

B HEPATITIS B

INFORMED

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CAUSE FOR A CURE

We are a national non-profit organization dedicated to finding a cure and improving the quality of life for those affected by hepatitis B worldwide.

HBF CRYSTAL BALL CELEBRATION

Pennsylvania Governor Mark Schweiker Distinguished Honoree

The Hepatitis B Foundation's annual Crystal Ball sparked with distinguished guests who gathered to honor **Pennsylvania's 44th Governor, Mark Schweiker** on April 3rd in Doylestown, PA. The Hepatitis B Foundation (HBF) was proud to present the *Founders' Award 2004* to Governor Schweiker for his outstanding leadership in advancing its mission.

State and national legislators brought added luster to the gala - congressman **Jim Greenwood**, state senator **Joe Conti**, and state representative **Chuck McIlhinney** were on hand to show their support of the foundation's work.

"Everyone in this room knows that Governor Mark Schweiker has made historic contributions to the state and to the foundation in particular," said **Timothy Block, PhD**, president of the HBF, during the award ceremony. "He presided over and nurtured one of the greatest economic expansions."

"Governor Schweiker did all of this, while bringing a national awareness, pride and integrity to the office, which was exemplified by his actions during the rescue of the Pennsylvania miners," Block added. "It was powerfully symbolic to see a high-tech Governor in a miner's hat extending his hand during the terrible crisis ... those are unforgettable images."

Schweiker's commitment to helping people continued through his very last public appearance as governor when he presented a check for \$7.9 million to the Hepatitis B Foundation and Delaware Valley College to establish a biotechnology research center

dedicated to viral hepatitis. He is the first Pennsylvania governor to ever speak publicly about the problem of hepatitis B and the need to find a cure.

In accepting the *Founders' Award*, Governor Schweiker modestly exclaimed, "Don't thank me, thank the citizens of Pennsylvania who gave me the privilege to make this gift." He continued, "We are making history here. The funding will provide 'real' help to make lives better...to save lives."



Mark Schweiker, 44th Governor of Pennsylvania receives HBF *Founders Award 2004*.

Schweiker described a trade mission to India where he saw firsthand the enormous problem of hepatitis. "I am so proud to know that research to cure this terrible disease is being done right here in my home town," he said. "Based on the Hepatitis B Foundation's impressive track record, I am confident they will make a huge global impact," concluded Schweiker.

Governor Schweiker's support continues a long tradition of Pennsylvania's leading role in hepatitis B research. In this state, **Dr. Baruch Blumberg**, HBF scientific advisor, discovered the hepatitis B virus for which he won the Nobel Prize; manufacturers of the two hepatitis B vaccines reside in Philadelphia; and the Hepatitis B Foundation was founded here. Hopefully, the HBF's new biotech research center will help complete the circle of discovery started in Pennsylvania.

Thus, it is with distinct gratitude and pride that the Hepatitis B Foundation recognizes the extraordinary commitment that Governor Mark Schweiker has made towards advancing its *Cause for a Cure*.



Message from the President

Timothy M. Block, Ph.D.

Taking Care of Our Young

Hepatitis B is not usually considered a childhood disease, despite the fact that most adults who are living with chronic hepatitis B were infected at birth or as a young child. Unlike many common childhood infections, hepatitis B infections in early childhood unfortunately often become a chronic adult infection.

The Hepatitis B Foundation is very aware of young people who suffer from complications due to the hepatitis B virus. Indeed, we were established in response to this need.

In children, sometimes hepatitis B complications are social. Sometimes they are medical. On occasion, they are even life threatening (read about young Adrian Elkins on page 12). In any case, chronically infected children deserve special attention and make a powerfully compelling argument that hepatitis B cannot be ignored or forgotten.

Our summer *B Informed* newsletter puts children and hepatitis B into focus where the issues are complex and emotionally charged. An interview with two pediatric liver specialists highlights the sometimes touchy, but important dialogue between concerned parents and their child's doctor (see page 7). A young woman living with hepatitis B reflects on her dating experiences as a teen and young adult (see page 9).

There has been great success in protecting many of our young from hepatitis B. However, there continue to be millions of children worldwide for whom the vaccine is too late. For their sakes, the medical issues of managing and treating children with hepatitis B must be addressed.

Although progress is being made for adult patients (read about new hepatitis B treatment guidelines on pages 5 and 6), treatment options and national guidelines for children are still very limited.

The article *A Call to Action* highlights the fact that hepatitis B scientists are fast disappearing, which raises the alarming question: who will provide the important discoveries needed to find a cure for all the millions of children chronically infected with hepatitis B? Currently, none of the approved drugs for hepatitis B provide a complete cure.

Although these issues cannot be resolved in our newsletter, the Hepatitis B Foundation can step up to the plate and help lead the discussion. Needless to say, this is just a beginning. More answers are needed, more help must be provided.

A Call to Action

Where Have All the HBV Scientists Gone?

Where have all the hepatitis B scientists gone? That is the urgent question raised by the few remaining scientists committed to hepatitis B. There used to be many such scientists, but today there are only a handful of scientists studying the hepatitis B virus (HBV). Although this group isn't down on the mat - yet - the declining pool of HBV scientists is an alarming prospect.

Where is the next generation of HBV therapies going to come from if we don't recruit more scientists?

The perception that universal vaccination has eliminated the problem of hepatitis B is probably a significant factor behind this scientific decline. Why spend money on treatment research for a problem that is already solved?

Prevention is important in eradicating hepatitis B. But what will happen to the 400 million people who are already chronically infected with HBV? For them, the vaccine is too late. Many are children.

Despite an effective vaccine, there are still 1 million deaths worldwide due to hepatitis B. This is a staggering number of deaths due to one small virus. Clearly, more research is needed.

A Call to Action

The hepatitis B community must aggressively combat the perception that this disease is solved because of the success of universal vaccination.

Patients, health care providers, scientists, and advocacy groups concerned about this disease must stop the declining public health and scientific interest in hepatitis B.

What Can We Do?

- Promote awareness at the National Institutes of Health of the urgent need to recruit new scientists and increase funding for hepatitis B research.

- Contact state and national legislators to specifically include hepatitis B in legislative bills that are being considered for viral hepatitis.

- Recruit reporters, influential friends and family members to help with advocacy efforts.

Together, we can work to raise the national profile of hepatitis B and make sure the 400 million individuals living with chronic HBV are not forgotten.

The Hepatitis B Foundation is committed to these basic goals and asks for YOUR help! Contact us with your ideas at info@hepb.org or call (215) 489-4900.

HBV Drugs: One Size Doesn't Fit All

With three U.S. Food and Drug Administration (FDA) approved anti-HBV drugs on the market, and several more in the pipeline, doctors and patients face an often confusing array of questions: How are these drugs different? What drug is best? Which drug should be used first?

The FDA-approved drugs for chronic HBV are interferon alpha (Intron A), lamivudine (EpiVir-HBV) and adefovir (Hepsera).

