

HBV JOURNAL REVIEW

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Hepatitis B

Can Kissing Transmit Hepatitis B? Dutch Researchers Suggest It's Possible

A report in the November 2005 issue of the *European Journal of Gastroenterology and Hepatology* reopens the debate about whether kissing can transmit hepatitis B virus (HBV). If proven true, this transmission mode could account for the 20% of hepatitis B infections that appear to have no source, Dutch researchers suggest.

There has been debate whether kissing, especially deep or vigorous kissing, might transmit the virus. To date, U.S. Centers for

Disease Control and Prevention officials have suggested that kissing *cannot* spread HBV.

The researchers determined that people with high viral load (HBV DNA) in their bloodstream indeed have HBV DNA in their saliva and urine, though at levels roughly half of what is in their blood. They examined 150 chronically infected patients.

“A high, non-linear correlation was shown between HBV DNA in (blood) and saliva and between (blood) and urine,” they noted. “The potential infectivity of these body fluids may provide an explanation for the 20% of cases of infection obtained through horizontal transmission for which the origin of infection

is yet unknown.”

The study may bolster arguments for universal hepatitis B immunization of adults. Currently, the government recommends that only children in the United States be vaccinated.

Phase II Study Finds Entecavir Helps Lamivudine-Resistant Patients

A study that tested the effectiveness of the antiviral entecavir (Baraclude) in hepatitis B patients who developed viral resistance to lamivudine (Epivir-HBV) found the drug was most effective at the 1 mg daily dose.

Viral resistance

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occurs when HBV with certain mutations are able to replicate despite antiviral treatment, and they eventually become the dominant virus.

The report, published in the October 2005 issue of *Gastroenterology* and authored by a multinational team of researchers, studied 182 patients with hepatitis B e antigen (HBeAg)-positive and -negative patients who had not responded to lamivudine, or developed viral resistance to the drug.

Patients were switched to either 1, 0.5, or 0.1 mg of entecavir, while others continued on lamivudine, for up to 76 weeks. At week 24, patients receiving 1.0 mg (79%) or 0.5 mg (51%) of entecavir had undetectable HBV DNA levels, compared with those receiving lamivudine (13%).

After 48 weeks, HBV DNA declines were 5-fold, 4.4-fold and 2.8-fold in patients receiving entecavir at 1.0, 0.5, and 0.1 mg doses respectively. Those on lamivudine experienced only a 1.3-fold drop in viral load.

More entecavir

patients achieved normal alanine aminotransferase (ALT) at 1.0, 0.5, and 0.1 mg doses (68%, 59%, and 47%, respectively) than on lamivudine (6%).

One patient developed viral resistance to entecavir at the 0.5-mg dosage.

Shorter In-Hospital Recovery After Liver Biopsy Poses No Threat to Patients

Researchers, studying 3,214 patients who received liver biopsies at the University of Florida medical center, found that a one-hour, in-hospital recovery period is all that was needed after a biopsy, during which a small sliver of liver tissue is withdrawn through a needle. Currently, patients are kept anywhere from four hours to over night in the hospital after the operation.

Writing in the September 2005 issue of the journal of *Clinical Gastroenterology and Hepatology*, the researchers reported

that the majority of complications occur within one hour of the procedure. The shorter in-hospital recovery time saves about \$240 per patient.

“A shorter observation time after ambulatory percutaneous liver biopsy is safe and might facilitate the physician's ability to optimally utilize procedural space and ancillary staff in a busy ambulatory care unit,” they recommend.

Living Donor Liver Transplantation Successful in Children with Hepatitis B

A study of 13 children who received living-donor liver transplants for liver cancer found this transplant procedure confers a high survival rate.

The study, published in the December 2005 journal of *Pediatric Transplantation*, followed 13 children, six of whom had chronic hepatitis B-related liver tumors. Seven children received transplanted livers, while four died

while waiting for livers from cadavers.

The one- and 4-year survival rates were significantly higher in transplanted children than non-transplanted children. No patient had recurrence of liver tumors 36 months after the operation. The researchers concluded, “Living-donor (transplant) avoids the risk of tumor progression and transplant ineligibility in these children.”

