Grants to Fund Clinical Trials for Hep C Vaccine and Long COVID

The University of Alberta will test the efficacy of a new vaccine and potential long COVID treatment.

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The University of Alberta (UA) will lead a new clinical trial to help prevent hepatitis C (HCV) thanks to a Canadian Institutes of Health Research grant totaling $2,178,000. Another grant totaling $3,266,550 will support a clinical trial examining the efficacy of taurine supplements to treat long COVID symptoms, according to a UA news release.

Infectious disease specialist Vanessa Meier-Stephenson, MD, PhD, will lead a clinical trial testing the safety and efficacy of an HCV vaccine developed by Michael Houghton, PhD, a co-recipient of the 2020 Nobel Prize in Physiology or Medicine. Houghton is also the director of the Li Ka Shing Applied Virology Institute at UA.

The vaccine is a second-generation combination approach, according to the release. The first component causes B cells to create antibodies that bind to the pathogen and neutralize it. The second component activates T cells that attack pathogens and help the immune system recognize and respond to threats. The last component, called an adjuvant, enhances the action of the other two ingredients.

Hepatitis refers to inflammation of the liver. When untreated, it can lead to scarring of the liver (cirrhosis), liver cancer, the need for a liver transplant and death. Viral hepatitis attacks the liver, which acts as the body's filter.

An estimated 2.4 million Americans (about 1% of the American population) are living with chronic HCV, according to the Centers for Disease Control and Prevention. What's more, nearly 15,000 people died of HCV in 2020, and acute HCV cases quadrupled from 2009 to 2019. Worldwide, HCV affects about 58 million people, including more than 250,000 in Canada.

There is currently no effective vaccine for hepatitis C. However, hep C is curable in most cases, and treatment is easier and shorter than ever before. In fact, most people can be cured with a brief course of direct-acting antiviral medications, though they are expensive and not readily available in some countries, as Meier-Stephenson stated in the release.

“This combination could be a game-changer for HCV eradication and have great benefits for patients not just in Canada but worldwide,” Meier-Stephenson noted.

The goal of the new HCV vaccine is to prevent infections and reinfections and the chronic illness often associated with infection. The vaccine was designed based on the most common HCV genotype, which causes about 40% of HCV cases.

Five to 10 healthy volunteers will be enrolled to test the safety of the vaccine; later, about 60 other individuals will be randomly chosen to receive either the control placebo or the vaccine at different doses, which will test its efficacy at the start of the trial, one month and six months in.

“These types of studies are necessary to prove safety and efficacy of new products, but there’s a high level of scrutiny,” Meier-Stephenson said. “These are healthy people, and we —our trial physicians—have all taken the oath to do no harm, so any signal will be followed up carefully.”

A second grant totaling $3,266,550 was awarded to pediatric neurologist and director of the Northern Alberta clinical Trials and Research Centre, Lawrence Richer, MD, MSc, and his team to study the efficacy of taurine supplements to treat long COVID symptoms.

Taurine is an amino acid produced by the liver that can be found in foods that support nerve growth, digestion, immune system and muscle function. Additionally, it has anti-inflammatory properties.

Taurine has been identified as a predictive biomarker and potential treatment target for long COVID, according to the release. Some experts believe inflammation of the blood vessels in the brain is linked to long COVID symptoms such as brain fog and fatigue.

The trial is in Phase 2 because it is evaluating an approved supplement for a new use. Richer and his team aims to enroll 300 patients across Canada. What’s more, patients with long COVID and primary care physicians will join the research team as well.

“There are a whole lot of thoughts and ideas about what might be helpful for long COVID but precious little evidence, so this trial is really all about meeting the expectations that patients have — that things that are being recommended to them come with some degree of evidence,” Richer said.

To read more, click #Hepatitis C or #Long COVID. There, you’ll find headlines such as “NIAID Research to Eliminate the Threat of Viral Hepatitis Across the Globe,” “Hepatitis C Treatment Increased as State Medicaid Programs Eased Restrictions” and “Emergency or Not, COVID Is Still Killing People. Here’s What Doctors Advise to Stay Safe.”

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