Many people who are chronically infected with HBV have high levels of viral DNA, elevated liver enzymes and biopsies that show liver damage. All three drugs are aimed at somehow reducing the amount of virus and the liver enzymes in these individuals. However, the drugs have different characteristics.

Scientists don't know precisely how interferon works against HBV, though many suspect it boosts the immune system, or may make the virus more visible to the immune system, said **W. Thomas London, MD**, senior member at Fox Chase Cancer Center in Philadelphia.

According to Dr. London, interferon is effective only about 30 to 40 percent in patients who receive this drug, but its effects frequently are long-lasting, if not permanent. Patients usually take interferon for just four to six months; however, the drug is expensive and has a host of side effects that include flu-like symptoms.

Lamivudine and adefovir halt viral replication, explains London. While the two drugs are effective - lamivudine and adefovir can lower liver enzymes and HBV DNA levels in essentially all patients taking therapy - neither antiviral drug works indefinitely. The longer a patient takes one of the drugs, the greater the risk of resistance.

For example, resistant viruses appear in about 15 to 20 percent within a year of taking lamivudine, and after two years, the figure reaches 30 percent, continued London. Within three to four years, two-thirds of patients who have taken the drug develop resistance. Only 30% of patients have a long-term response. Fortunately, adefovir works on lamivudine-resistant virus.

If either of these drugs is halted prior to seroconversion, the patient's virus levels often skyrocket again. "In choosing which drug to take, you have to consider all of this," said **Adrian Di Bisceglie, MD**, professor of internal medicine at St. Louis University, "and there is controversy among liver specialists regarding which drug to choose."

Physicians generally fall into two camps in respect to these drugs. On the one side are those - including Dr. Di Bisceglie - who argue for trying interferon initially. If that is not effective, then they give the patient either lamivudine or adefovir.

The other group, Di Bisceglie said, tends to bypass interferon because of the side effects, opting instead to start with lamivudine or adefovir because either will cause some viral suppression. This is the current trend, he added. "Doctors in this group, however, are increasingly likely to put the patient on adefovir first, despite the fact that it is twice the price of lamivudine."

Still, London reports many physicians choose lamivudine as first-line therapy because it is virtually non-toxic and brings HBV DNA and liver enzyme levels down rapidly, usually within 3 months. If resistance develops, patients are switched to adefovir since it is effective against lamivudine-resistant virus.

New Kids on the Block

"There are some extraordinarily promising agents coming out in the next few years that look to be superior to what we have now," said **Brent Korba, PhD**, professor of virology at Georgetown University Medical Center.

Four new drugs - entecavir, emtricitabine (FTC), telbivudine (LdT) and clevudine - are in Phase III trials, the last step before potential approval by the FDA. These antivirals are similar to lamivudine and adefovir in that they also prevent viral reproduction.

According to Dr. Korba, emtricitabine (FTC) is closest to FDA approval, perhaps by the end of the year. The drug is a sister to lamivudine, though slightly superior. Drug resistance appears a little slower to develop. Entecavir is also far along in development. Di Bisceglie said entecavir is potent and has a lower rate of resistance than lamivudine. It's also effective against lamivudine-resistant virus.

Korba sees two drugs - telbivudine and clevudine - as having the potential to impact treatment. "Telbivudine looks to be the first really big drug in terms of potency," he reports, "and studies show the drug results in much greater drops in viral DNA levels than do currently available drugs."

Clevudine, under development by a South Korean company and in early Phase III trials, may even be more powerful. Its anti-HBV effects may last longer than any other drug in the pipeline once therapy is stopped.

When evaluating drugs, Di Bisceglie explains that physicians consider potency and rate of developing viral resistance. Potency entails how fast and how much a drug can lower the levels of HBV DNA and liver enzymes. He suggested the best solution might be to use drugs in combination, but studies have only recently begun to look at this.

"It's good that patients have choices," he said. "When choosing hepatitis B therapy, it has to be based on the patient, the physician preference and the individual's disease."

Steve Benowitz is a science writer from Philadelphia, PA.

HBV Drug Watch *HBV Compounds in Development* Summer 2004

| FAMILY/DRUG NAME | MECHANISM | COMPANY | WEBSITE | STATUS, USA |
|--|-------------------------------|--|------------------------------|---|
| INTERFERONS Mimic naturally occurring infection-fighting immune substances produced in the body | | | | |
| Intron A (Interferon alpha-2b) | Immunomodulator | Schering-Plough, Madison, NJ | www.schering.com | FDA Approved 1991 |
| Pegasys (PegInterferon alfa-2a) | Immunomodulator | Roche, Switzerland | www.roche.com | Phase III, outside USA |
| NUCLEOSIDE ANALOGUES Interfere with the viral DNA polymerase enzyme used for hepatitis B virus reproduction | | | | |
| Epivir-HBV (Lamivudine) | Inhibits viral DNA polymerase | GlaxoSmithKline, Phila., PA | www.gsk.com | FDA Approved 1998 |
| Hepsera (Adefovir Dipivoxil) | Inhibits viral DNA polymerase | Gilead Sciences, Foster City, CA | www.gilead.com | FDA Approved 2002 |
| Emtricitabine (FTC) | Inhibits viral DNA polymerase | Gilead | www.gilead.com | Phase III / NDA Filed |
| Entecavir | Inhibits viral DNA polymerase | Bristol-Myers Squibb, Princeton, NJ | www.bms.com | Phase III / to be Filed |
| Clevudine (L-FMAU) | Inhibits viral DNA polymerase | Bukwang, Seoul, Korea | www.bukwang.co.kr | Phase III, South Korea |
| Telbivudine (LdT) | Inhibits viral DNA polymerase | Idenix, Cambridge, MA | www.idenix.com | Phase III |
| Valtorcitabine (monoval LdC) | Inhibits viral DNA polymerase | Idenix | www.idenix.com | Phase II |
| Amdoxovir (DAPD) | Inhibits viral DNA polymerase | Gilead | www.gilead.com | Phase II |
| Elvicitabine (ACH-126,443) | Inhibits viral DNA polymerase | Achillion New Haven, CT | www.achillion.com | Phase II (Central & Eastern Europe) |
| RCV (Racivir) | Inhibits viral DNA polymerase | Pharmasset, Tucker, GA | www.pharmasset.com | Phase II, Europe |
| MIV-210 | Inhibits viral DNA polymerase | Medivir, Sweden | www.medivir.com | Phase I, U.K. |
| Remofovir B (Hepavir B) | Inhibits viral DNA polymerase | Valeant, Costa Mesa, CA | www.valeant.com | Phase I, Europe, USA |
| Pentacept (L-3'-FD4C) | Inhibits viral DNA polymerase | Pharmasset | www.pharmasset.com | Preclinical |
| Robustaflavone (ALS-920) | Inhibits viral DNA polymerase | Advanced Life Sciences, Woodbridge, IL | www.advancedlifesciences.com | Preclinical |
| LB80380 | Inhibits viral DNA polymerase | LG Life Sciences, Seoul, Korea | www.lgls.co.kr/eng | Preclinical |
| NON-NUCLEOSIDE ANTI-VIRALS | | | | |
| BAM 205 | "Small Molecule" | Novelos, Newton, MA | http://novelos.com | Phase II/III China |
| HepeX-B (XTL-001) | Human monoclonal antibodies | XTL Biopharm, Rehovot, Israel | www.xtlbio.com | Phase II, Israel & U.S.A. Orphan drug approval in US for liver transplants |
| UT 231 *Discovered by HBV scientists | Small Molecule | United Therapeutics Silver Spring, MD | www.unither.com | Preclinical HBV (Phase II HCV) |
| HepBzyme | Nuclease resistant ribozyme | Ribozyme, Boulder, Co | www.rpi.com | Preclinical |
| Bay 41-4109 | Inhibits viral nucleocapsid | Bayer AG, Germany | www.bayer.com | Preclinical |
| NON-INTERFERON IMMUNE ENHANCERS Boost T-cell infection-fighting immune cells and the body's natural interferon production | | | | |
| HE2000 | Hollis-Eden | San Diego, CA | www.holliseden.com | Phase II, Singapore |
| Theradigm | Immune Stimulator | Epimmune, San Diego, CA | www.epimmune.com | Phase II |
| EHT899 | Oral Viral Protein | Enzo Biochem, NY, NY | www.enzobio.com | Phase II, Israel |
| Zadaxin (Thymosin alpha-1) | Immune Stimulator | SciClone, San Mateo, CA | www.sciclone.com | Phase II w/lamivudine Orphan drug approval in US for liver cancer |
| HBV DNA Vaccine | Immune Stimulator | PowderJect, Oxford, U.K. | www.powderject.com | Phase I |
| SpecifEx-HepB | Immunological Cell Transfer | CellExSys, Seattle, WA | www.cellexsys.com | Preclinical/Phase I |
| HBV DNA Vaccine | Immune Stimulator | Jefferson Center, Doylestown, PA | Tel: 215-489-4949 | Preclinical |
| POST-EXPOSURE AND/OR POST-LIVER TRANSPLANT TREATMENT | | | | |
| BayHep B | HBV immunoglobulin | Bayer U.S., Pittsburgh, PA | www.bayer.com | FDA Approved 1977 |
| Nabi-HB | HBV immunoglobulin | Nabi, Boca Raton, FL | www.nabi.com | FDA Approved 1999 |
| Anti-hepatitis B | HBV immunoglobulin | Cangene, Ontario, Canada | www.cangene.com | FDA Filing 2001 |

