Combinatorial therapy allows viruses to destroy tumors

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For several years, researchers have been developing a new approach to treating cancer that uses viruses to infect and kill cancer cells while leaving normal cells unharmed. Recent data have indicated that this approach, which is known as oncolytic virotherapy, has potential.

Now, Richard Vile and colleagues, at the Mayo Clinic, Rochester, have found that this approach can be combined with a standard clinical therapy to provide substantial regression and cure of tumors in mice, leading them to suggest that this combinatorial approach could be of tremendous benefit in the clinic.

Tumors that grow to a certain size need to form new blood vessels if they are to continuing growing and spread to other sites. One of the molecules that controls this new blood vessel growth, VEGF, is the target of drugs used to treat several forms of cancer.

In this study, the authors found that modulating VEGF signaling, for example by transiently stopping anti-VEGF therapy in mice harboring cancer cells expressing high levels of VEGF, allowed the cells that line tumor blood vessels to be targeted and killed by viruses. Importantly, as this approach targets the cells lining tumor blood vessels, rather than specific types of tumor cells, the authors suggest that this combinatorial approach to therapy could be used to treat a wide range of cancers.

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