New drug cuts risk of deadly transplant side effect in half

December 9 2012

A new class of drugs reduced the risk of patients contracting a serious and often deadly side effect of lifesaving bone marrow transplant treatments, according to a study from researchers at the University of Michigan Comprehensive Cancer Center.

The study, the first to test this treatment in people, combined the drug vorinostat with standard medications given after transplant, resulting in 21 percent of patients developing graft-vs.-host disease compared to 42 percent of patients who typically develop this condition with standard medications alone.

"Graft-vs.-host disease is the most serious complication from transplant that limits our ability to offer it more broadly. Current prevention strategies have remained mostly unchanged over the past 20 years. This study has us cautiously excited that there may be a potential new way to prevent this condition," says lead study author Sung Choi, M.D., assistant professor of pediatrics at the U-M Medical School.

Vorinostat is currently approved by the U.S. Food and Drug Administration to treat certain types of cancer. But U-M researchers, led by senior study author Pavan Reddy, M.D., found in laboratory studies that the drug had anti-inflammatory effects as well – which they hypothesized could be useful in preventing graft-vs.-host disease, a condition in which the new donor cells begin attacking other cells in the patient's body.

Choi will present data on the first 47 patients enrolled on the study at the University of Michigan Comprehensive Cancer Center and Washington University. Participants were older adults who were undergoing a reduced-intensity bone marrow transplant with cells donated from a relative. Patients received standard medication used after a transplant to prevent graft-vs.-host disease. They also received vorinostat, which is given as a pill taken orally.

The researchers found vorinostat was safe and tolerable to give to this vulnerable population, with manageable side effects. In addition, rates of patient death and cancer relapse among the study participants were similar to historical averages.

The results mirror those found in the laboratory using mice. Reddy, an associate professor of internal medicine at the U-M Medical School, has been studying this approach in the lab for eight years.

"This is an entirely new approach to preventing graft-vs.-host disease," Choi says. Specifically, vorinostat targets histone deacetylases, which are different from the usual molecules targeted by traditional treatments.

"Vorinostat has a dual effect as an anti-cancer and an anti-inflammatory agent. That's what's potentially great about using it to prevent graft-vs.-host, because it may also help prevent the leukemia from returning," Choi says.

The study is continuing to enroll participants. The researchers hope next to test vorinostat in patients receiving a transplant from an unrelated donor, which carries an even greater risk of graft-vs.-host disease. This approach is not currently available outside of this clinical trial.

Provided by University of Michigan Health System