Sincere thanks to Brent Korba, Ph.D. (Georgetown University Medical Center, Rockville, MD) and Raymond Schinazi, Ph.D. (Emory University Medical School, Atlanta, GA) for their regular review of the HBV Drug Watch Update.

AASLD Practice Guidelines Chronic Hepatitis B: Update of Recommendations

Anna S.F. Lok, MD, and Brian J. McMahon, MD
Hepatology (March 2004)

The first guidelines for the management and treatment of chronic hepatitis B in adults were developed and approved by the American Association for the Study of Liver Diseases (AASLD) in 2001. In light of new advances, these guidelines were updated and published in *Hepatology* (March 2004).

A summary of the article's concluding treatment recommendations and Table 1 that compares the three approved treatments for chronic HBV is provided below. The full article is available on the AASLD website at www.aasld.org.

Recommendations for the Treatment of Chronic Hepatitis B

[The] careful balance of patient age, severity of liver disease, likelihood of response, and potential adverse events and complications is needed before treatment is initiated. Except for patients with contraindications or previous non-response to specific therapy, either interferon alpha (IFN), lamivudine, or adefovir may be used as initial therapy for patients with compensated liver disease.

1. HBeAg-positive patients with elevated ALT levels and compensated liver disease should be observed for 3 to 6 months for spontaneous seroconversion from HBe-antigen to HBe-antibody prior to initiation of treatment.

2. Patients who meet the criteria for chronic hepatitis B should be evaluated further with a liver biopsy (serum HBV DNA $>10^5$ copies/mL and persistent or intermittent elevation in aminotransferase levels).

3. Patients in the inactive hepatitis B surface antigen (HBsAg) carrier state should be monitored every 6 to 12 months, as liver disease may become active even after many years of quiescence.

4. Patients with HBeAg-positive chronic hepatitis B:

- ALT greater than 2 times normal, or moderate/severe hepatitis on biopsy. These patients should be considered for treatment. Treatment may be initiated with IFN, lamivudine or adefovir as the 3 treatments have similar efficacy.

- ALT persistently normal or minimally elevated (<2 times normal). These patients should not be initiated on treatment.

- Children with elevated ALT greater than 2 times normal. These patients should be considered for treatment if ALT levels remain elevated at this level for longer than 6 months. Both IFN and lamivudine are approved treatments for children with chronic hepatitis B.

5. Patients with HBeAg-negative chronic hepatitis B should be considered for treatment (serum HBV DNA $>10^5$ copies/mL, elevated ALT >2 times normal or moderate/severe hepatitis on biopsy). Treatment may be initiated with IFN, lamivudine, or adefovir. In view of the need for long-term treatment, IFN or adefovir is preferred.

6. Patients who failed to respond to prior IFN therapy may be retreated with lamivudine or adefovir if they fulfill the criteria listed above.

7. Persons who develop breakthrough infection while on lamivudine should be treated with adefovir if there is worsening of liver disease, if they had decompensated cirrhosis or recurrent hepatitis B after liver transplant, or if they require concomitant immunosuppressive therapy.

8. Patients with compensated cirrhosis are best treated with lamivudine or adefovir because of the risk of hepatic decompensation associated with IFN related flares of hepatitis.

9. Patients with decompensated cirrhosis should be considered for lamivudine treatment. Adefovir may be used as an alternative to lamivudine, although it has not been evaluated as a primary treatment in these patients. If adefovir is used, close monitoring of renal function every 1 to 3 months should be performed. Treatment should be coordinated with transplant centers. IFN should not be used

in patients with decompensated cirrhosis.

10. For patients with an inactive HBsAg carrier state, antiviral treatment is not indicated.

Table 1. Comparison of Three Approved Treatments of Chronic Hepatitis B

| Indications | IFN- α | Lamivudine | Adefovir |
|--------------------------|---------------|---|-------------------------------------|
| HBeAg+, normal ALT | Not indicated | Not indicated | Not indicated |
| HBeAg+ chronic hepatitis | Indicated | Indicated | Indicated |
| HBeAg- chronic hepatitis | Indicated | Indicated | Indicated |
| Duration of Treatment | | | |
| HBeAg+ chronic hepatitis | 4-6 months | ≥ 1 year | ≥ 1 year |
| HBeAg- chronic hepatitis | 1 year | >1 year | >1 year |
| Route | Subcutaneous | Oral | Oral |
| Side Effects | Many | Negligible | Potential nephrotoxicity |
| Drug Resistance | - | $\sim 0\%$, year 1 $\sim 70\%$, year 5 | None, year 1 $\sim 3\%$, year 2 |
| Cost* | High | Low | Intermediate |

Abbreviations: IFN- α , interferon alpha; HBeAg, hepatitis B e antigen. * Based on treatment duration of 1 year.

