# Allergy drug inhibits hepatitis C in mice

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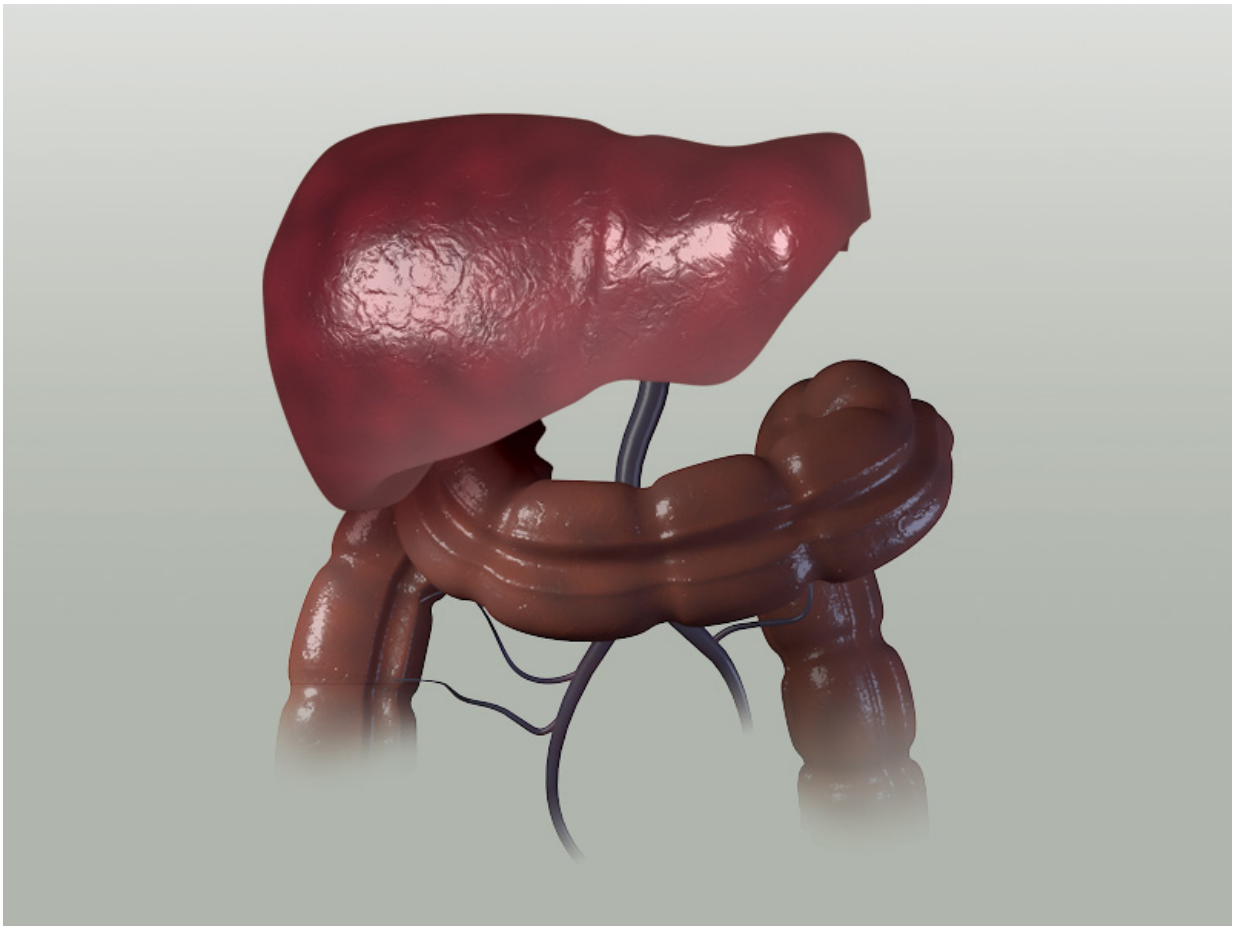

Hepatitis C is a liver disease caused by the hepatitis C virus. Chronic infection can lead to liver cancer, liver failure, and cirrhosis or scarring of the liver. Credit: V. Altounian

An over-the-counter drug indicated to treat allergy symptoms limited

hepatitis C virus activity in infected mice, according to a National Institutes of Health study. The results suggest that the drug, chlorcyclizine HCl (CCZ), potentially could be used to treat the virus in people. Results were published April 8 in *Science Translational Medicine*.

The hepatitis C virus (HCV) causes liver inflammation and often leads to serious complications such as cirrhosis. Early diagnosis and treatment of HCV can prevent liver damage. Drugs are available to treat HCV, but costs can reach tens of thousands of dollars.

"Although hepatitis C is curable, there is an unmet need for effective and affordable medication," said lead author T. Jake Liang, M.D., senior investigator at NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). "CCZ is a promising candidate for part of a treatment regimen for this potentially life-threatening disease."

Conducted at the NIH campus in Bethesda, Maryland, the study found that CCZ blocked the early stage of HCV infection likely by impairing the ability of the virus to enter human liver cells grafted in the mice. The outcome was similar to that of commonly used antiviral drugs but without those drugs' toxic side effects.

"Using an innovative high-throughput screening process, we identified CCZ as a potent inhibitor of hepatitis C," said Anton Simeonov, Ph.D., acting scientific director of NIH's National Center for Advancing Translational Sciences (NCATS), which collaborated in the study. "Identifying already approved drugs from the NCATS Pharmaceutical Collection may offer a faster route to potential discovery of treatments for all diseases."

The researchers will next study how the drug affects people. CCZ is currently used for the treatment of allergies, not for HCV. "People should not take CCZ to treat their hepatitis C until it has been

demonstrated that CCZ can be used safely and effectively for that purpose," cautions Liang.

"NIH research is vital to finding creative solutions for some of today's most serious public health issues," said NIDDK Director Griffin P. Rodgers, M.D. "The CCZ medication may eventually provide an affordable alternative to costly options, especially in low-resource communities where hepatitis C infection is widespread."

**More information:** Repurposing of the antihistamine chlorcyclizine and related compounds for treatment of hepatitis C virus infection, stm.sciencemag.org/lookup/doi/ … scitranslmed.3010286

Provided by National Institute of Diabetes and Digestive and Kidney Diseases