Interferon Gamma Reduces Liver Fibrosis in Hepatitis B Patients

Chinese researchers treated 54 hepatitis B patients who had fibrosis with interferon gamma (diammonium-glycyrrhizinate and potassium-magnesium aspartate) over nine months to see if this interferon, known for its anti-fibrotic powers, reduced liver inflammation. There was also a 29-patient control group.

The “hepatic fibrosis score” was significantly reduced in 63% of interferon patients, compared to

24.1% in the control group.

The decline in fibrosis, “might be attributed to decreased transforming growth factor-beta signaling via phosphorylated Smad2 and reduced number of activated, alpha-smooth muscle actin positive hepatic stellate cells,” researchers suggested in an article published in a recent issue of the journal of *Clinical Gastroenterology and Hepatology*.

Are Hepatitis B Vaccine Boosters Needed? Lancet Researchers Says No

Are HBV vaccine boosters needed? Italian researchers studied the level of hepatitis B surface antibodies (anti-HBs), as well as hepatitis B core antibodies (anti-HBc) that indicate past infection, in 1,212 children and 445 Air Force recruits one decade after they were vaccinated.

Individuals with anti-HBs concentrations at 10 IU/L or more were

considered to have enough antibodies to ward off infection. Protective anti-HBs concentrations were retained in 779 children and 398 recruits. Researchers recorded antibodies of less than 10 IU/L in 433 children (36%), and 48 (11%) recruits.

One child and four recruits were positive for anti-HBc, but negative for HBsAg and HBV DNA. Antibody concentrations were higher in recruits than in children.

The authors wrote in the October 2005 issue of *Lancet*, “Strong immunological memory persists more than 10 years after immunization of infants and adolescents with a primary course of vaccination. Booster doses of vaccine do not seem necessary to ensure long-term protection.”

No Clear Direction Discerned in Lamivudine-Interferon Trial

A team of Greek researchers treated 36 patients, with “e”

antibodies (anti-HBe) with conventional interferon (three injections weekly) and daily doses of lamivudine (100 mg) for 12 months, followed by just lamivudine.

According to their report published in the November 2005 issue of the *Journal of Gastroenterology and Hepatology*, 35 patients (97%) responded well within the 12 months. Four patients (11%) cleared HBsAg and developed anti-HBs.

After interferon was discontinued, 13 patients (36%) experienced a resurgence of HBV DNA. The cumulative rates of viral breakthrough at the end of 1, 2, 3 and 4 years of treatment were 0%, 14%, 32%, and 59%, respectively.

“Combination therapy appears to be effective and may also delay the selection of lamivudine-resistant variants,” researchers wrote, “However, controlled trials are definitely warranted to clarify the potential benefits of combination antiviral treatment over monotherapy.”

HBV DNA Tests at Week 12 Indicate If Conventional Interferon Will Work

To reduce the amount of treatment, doctors have been looking for a way to determine as early as possible whether interferon will work in hepatitis B patients. A team of researchers, reporting in the November 2005 issue of the *Journal of Viral Hepatitis*, studied how HBeAg and HBV DNA might be measured at treatment week 8 and 12 to determine if treatment will work.

Their study showed that if quantitative HBV DNA testing before treatment begins and at week 12 shows a decrease in viral load, then treatment will succeed.

HBIG and Lamivudine Before Transplant Stops HBV from Infected Organs

An article in the September 2005 issue of *Liver International*

recommends treating transplant patients with hepatitis B antibodies (hepatitis B immune globulin or HBIG) and the antiviral lamivudine before the operation, if they are to receive a living donor liver with hepatitis B infection.

The Japanese researchers studied 22 patients who received livers that tested positive for anti-HBc and HBV DNA. Before and after their transplants, they were treated with HBIG and lamivudine.

Over the follow-up period, which spanned years, none of the patients became infected with hepatitis B.

Researchers Develop New Protein That Improves Interferon's Benefits

A team of researchers at the Washington University School of Medicine have found a way to make interferon, which helps the immune system fight infection, more effective.