A Treatment Algorithm for the Management of Chronic HBV Infection in the U.S.

Emmet B. Keeffe, Douglas T. Dieterich, Steve-Huy, B. Han, Ira M. Jacobson, Paul Martin, Eugene R. Schiff, Hillel Tobias, and Teresa L. Wright. *Clinical Gastroenterology and Hepatology* (February 2004)

A panel of U.S. hepatologists developed a comprehensive treatment algorithm for chronic hepatitis B, published in *Clinical Gastroenterology and Hepatology* (February 2004), which supports the AASLD updated guidelines (see p. 5). It aims to assist treating physicians in answering the practical questions of HBV management based on available evidence; however, where data are lacking, the panel relied on clinical experience and consensus expert opinion.

A summary of the treatment recommendations is offered below, including Table 5 that compares interferon alpha (IFN), lamivudine and adefovir. The full article is available on the HBF website at www.hepb.org/02-0316.hepb.

- **The goal of therapy for patients with chronic HBV infection is to prevent the progression of liver disease to cirrhosis and HCC [liver cancer].** Because HBV replication is implicated in the outcome of chronic HBV infection, the primary aim of therapy is durable suppression of serum HBV DNA to the lowest levels possible.

- **The threshold HBV DNA level for determination of candidates for therapy** is $\geq 10^5$ copies/mL for patients with HBeAg-positive chronic HBV infection. Patients also should have elevated ALT levels and/or evidence of hepatitis on liver biopsy. A lower serum HBV DNA threshold is needed for patients with HBeAg-negative chronic hepatitis B and those with decompensated cirrhosis.

- **IFN, lamivudine, and adefovir are all approved as initial therapy for chronic hepatitis B.** The issues to

consider are efficacy, safety, resistance, method of administration, and cost.

- **IFN has the advantage of a finite duration of treatment,** durable response (in patients who respond), and lack of resistance, but it is expensive to use, has to be administered by injection, and has many side effects.

- **Lamivudine is well tolerated, with an excellent safety profile and good efficacy,** but its long-term use is limited by the development of resistance. Thus, it might be a good choice for patients with high baseline ALT levels with a $\geq 50\%$ chance of HBeAg loss with only 1 year of therapy and for patients receiving short-term antiviral prophylaxis during chemotherapy.

- **Patients requiring therapy for longer than 1 year probably are treated best with adefovir,** with its much lower incidence of resistance. Adefovir has similar efficacy to lamivudine and is well tolerated. It has the advantage of a delayed and very low rate of resistance development and therefore is preferred for long-term use. However, its cost is greater than that of lamivudine.

Several areas require further study. Combination therapy may prove to be more effective than monotherapy in suppressing viral replication and may decrease or delay the incidence of drug resistance. Several large studies are underway exploring the use of two nucleoside/nucleotide antivirals or an antiviral plus peginterferon in compensated patients.

Table 5. Comparison of Interferon, Lamivudine, and Adefovir Dipivoxil in HBeAg-Positive Chronic Hepatitis B

| Parameter | Interferon (untreated) 12–24 wk | Lamivudine (placebo) 52 wk | Adefovir dipivoxil (placebo) 48 wk |
|---|---|---------------------------------|---------------------------------------|
| Serum HBV DNA loss ^a (%) | 37 (17) | 44 (16) | 21 (0) |
| Serum HBV DNA log ₁₀ reduction | Not available | Not available | 3.52 log (0.55) |
| HBeAg loss (%) | 33 (12) | 32 (11) | 24 (11), 44 at 72 wk |
| HBeAg seroconversion (%) | 18 ^b | 16–18 (4–6), 50 at 5 yr | 12 (6), 23 at 72 wk |
| HBeAg loss (%) | 11–25 at 5 yr in white patients | Insufficient data | Insufficient data |
| ALT normalization (%) | 23 ^b | 41–72 (7–24) | 48 (16) |
| Histological improvement (%) | Poor data | 49–56 (23–25) | 53 (25) |
| Development of resistance (%) | No | 14–32, increasing to 69 at 5 yr | 1.6 at 2 yr |
| Durability of response after HBeAg seroconversion (%) | 80–90 at 4–8 yr | 77 at 37 mo | Not available |
| Defined treatment course | Yes | Unclear | Unclear |
| Safety | Poor | Same as placebo | Same as placebo |
| Tolerability | Poorly tolerated | Well tolerated | Well tolerated |
| Dosing regimen | 5 MU/d or 10 MU 3 times wk for at least 16 wk (injection) | 100 mg once daily (oral) | 10 mg once daily (oral) |
| Cost/mo. (\$) | 1420 | 260 ¹²⁴ | 450 ¹²⁴ |

NOTE. All data are at 1 year unless otherwise stated.

HBeAg, hepatitis B e antigen; HBV, hepatitis B virus; HBeAg, hepatitis B surface antigen; ALT, alanine aminotransferase; MU, million units; LLD, lower limit of detection.

^aInterferon and lamivudine, hybridization assay (LLD, 10^5 copies/mL); adefovir, polymerase chain reaction assay (LLD, 400 copies/mL).

^bDifference between treated and untreated.



Children and Hepatitis B Treatment A Parent - Doctor Dialogue

Few relationships are packed with as much anxiety, power imbalance and fear as that of parent and doctor. There are all the uncomfortable dependencies of the patient-doctor relationship, with the added emotional wild card of a child.

The desire to ensure that your child is getting the best care possible, combined with the complexity of a hepatitis B diagnosis, can even further complicate the doctor-parent dialogue. Adding to the anxiety is the absence of clear treatment guidelines for children, so treatment decisions can vary dramatically from doctor to doctor.

To help ease this tension, parents are encouraged to learn as much as possible about hepatitis B and the treatment options. Knowledge is a powerful tool that can enhance the parent-doctor dialogue.

Currently, there are three approved drugs for chronic hepatitis B, but only the first two drugs listed below are approved for children:

1. **Interferon alpha** (Intron A) is an immune-enhancing drug that boosts the immune system to attack the hepatitis B virus (HBV) and is given by injection three times a week.
2. **Lamivudine** (Epivir-HBV) is an antiviral drug that helps stop the virus from reproducing and is given as a pill once daily.
3. **Adefovir** (Hepsera) is an antiviral drug approved only for adults, but clinical trials for children are scheduled to begin late 2004.

