

Bepirovirsen Offers a Functional Cure for Hepatitis B

1 in 5 people treated with the experimental medication achieved sustained viral suppression and loss of hepatitis B surface antigen.

May 29, 2026 By [Liz Highleyman](#)

Bepirovirsen, a novel treatment from GSK, led to a functional cure in nearly 20% of chronic hepatitis B patients treated for six months, according to study results presented this week at the [European Association for the Study of the Liver Congress \(EASL 2026\)](#) in Barcelona and published in [The New England Journal of Medicine](#). The injectable medication has been submitted to the Food and Drug Administration (FDA) and could be approved this fall.

“These Phase III data represent a major step forward in the search for a finite treatment for chronic hepatitis B. For patients who currently face long-term therapy, achieving functional cure after a defined course of treatment could fundamentally change expectations for care,” presenter Seng Gee Lim, MD, of the National University Health System in Singapore, said in an [EASL news release](#). During his presentation, he suggested that bepirovirsen could “change the landscape of hepatitis B treatment.”

Nucleoside/nucleotide antivirals such as tenofovir and entecavir can control hepatitis B virus (HBV) replication indefinitely, but they rarely lead to a functional cure, indicated by sustained HBV DNA viral suppression and loss of hepatitis B surface antigen (HBsAg) for at least six months after the end of treatment. Achieving a functional cure lowers the risk of long-term complications, including [cirrhosis](#) and [liver cancer](#), and patients no longer need to take daily antivirals.

Bepirovirsen is an antisense oligonucleotide that both interferes with HBV replication by binding to viral mRNA and stimulates an immune response, potentially enabling the immune system to gain control of the virus. Bepirovirsen does not eliminate a form of HBV DNA hidden in the nucleus of liver cells, so it produces a functional cure rather than a so-called sterilizing cure.

“Today’s standard of care for chronic hepatitis B imposes a heavy burden on patients and healthcare systems, and rarely delivers a functional cure,” the study’s first author, Jinlin Hou, MD, of the Guangdong Institute of Hepatology in China, said in a [GSK news release](#). “With recent guidelines now prioritizing functional cure, these new data could represent an important advance.

Combined with improved testing and diagnosis, this innovation has the potential to improve the lives of millions living with chronic hepatitis B.”

The Phase III B-Well trials enrolled adults with chronic hepatitis B in 29 countries who were currently on stable antiviral therapy with a suppressed viral load (below 20). At study entry, about 40% were on entecavir (Baraclude) and about 60% were taking tenofovir disoproxil fumarate (Viread), tenofovir alafenamide (Vemlidy) or another tenofovir formulation.

B-Well 1 ([NCT05630807](#)) included 981 participants and B-Well 2 ([NCT05630820](#)) included 857 people. In the combined study population, about 70% were men, and the median age was approximately 50 years. Two thirds were Asian, a quarter were white, about 5% were Black and about 8% had Latino ethnicity. The participants had not yet progressed to liver cirrhosis, and more than 90% had an alanine aminotransferase (ALT) liver enzyme level below the upper limit of normal. Baseline HBsAg levels ranged up to 3,000 international units per milliliter, but nearly two thirds had 1,000 IU/ml or lower. More than 90% had negative hepatitis B ‘e’ antigen (HBeAg) status. People with hepatitis C, hepatitis D or HIV coinfection were excluded.

Participants in both trials were randomly assigned to receive bupirovirsen or a placebo, administered by subcutaneous injection once weekly for 24 weeks after two initial loading doses, while staying on their antivirals. Eligible patients who maintained viral suppression, achieved undetectable HBsAg and had normal ALT stopped their antivirals at 48 weeks, with follow-up continuing through 72 weeks. Like an analytical treatment interruption in HIV cure trials, stopping antivirals carries some risk, but hepatitis B generally does not progress as fast and the damage is not as severe compared with HIV.

Results from the two trials were similar: 20% of B-Well 1 participants and 19% in B-Well 2 achieved a functional cure at 72 weeks in the bupirovirsen groups. What’s more, nearly half of bupirovirsen recipients fell to an HBsAg level of 100 IU/ml or less one year after the end of treatment. In comparison, no one in the placebo groups achieved sustained viral suppression and HBsAg loss.

Functional cure rates were higher for people who started with lower HBsAg levels. The benefit was greatest for those who started with an HBsAg level below 1,000 IU/ml, who saw a 26% functional cure rate. But only 5% to 10% of patients with 1,000 to 3,000 IU/ml at baseline were functionally cured. People who experienced large ALT increases—an indicator of flaring liver inflammation—were also more likely to be cured.

These findings are a considerable improvement over those seen in a smaller [Phase IIb trial reported in 2022](#). In that study, people who received various doses and durations of bupirovirsen, with or without antivirals, had an overall functional cure rate of about 10%.

Bupirovirsen was generally safe and well tolerated. While a majority of people reported some adverse events in both the treatment and placebo groups, serious adverse event rates were low (7% and 4%, respectively). However, severe (grade 3 or higher) adverse events were substantially more frequent in the bupirovirsen groups compared with the placebo groups (16% versus 3%). Injection site reactions were the most common side effect overall, while elevated ALT was the

most frequent grade 3 event among bepirovirsen recipients (6%). Lim suggested that ALT elevation was an indicator that bepirovirsen was working well. Only 3% of bepirovirsen recipients stopped treatment due to adverse events.

“The B-Well trials represent a major step toward a functional cure for HBV infection, and bepirovirsen is an attractive option for selected patients,” Anna Lok, MD, of the University of Michigan Ann Arbor, wrote in [an editorial accompanying the study report](#). “The durability of HBsAg loss has to be confirmed with longer follow-up, and alternative therapies are needed for other patients, such as those with cirrhosis or a baseline HBsAg level above 3,000 IU/ml. Ultimately, curative therapies must be simple, safe, accessible and affordable to benefit the 240 million persons worldwide who are living with chronic HBV infection.”

[GSK announced last month](#) that the FDA has accepted a New Drug Application submission and granted priority review for bepirovirsen. It has Breakthrough Therapy and Fast Track status, intended to speed up review of investigational medications that have the potential to be a substantial improvement over existing therapies. An approval decision is expected by October 26, 2026.

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