

Study finds new option for liver transplant patients

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Khurram Bari, MD, is shown in the University of Cincinnati College of Medicine. Credit: Colleen Kelley/University of Cincinnati

A drug commonly used to treat both asthma and inflammatory bowel disease, budesonide, may also be useful as an anti-organ rejection

medication for liver transplant patients leading to fewer serious side effects than the most commonly used therapy, according to a University of Cincinnati researcher.

Dr. Khurram Bari, an associate professor in the UC Division of Digestive Diseases, explains the drug was given to 20 [liver](#) transplantation patients over a 12-week period, and researchers found that organ rejection rates were identical to patients who received prednisone, which is considered the gold standard for treating liver transplantation patients.

Bari cautions the findings are preliminary and involve a small sample size. He will present his research at the annual meeting of the American Association for the Study of Liver Diseases in Boston scheduled for November 8-12.

"There are a few medications we use for immune suppression during liver transplantation and prednisone is one of them," said Bari, a physician at UC Health, the health system affiliated with the UC College of Medicine. "We use it during the first three to six months to prevent rejection, but there are side effects."

Nationally, about 18,000 patients are in need of a liver transplant, he says. In 2018, UC Medical Center performed 115 liver transplants, according to Bari.

"Prednisone can trigger new onset diabetes and loss of bone density," said Bari. "Lots of studies have looked at whether we can exclude prednisone totally. It is needed, but there are a lot of side effects. I wanted to use something in place of prednisone which might be less toxic."

There were equal immune suppression rates for budesonide and

prednisone, but the rates of infections in patients with budesonide were lower, according to Bari. Also, the rates of new onset diabetes in patients with budesonide were lower than patients treated with prednisone.

"This is a very small study, so we could not randomize the patients," said Bari. "We just gave budesonide to 20 patients and matched them with a [control group](#), which received standard treatment with prednisone. My goal is to do a bigger study where we would randomize these patients with prednisone."

The [pilot study](#) was funded by the American College of Gastroenterology and the UC Center for Clinical Translational Science and Training (CCTST). Funded by UC and Cincinnati Children's Hospital Medical Center, the CCTST provides services and support in several core program areas, advancing innovation in clinical and translational science and training.

Bari said the U.S. Food and Drug Administration approved budesonide for oral use to treat Crohn's disease and ulcerative colitis. It can be administered via inhaler to treat asthma.

Bari said longer term use of [prednisone](#) can also lead to kidney dysfunction and cardiovascular problems, cancers and metabolic events in patients.

"Prednisone impacts the ability of the adrenal glands to make cortisol, the body's main stress hormone, which controls your mood, motivation and fear instincts and also plays a role in regulating blood pressure," said Bari.

"Organ rejection is something but the risk goes lower and lower with time as the body gets used to the organ," said Bari.

Liver transplantation patients on average have a 92% survival rate one year after surgery, said Bari. A decade later the survival rate remains near 65%, he said.

Provided by University of Cincinnati

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