To help answer common questions parents ask about hepatitis B treatment, two well-respected pediatric liver specialists were interviewed: **Philip Rosenthal, MD**, is medical director of the Pediatric Liver Transplant Program and Pediatric Hepatology at the University of California, San Francisco, California. **Michael R. Narkewicz, MD**, is medical director at The Children's Hospital Pediatric Liver Center in Denver, Colorado.

Should my child be treated, and if so, what factors are important in making this decision?

Dr. Rosenthal: At this time, there are no specific guidelines or recommendations for pediatric treatment of hepatitis B. What I recommend is based on what I know from my many years of experience. There are clearly different opinions out there, which is why it's important for parents to see someone who has experience treating children with hepatitis B.

Most doctors will treat if a young patient has elevated ALT [*this refers to alanine aminotransferase, which is a liver*

enzyme measured by a blood test]. The drugs currently approved for the treatment of chronic hepatitis B are recommended for individuals whose ALT levels are 1.5 to 2 times greater than normal. That doesn't mean some doctors don't do other things, but it does mean children probably won't have a good response to treatment.

To further complicate the issue, ALT can be normal and a child can have cirrhosis [*a type of liver damage that can occur due to the hepatitis B virus attacking the liver cells*], but the chance that the child will respond to treatment when ALT isn't elevated is unlikely. Some people will treat in that situation, but in my opinion, it may not be in the best interest of the patient.

Editor's Note: When the immune system detects HBV, it responds by attacking infected liver cells. When liver cells are damaged during this immune response, they release an enzyme called alanine aminotransferase or ALT into the bloodstream. Elevated ALT levels can signal an "activated" immune system that might be able to effectively attack the virus with the help of drugs such as interferon, which boosts the immune system, and antiviral drugs like lamivudine or adefovir that prevent the virus from reproducing. When the quantity of hepatitis B virus declines, so does the risk of progressive liver damage.

Dr. Narkewicz: It's also important to know that the hepatitis B virus can become resistant to oral antiviral medicines, particularly lamivudine. If you use this medicine in a child whose ALT levels are not elevated, there is a lower chance of effectiveness and success. You could also increase the chance that a strain of hepatitis B virus that can resist this antiviral medication will develop. Later, if you need an antiviral drug because your child's liver disease is worsening, it may not be an option because resistance to that antiviral drug has developed.

When do you recommend that my child get a liver biopsy?

Dr. Rosenthal: I recommend a liver biopsy if I am considering treatment or if I am suspicious that there is another potential cause of liver disease. In children, I am very reluctant to ever treat a child without a pre-treatment biopsy. A liver biopsy is also useful for staging the amount of inflammation or degree of scarring in a child's liver.

Dr. Narkewicz: I recommend a liver biopsy only if I'm considering treatment. Generally, if the ALT is elevated for more than six months, I begin to consider a liver biopsy. I agree that a liver biopsy should be performed before treatment.

Continued on Page 8

Why isn't there a universal standard for measuring the ALT? Depending on the lab, my child's ALT could be normal or above normal and this result may determine whether my child is treated or not.

Dr. Rosenthal: You're right, every lab will produce different ALT results because the measurements and instruments vary, which is why it's wise for a patient to consistently use the same lab. In fact, what is a healthy level of ALT is different in men, women and children, and right now there are all sorts of normal reference ranges for ALT levels.

For example, to qualify for interferon treatment, studies generally say ALT levels should be 1.5 to 2 times the normal range. But the upper limit of normal isn't defined because it depends on the individual lab that is used. Depending on the lab, normal could be 30 or 50, so I simply go with the 1.5 to 2 times what the lab considers normal.

Editor's Note: The need to standardize other lab values such as HBV DNA levels is a major topic of discussion in the medical community because treatment decisions are based on these test results.

How do you respond to parents who demand their children be treated when you recommend no treatment?

Dr. Rosenthal: No matter what parents argue, the risk-benefit ratio must be in favor of treatment for the child. If you're giving a child an interferon injection three times a week for six months, I want assurance that it will help the child. If you're going to give a child a lamivudine pill every day for a year, you want a reasonable chance of success. Parents must certainly be part of a treatment discussion. Everyone has to decide together, but it's the physician who must decide if conditions favor treatment.

Why is treatment so confusing and do the approved drugs provide a cure?

Dr. Rosenthal: When it comes to ear infections, we expect a 100 percent cure rate. Unfortunately, there is nothing yet that produces a total cure for hepatitis B. Even with the best drugs, if 30 to 40 percent of children who are treated successfully "seroconvert" [also known as "HBeAg seroconversion," which refers to the loss of the hepatitis B e-antigen and development of e-antibody], achieve normal ALTs and lower HBV DNA, you consider the treatment to be doing a good job.

When parents hear about new drugs, very often the articles only address HBeAg seroconversion, ALT, and HBV DNA levels. But that's not truly a cure. What really is a cure is getting rid of the virus itself, which is reflected by the loss

of hepatitis B surface antigen and development of surface antibodies.

Dr. Narkewicz: Even after treatment has been successful and HBeAg seroconversion has resulted, life is not magically normal for parents or children again. In most cases, patients should continue to be screened for liver cancer [if they are still infected and test positive for the hepatitis B surface antigen].

Why don't parents hear more about clinical trials for children with hepatitis B? Clinical trials are a great way to get the latest treatment for your child at no cost.

Dr. Rosenthal: Doctors are conducting clinical trials for children, but HIPAA (Health Insurance Portability and Accountability Act) prevents us from advertising for participants without prior approval from our hospital's institutional review board. Every medical center that participates in a clinical trial must have its recruitment methods approved.

If a trial were funded by the National Institutes of Health (NIH), it would be posted on their clinical trials website (www.clinicaltrials.gov). If a trial is privately funded [for example, by a drug company], it won't be included on the NIH website. Nonprofit organizations can announce both types of funded clinical

trials, such as the Hepatitis B Foundation on its website at www.hepb.org/clinicaltrials.

What I would recommend is that parents ask their doctors to find out about current and upcoming clinical trials. Then, their doctor can find out if the child meets the entry criteria for enrollment.

Conclusion

Although there is little consensus on when treatment should start or which drug should be used initially, Drs. Rosenthal and Narkewicz have provided insights that can help steer parents and doctors in the right direction.

Parents are encouraged to find doctors who are knowledgeable about hepatitis B, will answer their questions thoroughly, and are proactive in finding out about the latest treatments and clinical trials.

Building a strong parent-doctor relationship based on information and trust will give a child the best health care team possible.



Christine Kukka is a health writer and hepatitis B advocate from Portland, Maine.

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Dating and Hepatitis B

A Young Woman's Story

Balancing privacy and disclosure, while safeguarding everyone's health, is not easy in the world of dating and hepatitis B. When teens and young adults infected with hepatitis B begin dating, they bring two challenging issues to the relationship: a sexually transmitted infection and the dilemma of disclosing the infection.

