



Third Dose of COVID-19 Vaccine Offers Needed Boost in Protection for Cirrhosis Patients

Cirrhosis of the liver is associated with decreased responsiveness to many vaccines, including those that protect against COVID-19. But new research, led by researchers at the University of Miami Miller School of Medicine and published in the *Journal of Hepatology*, suggests that getting a third dose of the COVID-19 mRNA vaccine could overcome the decreased response, offering cirrhosis patients strong protection against the virus, severe illness, and death from COVID-19.



Binu V. John, M.D.,
M.P.H.

“We studied more than 26,000 patients with cirrhosis who



received two or three doses of a COVID-19 mRNA vaccine at the Veterans Health Administration, between December 18, 2020, and February 11, 2022,” said the study’s lead author Binu V. John, M.D., M.P.H., associate professor in the Department of Medicine at the Miller School and chief of gastroenterology and hepatology at the Bruce W. Carter VA Medical Center in Miami. “We found that compared to patients who received two doses of the vaccine, having the third dose of a COVID-19 mRNA vaccine was associated with a more than 80% reduction in overall COVID-19 infection, an 80% reduction in symptomatic COVID-19, and an 80% reduction in moderate/severe or critical COVID-19, with a 100% reduction in death from COVID-19.”

The finding that those receiving the third dose were 100% less likely to get severe or critical COVID-19 during the delta and omicron surges was remarkable, according to Dr. John, who led a study published last year in *JAMA Internal Medicine* that found COVID-19 mRNA vaccine responsiveness was lower and slower in patients with cirrhosis. In fact, studies have shown that in general, chronic liver disease, particularly the more severe liver disease called decompensated cirrhosis, is associated with decreased responsiveness to several commonly used vaccines, including hepatitis B, pneumococcal, and influenza vaccines.

Third Dose Crucial to Overcome Diminished Response

The findings from the latest study suggest it is crucial that people with cirrhosis receive the third dose of a COVID-19 mRNA vaccine to help overcome the diminished vaccine response typically seen in cirrhosis patients who have received only two vaccine doses, Dr. John said.

The authors also reported that three doses of the Pfizer



BNT162b2 were superior to three doses of the Moderna mRNA-1273 vaccine.

This is much-needed information, given the limited inclusion of cirrhosis and chronic liver disease patients in the clinical trials that resulted in mRNA COVID-19 vaccine approvals.

“Clinicians have to rely on post-approval, real-world data like this to guide their cirrhosis patients,” Dr. John said. “The University of Miami and the Miami VA have led the body of literature on COVID-19 vaccines in cirrhosis with several key publications on the topic. It is important to remember that cirrhosis is the 11th leading cause of death and the 15th leading cause of morbidity worldwide. Studying COVID-19 in cirrhotic patients and including this population in clinical trials is crucial to achieving immunity through vaccination globally.”

Miller School co-authors on the study include medical student Akash Doshi and surgical oncologists Seth A. Spector, M.D., and Elizabeth Paulus, M.D.

Content Type Article