

## Novel lung cancer vaccine shows promise in fighting early-stage lung cancer

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An experimental vaccine that triggers the patient's immune system to identify and attack specific tumor cells is showing new promise for the treatment of early lung cancer. Thoracic surgeons at Rush University Medical Center are researching the vaccine called MAGE-A3 Antigen-Specific Cancer Immunotherapeutic, which is designed to kill cancer cells without harming normal cells. Rush is one of only five hospitals in Illinois offering the vaccine.

The MAGRIT (MAGE-A3 as Adjuvant Non-Small Cell [LunG Cancer](#) Immunotherapy) study is a randomized, double-blind and placebo controlled trial that will enroll patients with MAGE A-3-positive, non-small-cell lung cancers. The experimental vaccine targets MAGE-A3, a protein expressed in certain [cancer cells](#) but not in normal cells. Thirty-five percent of non-small-cell lung cancers have this protein which also is present in some melanomas and head and neck cancers.

"The principle is that you can possibly teach a patient's immune system to eliminate [cancer cells](#) that express certain proteins such as the MAGE-A3 protein," said Dr. Anthony Kim, thoracic surgeon and principal investigator of the study at Rush. "In a trial of early-stage lung cancer patients whose tumors expressed MAGE-A3, preliminary results showed that the vaccination reduced the risk of recurrence and the need for repeat surgery."

The vaccination may be a promising alternative treatment solution for lung cancer patients that may not be ideal candidates for chemotherapy.

Many surgically treated lung cancer patients are not able to tolerate the side effects of chemotherapy.

Surgery is the standard treatment for patients with early-stage lung cancer, but approximately 50 percent of patients who have surgery ultimately die of lung cancer.

"Adding the tumor vaccine to surgery has the potential to boost the survival rate by 10 percent, which was the figure that was observed in the initial phase of the MAGE-A3 trial," said Kim. "This is a potential alternative for patients that otherwise would not undergo chemotherapy treatment either because of their tumor stage or other co-morbidities such as their age or other medical problems."

A total of 182 patients with non-small-cell lung cancers were included in the early phase of the study sponsored by GlaxoSmithKline, which is developing the vaccine therapy. All the patients had cancers expressing MAGE-A3, the tumor-specific antigen. After having surgery to remove the tumors, 122 patients were randomly assigned to treatment with the MAGE-A3-targeting vaccine and 60 patients received placebo vaccines. The preliminary research shows that the treatment was well tolerated by patients and the MAGE-A3-treated patients seemed less likely to have recurrences and die from their disease than the placebo-treated patients. Further studies need to be completed to test the safety and efficacy of the vaccine.

Patients were given five injections every three weeks at the beginning of treatment and then eight injections every three months later for a total of 27 months. Earlier phases of the study indicate the immunotherapy treatment was well tolerated by patients.

Source: Rush University Medical Center ([news](#) : [web](#))

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