"You wonder if a potential partner will stay with you if you tell him about your infection," said Melissa, a 24 year-old graduate student who has had hepatitis B since birth. As a young woman who has experienced the complexities of growing up with chronic hepatitis B, she knows reconciling the need to disclose her condition with the realities of dating is difficult. It can be fraught with mistakes, denial, and hard-won wisdom.

"Having hepatitis B didn't really affect me much in high school," Melissa recalled. Fortunately, Melissa's state required hepatitis B immunizations for all public school students. "My doctor also helped convince me that hepatitis wasn't a big deal, as long as I avoided drinking, drugs and was careful with my intimate relationships. I feel he oversimplified my disease, but he probably thought it would be easier for me to cope with as a teenager," she added.

Telling someone that you have chronic hepatitis B is a risk at any age. For teens and young adults, it can feel even scarier.

During college, Melissa tried to avoid the whole topic and convinced herself that her infection wasn't that serious. She never told her dates or partners about her hepatitis B by making up excuses such as, "It's not the right time," or "He's probably already vaccinated against hepatitis B."

In graduate school, Melissa developed a serious relationship, but didn't initially tell her boyfriend about her infection. "I took all the necessary sexual precautions with him and rationalized to myself that we didn't have much to worry about since he was probably vaccinated in college. Well, that was a mistake. His college didn't require hepatitis B immunizations," she said.

"When I finally told him, he felt angry and betrayed," she recalled, "and I felt absolutely awful that I hadn't made sure he was vaccinated before we became sexually active. It was a stressful time for both of us and he was immediately tested. We're still together today, but I think back about how stupid I was, and I very much regret not telling him earlier."

She continued, "If I were to start all over again, I would tell a boyfriend about my infection when I knew that we were



going to become intimate. I would try to choose a good time to tell him, and also freshen up on all the facts about hepatitis B so I could answer his questions."

Today, Melissa is wiser from her experiences. She offers some practical tips for teens and young adults with hepatitis B who are dating (or want to tell others at school or work).

Before you tell someone, try practicing what you will say ahead of time. For example, "This is incredibly hard for me to say, but before our relationship goes any further, there's something important I would like to share with you. I have hepatitis B, and I am working hard to stay healthy. I am telling you because I want you to stay healthy, too."

Talk about your feelings and describe how scary it is for you to share this information. Help the person try to understand what you are going through. Remind the person that you are trusting them with personal information that you would like to keep confidential.

Ask if your partner (or friend) has been vaccinated against hepatitis B. If not, explain that a safe and effective vaccine, administered in three shots over a six-month period, can protect them against hepatitis B.

"Don't think that having hepatitis B is the end of your social life," Melissa added. "If someone doesn't want to be with you because of this, don't blame yourself. Think of it as a blessing in disguise. You don't want to waste any time or heartache on that person anyway."

Navigating the complexities of how and when to disclose hepatitis B is challenging, but happy endings are possible.

Christine Kukka is a health writer and hepatitis B advocate from Portland, Maine.

Fast Fact

An estimated one-third of those in the U.S. with chronic HBV acquire their infections as infants or as young children.

Foundation at the Forefront

HBF e-Newsletter Has Winning Results

The HBF launched its e-Newsletter, **B News...You Can Use**, in April 2004 with winning results. According to our feedback survey, the readers were patients (46%), health care providers (45%), and researchers (9%). Of greatest interest was treatment information (97%) followed by news about the HBF (95%), vaccine updates (92%), and research articles (84%). These results confirm that our e-Newsletter is reaching the right people with the right news. The initial issue was sent to 3,000 people and already we have gained a 10 percent increase of new subscribers!



B News... You Can Use is just one of the new features that was funded by our grant from the NIH National Library of Medicine to make it even easier for people to find hepatitis B information quickly and easily on our website. Subscribe to the HBF's free monthly e-Newsletter at www.hepb.org.

NYC Pediatric Viral Hepatitis Network

On March 11, **Henry Pollack, MD**, assistant professor of pediatrics at the New York University School of Medicine, gave an insightful seminar at the HBF on the viral dynamics of hepatitis B in children. His studies show that a child up to 10 years of age will have high levels of virus with relatively normal ALTs; however, in adolescents the viral load generally begins to decrease with a corresponding increase in ALT. These factors are important considerations for HBV management and treatment. Dr. Pollack is also founder and director of the **NYC Pediatric Viral Hepatitis Network**, which coordinates the care of more than 300 children with chronic HBV and HCV among almost 20 hospitals and community health care facilities in New York City. The Network has developed an HBV Registry to track pediatric patients as they grow up and will soon add adults and pregnant women. For more information about this dynamic initiative, visit www.hepnet.org.

Basketball Superstars Promote HBV Prevention

NBA legends **World B. Free** and **Julius "Dr. J" Erving** recently joined members of the healthcare community, which included the Hepatitis B Foundation, to raise awareness about the importance of hepatitis B vaccinations in the teen community during **B Free Week** that was sponsored by GlaxoSmithKline and held April 12 - 18 in Philadelphia, PA, and Camden, NJ.

Currently, hundreds of teens are infected with the hepatitis B virus every week. **Molli Conti**, HBF vice-president and director of outreach, and **Sarah Bergin**, outreach associate, along with the HBF mascot **OLiver**, joined the sport celebrities for the well-attended kick-off event. Participants had the opportunity to pose for a photo with the NBA legends while learning how and where to obtain the hepatitis B vaccination. Educational materials were made readily available for teens, their parents, and healthcare providers. All were encouraged to spread the word ... not the disease.

CHIC Cultural Diversity

The HBF participated in the Chinese Health Information Center (CHIC) cultural diversity programs held at Thomas Jefferson University Hospital in Philadelphia on April 15 - 16. The two-day forum, titled *"Cultural Competency in Health and Social Services,"* focused on providing insight into the culturally diverse approach needed to best serve Asian immigrants. Communication techniques were introduced to medical professionals to help improve the exchange of health information. **Molli Conti**, **Fonta Reilly**, HBF information manager, and **Chari Cohen**, HBF program coordinator met with specialists who work with populations challenged by language and cultural barriers to medical care. Hepatitis B is a serious health problem in the Asian community; therefore, improving access to information and care is essential towards preventing, screening and treating those at risk for this serious liver infection.

A Woman For All People

Welcome to **Peggy Farley** who joined the HBF outreach team to assist in the expanded programs and services offered to patients and families, health care professionals, and the public. Peggy brings an extensive background of non-profit healthcare and marketing experience to the position. She chose to work with the HBF because she was attracted to the mission of making a difference in people's lives. "What you do really matters at the end of the day, and I want my work to be for the good of all people," she added. With this positive attitude and commitment, the HBF is delighted that Peggy has chosen to use her talents in our worldwide outreach efforts.





Governor Mark Schweiker (center, holding award) with HBF Board of Directors at the Crystal Ball, April 3, 2004.



