to remove their bladder tumors, the participants received treatment with CVA21, known as Cavatak, via a catheter into the bladder. Following surgery, the investigators analyzed tissue samples and found that the virus was highly selective in targeting only cancer cells in the bladder; there was no evidence that it disrupted other cell types.

CVA21 apparently worked by infecting the cancerous cells and replicating inside of them until they ruptured and died. Even after such cell death, the new copies of the virus went on to attack other cancer cells. What’s more, this process caused inflammation in the tumor that drew a further tumor-combating assault from the immune system. Ordinarily, bladder tumors lack immune cells, so they are left unchecked by the immune system.

The treatment was associated with cell death in the majority of the participants’ tumors. One person was left with no trace of cancer.

“Coxsackievirus could help revolutionize treatment for this type of cancer,” Pandha said. “Notably,

no significant side effects were observed in any patient."

"Traditionally viruses have been associated with illness; however, in the right situation, they can improve our overall health and well-being by destroying cancerous cells," Nicola Annels, PhD, a research fellow at the University of Surrey, said in the same press release. "Oncolytic viruses such as the coxsackievirus could transform the way we treat cancer and could signal a move away from more established treatments such as chemotherapy."

To read the study abstract, click here.

To read a press release about the study, click here.

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