

Measles virus may be effective prostate cancer treatment

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A new study appearing in *The Prostate* has found that certain measles virus vaccine strain derivatives, including a strain known as MV-CEA, may prove to be an effective treatment for patients with advanced prostate cancer. The findings show that this type of treatment, called virotherapy, can effectively infect, replicate in and kill prostate cancer cells.

Prostate cancer is a leading cause death among males in the western world. It is currently the second most common cause of cancer-related deaths among American men with 186,320 new cases and 28,660 deaths expected to be recorded in 2008. A sizeable proportion of these patients ultimately relapse, with a 5-year failure rate for treatment ranging from 14 to 34 percent. No curative therapy is currently available for locally advanced or metastatic prostate cancer.

The median survival time of MV-CEA-treated mice in the study almost doubled compared to the controls, and complete tumor regression was observed in one-fifth of treated animals.

"Based on our preclinical results as well as the safety of measles derivatives in clinical trials against other tumor types, these viral strains could represent excellent candidates for clinical testing against advanced prostate cancer, including androgen resistant tumors," says Evanthia Galanis, M.D., of the Mayo Clinic, senior author of the study. The study was supported by the Mayo Clinic Specialized Program of Research Excellence (SPORE) in prostate cancer.

These oncolytic strains of measles virus, represent a novel class of therapeutic agents against cancer that demonstrates no cross-resistance with existing treatment approaches, and can therefore be combined with conventional treatment methods.

Because primary tumor sites are easily accessible in prostate cancer, locally recurrent disease

represents a promising target for virotherapy approaches. The virotherapy agent can easily be applied directly to the prostate tumor via ultrasound-guided needle injections and close monitoring of therapy can be achieved by non-invasive techniques including ultrasound and MRI.

The measles vaccine strains also have an excellent safety record with millions of vaccine doses having been safely administered in over 40 years of use. Repeated measurements of the marker CEA (carcinoembryonic antigen, produced when the virus replicates) following MV-CEA treatment can be performed via a simple blood test, and can potentially allow for optimization of dosing as well as the tailoring of individualized treatment. To date, no significant toxicity from MV-CEA treatment of patients with other tumor types has been observed.

Prior studies have demonstrated the therapeutic potency of MV-Edm derivatives against a variety of preclinical animal models including ovarian cancer, glioblastoma multiforme, breast cancer, multiple myeloma, lymphoma and hepatocellular carcinoma.

The promising results prompted the rapid translation of engineered MV-Edm strains in three clinical trials that are currently active. In the ovarian cancer trial, the furthest advanced; evidence of biologic activity has been noted in refractory ovarian cancer patients.

Source: Wiley

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