(L to R) Tina Greenwood, congressman Jim Greenwood and state senator Joe Conti enjoy a light moment at the Crystal Ball.



(L to R) Nancy Rosen and Joel Rosen, HBF board member, with friends.

Viral Hepatitis Update for Primary Care Physicians

The HBF partnered with the Delaware Valley Hepatitis Treatment, Research and Education Center (HepTREC) and the Temple University School of Medicine to provide an in-depth professional CME program titled, *"Viral Hepatitis: Update for Primary Care,"* held April 17th. The well-attended program was designed to inform physicians and other health care providers with updates on risk factors, new therapies and vaccination recommendations, as well as education about secondary disease complications of viral hepatitis.

Molli Conti spoke about the importance of hepatitis B and the HBF's role in promoting education and patient advocacy. The Centers for Disease Control and Prevention estimates that approximately 110,000 of the six million Americans infected with hepatitis B or C reside in the Philadelphia area.

AIM for the B

May is national **Hepatitis Awareness Month**. In recognition of this month, the Hepatitis B Foundation was invited to help host *AIM for the B: Awareness, Involvement and Mobilization for Chronic Hepatitis B*, a forum designed to raise awareness about the 1.25 million Americans who suffer from chronic hepatitis B. To increase the profile of hepatitis B as an important health issue in the U.S., this media campaign sponsored by Bristol-Myers Squibb was initiated to engage key audiences. Presentations will be given in New York City, Washington, DC, and San Francisco.

Chari Cohen, MPH, HBF program coordinator, and **Steve Bingham**, HBF board member and co-owner of the internet Hepatitis B Information and Support Listserv, spoke eloquently about the impact of hepatitis B on the individual, community and the world. **Drs. Ira Jacobson, Emmet Keefe, James Lewis and Huy Trinh** provided expert medical information about hepatitis B.

The Sound of Music Adds Cachet to *Cause for a Cure*

The HBF is proud to announce that **David Kim, Concertmaster of the Philadelphia Orchestra**, has joined our awareness campaign to promote hepatitis B education and research. He is a renowned musician who brings tremendous cachet and name recognition to the *Cause for a Cure*. On June 22, Mr. Kim and the Philadelphia Orchestra will give a special concert, "Mozart in Paris", to benefit the HBF. We are extremely grateful for the generosity of Mr. Kim's time and musical talent to our mission.

Mr. Kim began playing the violin at the age of three and received his bachelor's and master's degrees from the Juilliard School. In 1986, he was the only American violinist to win a prize at the International Tchaikovsky Competition in Moscow. Mr. Kim has been Concertmaster of the Philadelphia Orchestra since 1999 and is a sought-after guest soloist with highly acclaimed orchestras around the world.



Adrian's Gift The Answer to Cancer Race

Running was Adrian Elkin's passion. As the youngest of five children, Adrian grew up running, trying to catch up with his older brothers and sisters. In high school, he discovered cross-country running and continued running after he went to college.

During Adrian's sophomore year at Southern Oregon University, he was unexpectedly diagnosed with liver cancer due to chronic hepatitis B. This became his toughest race ever. Adrian courageously underwent months of surgery, chemotherapy, and related treatments to beat the cancer. During the last two months of his life, he devoted his time to organizing a race to raise awareness about liver cancer and hepatitis B.

Adrian and his family started work on the first *Answer to Cancer Race* in June 2003, racing against time. In six incredible weeks, they were ready. On August 3, the day of the race, he fired the starter's pistol and the runners were off. Eight days later, Adrian Elkins died at the age of 20 years old.

Adrian began life as an abandoned baby at a Calcutta orphanage. At three months, he was adopted by the Elkins family from McMinnville, Oregon. "He was the perfect little boy," his mother Judy recalled, and "we doted on him."

Although he appeared healthy, Adrian and his parents always knew he was a carrier of hepatitis B due to a blood transfusion he received as a premature infant in India. However, they never expected the disease to manifest itself as a rare type of liver cancer called hepatocellular carcinoma (HCC). "Doctors said he was at little risk of problems because of the hepatitis B," his mother said.

Judy Elkins now wishes that they had been on the lookout for cancer, with regular screening and specialized medical care. But the possibility seemed so remote. "We heard what we wanted to hear," she said. "Now we know more than we wish we had to know."

On the first day of his sophomore year in college - Sept. 30, 2002 - Adrian awoke feeling funny. In retrospect, he realized that he had felt tired all summer. He had attributed his symptoms to his busy schedule of working and training for a major relay.

As he returned to his dorm room after breakfast, he began having a lot of pain and difficulty breathing. A friend drove him to the hospital emergency room, and at first, physicians thought Adrian was having a gallbladder attack. Then, an ultrasound test revealed that his liver was extremely enlarged. A liver biopsy was done.

Days later, the family learned that Adrian had hepatocellular carcinoma, or liver cancer. It was devastating news. Still, there was hope. Adrian was an excellent candidate for surgery to remove the cancer, since it appeared to involve only the right lobe of his liver. He started his first round of chemotherapy while waiting for surgery.

Sadly, the operation brought more bad news. The cancer wasn't confined to the right lobe after all - the left lobe was affected, too. Worse, the cancer had also spread to his lungs. Adrian battled his disease for ten months.

Adrian's final gift is the *Answer to Cancer Race* that will help generations of patients in their fight against liver cancer. He turned his passion for running into a legacy of caring that will endure.

Editor's Note: We thank the Elkins family for sharing their story with the Hepatitis B Foundation and extend our admiration for Adrian's commitment and dedication to educating the public about liver cancer and hepatitis B. This article was excerpted from their emails and press releases on their Answer to Cancer Foundation at www.answertocancer.org.



Adrian Elkins 1983 - 2003



Please join the Elkins Family! 2nd Annual Answer to Cancer Race August 8, 2004

Beautiful Willamette Valley, Oregon's wine country
Register at www.answertocancer.org

The Hepatitis B Foundation is proud to have been selected as one of the charitable organizations to benefit from the *2nd Annual Answer to Cancer Race*. Last year's race raised \$24,000 with more than 240 runners and walkers who participated.

The *Answer to Cancer Foundation* is a new 501c3 tax-exempt, non-profit organization created to raise funds for research and education; increase public awareness; and provide information about primary liver cancer.



Speaking Personally

Steve Bingham
Co-Owner of the Internet Hepatitis B Information and Support List (HB-L)

HepEconomics

Hepatitis B treatment is expensive. Luckily, when I was taking interferon, my group insurance policy came through 100%. That was one less thing to worry about at a time when I needed to avoid as much stress as possible.

Those who don't have good insurance must find other ways to finance treatment. My heart goes out especially to those who live overseas in developing countries, where one month of treatment can cost a big chunk of their yearly income.

Chronic hepatitis B sometimes requires long-term treatment. Individuals on oral antiviral medications must plan carefully in order to avoid running out of money or pills after just a couple of months. You can't get by with drug samples from your doctor or save for a 30-day supply at a time.