The researchers modified a protein called Stat1, which

relays signals from interferon at the cell surface to genes in the cell's nucleus. The modification improved Stat1's response to interferon, according to a report in the Oct. 7, 2005 issue of the *Journal of Biological Chemistry*.

The strengthening of Stat1's response may help viral hepatitis patients who benefit from interferon, but struggle with the drug's side effects resulting from high dosages.

"We reasoned that if we could enhance the way interferon produces its beneficial defensive effects, the body could respond to its normal level of interferon and receive enhanced benefit without side effects," researchers said.

Hormone Therapy Appears Safe for Hepatitis-Infected, Menopausal Women

A study, published in the September/October issue of the journal *Menopause*, examined the impact of hormone therapy, used to relieve severe hot flashes and other menopause-

related symptoms, in women with chronic viral hepatitis B and/or C.

The researchers followed 81 menopausal women, infected with hepatitis B or C, who were treated with hormone replacement therapy for five years.

Another 95 women with viral hepatitis, who suffered no severe menopause-related problems, were used as controls.

Liver enzyme levels, which increase when liver cells are damaged or die, were measured annually. Researchers reported that liver enzymes did not significantly vary with time in hormone-treated and untreated women.

HBV-Infected Children Treated with Conventional Interferon Have Tougher Bones

A study, published recently in *Gastroenterology*, reported that chronically-infected children treated with interferon alpha end up with sturdier bones after therapy. Turkish

researchers suggest more research is needed to gauge the impact of interferon on children's bone structure and growth.

They analyzed bone mineral density and other levels in 54 children with chronic hepatitis B, ranging in age from four to 15 who were treated with interferon alone, or in combination with lamivudine for six months. They also followed 50 healthy children of similar ages.

They found that bone mineral density in the treated children's femurs were higher than in healthy children and may suggest, "that interferon therapy in children with chronic hepatitis B could contribute indirectly to prevent hip osteoporosis."

Lamivudine and/or Adefovir Helps Patients with Severe Liver Damage

South Korean researchers, writing in the October 2005 issue of the *Journal of Korean Medical Science*, reported that

patients with decompensated liver function (extensive cirrhosis and abdominal fluid build-up) improve when treated with continued lamivudine or in combination with the antiviral adefovir (Hepsera). To date, it has not been clear if continued antiviral treatment is safe in patients with severely damaged livers.

Forty-six HBeAg-positive patients with decompensated liver function and lamivudine-resistant HBV received adefovir alone or with ongoing lamivudine for 24 weeks. Researchers reported that 83% receiving just adefovir and 86% receiving combination antivirals had undetectable HBV DNA. ALT levels normalized in 78% and 82%, respectively.

There were no significant differences in viral load, ALT and improvement of liver health between the two groups.

HIV-HBV Coinfected Do Well on Tenofovir During First 12 Months

Researchers, reporting in the October 2005 issue of the journal of *Antiviral Therapy*, followed 43 patients, infected with both HIV-1 and HBV, for more than six months to see if they developed HBV viral resistance to tenofovir, an antiviral that appears effective against both viral infections.

They reported that most patients do not develop HBV resistance to tenofovir during the first 12 months of treatment, however two of the 43 developed viral resistance to tenofovir. Researchers believe that HBV that can resist the antiviral lamivudine may also be able to resist the antiviral effects of tenofovir.



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- Testing Positive for Hepatitis B: Now What?
- What Are the Occupational Risks of Hepatitis B?
- What's New in Hepatitis B Treatment
- When to Disclose Your HBV Infection

Easy B's

- 100 Infants
- 100 People
- Acute Hepatitis B
- Biopsy
- Core Antigen
- HBeAg-Negative Hepatitis B
- Hepatitis B and Alcohol
- Hepatitis B Treatment
- Sex and Hepatitis B
- Tattoos
- The Liver
- What Are Antivirals?
- What Do Antigens & Antibodies Mean?
- What Is AFP?
- What Is Alt?
- What Is the "e" antigen (HBeAG)?
- What Is Interferon?

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