How to pay for treatment is a frequent topic of discussion among patients. I'd like to share some of the resourceful ways that subscribers to our HB-Listserv have accessed treatment.

Find a hepatitis B clinical trial. You might be able to get into a government or privately funded clinical trial if you fit their sometimes narrow enrollment criteria. You can find a list of HBV trials on the Hepatitis B Foundation's website at www.hepb.org/clinicaltrials. Or, visit www.clinicaltrials.gov, a website maintained by the National Institutes of Health.

Contact a pharmaceutical company directly. Besides getting the latest information on their drug trials, you can ask how to apply for their "Compassionate Use" or "Expanded Access" programs. Try to develop a relationship with someone in the company, so that you're more than just a name to them. For example, ask your doctor to introduce you to the pharmaceutical representative that he or she deals with.

Check into local government programs. Many state health departments and welfare offices are coming up with programs to assist people who fall somewhere between not having health insurance and not qualifying for Medicaid. Most state insurance departments have consumer assistance programs to help you understand insurance laws and your rights, such as the protection you have if you or your employer switch insurance companies. Call your local state representative or senator for more information and assistance with your health insurance.

Work to improve your present health insurance coverage. Learn how to petition your insurance company or HMO. Some companies won't cover HBV drugs, especially those that haven't been approved by the FDA. Your doctor

can be an ally in getting coverage for a drug that's not approved or considered "off-label", such as pegylated interferon, tenofovir, or a combination of HBV drugs.

Visit websites that offer the option of buying medications outside of the U.S. Patients and patient groups are increasingly using the Internet to purchase medications from other countries. If you buy drugs from Canada, there is a good chance you will get the same quality that's sold in the U.S. If buying from other countries, however, there is a danger of receiving out-dated or bogus drugs.

Investigate patient drug-buying cooperatives. Be aware that some of these organizations provide medications that have been donated by other patients who, for one reason or another, have a surplus. Such re-distribution seems helpful, but it's also illegal.

Check the HBV Research List regularly for updates (to subscribe, send a blank message HBV_Research-on@mail-list.com). Recently, **Sheree Martin**, owner of the list, posted a notice about a new website promising "one-stop-shopping" for government and private patient-assistance programs that provide discounted or free drugs offered by the drug companies. It's a useful site sponsored by the drug industry lobbying group PhRMA and connects to a database paid for by the pharmaceutical companies. Be sure to type in the trade name of the drug (i.e. EpiVir-HBV, Hepsera, or Intron-A), not the generic name. Visit www.helpingpatients.org

As always, I'm amazed at the creative ways my friends with chronic hepatitis B manage to fund their treatment. Of course, for some of these folks, treatment can mean the difference between life and death.

My hope is that in the near future, new and better access programs will provide the medications we need to live successfully with chronic hepatitis B - and ultimately, to defeat this disease.

Best Wishes, Steve

Internet Support Groups



Hep B Information and Support List www.hblist.org

To subscribe, send a blank email to:
hepatitis-b-on@mail-list.com

Well-supervised list with useful information and lively exchanges between supportive members. For those with HBV, their caregivers, and anyone interested in or affected by HBV are invited to participate.

HBV Adoption Support List

<http://www.onelist.com/community/hbv-adoption>

For adoptive or biological parents of children with HBV. This is a restricted list to protect the privacy of parents and children, and requires pre-approval by the list owner to join.

Hepatitis B Foundation HBV Clinical Trials
www.hepb.org/clinicaltrials

National Institutes of Health Clinical Trials
www.clinicaltrials.gov

Centerwatch Clinical Trials
www.centerwatch.com/studies/cat79.html

Lamivudine and Adefovir to Treat Chronic Hepatitis B

This NIH study will evaluate the safety and effectiveness of lamivudine plus adefovir versus adefovir alone to treat chronic hepatitis B infection. Candidates may not have received lamivudine treatment in the past 6 months or prior treatment with adefovir and must not be taking other anti-viral treatments for their hepatitis. *Contact: NIH Patient Recruitment at 1-800-411-1222 or email: prpl@mail.cc.nih.gov*

Telbivudine versus Lamivudine in Adults with Decompensated Chronic Hepatitis B and Evidence of Cirrhosis

Idenix Pharmaceuticals is conducting this research study to see if the investigational medication, LdT (Telbivudine), is safe and effective in the treatment of decompensated hepatitis B infection over two years. The results for patients taking LdT will be compared to results for patients taking lamivudine (Epivir-HBV). *Contact: Gloria Dubuc at 617-995-9814 or email dubuc.gloria@idenix.com*

Evaluate Efficacy, Safety and PK of Adefovir Dipivoxil Liquid Suspension in Patients with Chronic Hepatitis B

Gilead Sciences is sponsoring a multi-center phase 3, open-label, parallel-group study designed to evaluate the efficacy, safety and pharmacokinetics of adefovir dipivoxil liquid suspension in patients with chronic hepatitis B and varying degrees of renal impairment. *Contact: Anant Jain at 650-522-5523 or email ajain@gilead.com*

Columbia-Presbyterian Medical Center Entecavir Study

The safety of Entecavir (BMS 200,475) will be evaluated in adults with chronic HBV. Those co-infected with HIV are not eligible to participate. *Contact: Ms. Cabilia Gomez at 212-305-3839 (New York, NY).*

Comparison of Telbivudine versus Lamivudine in Hepatic Compensation

This is a trial for adults with compensated chronic hepatitis B who have never been treated. *Contact: Debora Goldman, RN, clinical trials coordinator for Dr. Douglas Dieterich at 212 241-7270 (Mt. Sinai School of Medicine, NY, NY).*

Comparison of Entecavir to Adefovir in Chronic HBV Patients with Hepatic Decompensation

A Phase IIIb comparative study of entecavir vs. adefovir in patients who have chronic hepatitis B and hepatic decompensation for up to 96 weeks. *Contact: Bristol-Myers Squibb toll-free at 1-866-892-1BMS.*

Phase II Comparison of Adefovir and Tenofovir for Lamivudine-Resistant HBV in Co-infections

This NIAID study will compare the combination of adefovir and lamivudine with the combination of tenofovir and lamivudine to determine which drug combination is most effective in people who are infected with both HBV and HIV. *Contact: NIH Patient Recruitment at 1-800-411-1222 or email prpl@mail.cc.nih.gov. Visit the HBF website at www.hepb.org for the locations and contact information in 12 states.*

Pilot Study of Telbivudine Treatment for HBV Prior to Starting Anti-HIV Drugs in Co-infected Patients

This NIAID study will evaluate telbivudine (LdT) for the treatment of hepatitis B in HIV infected patients. The primary aim of this study is to assess the safety of telbivudine alone and in combination with a lamivudine-based highly active antiretroviral therapy (HAART) regimen in patients coinfected with HBV and HIV. *Contact: Karen Savage, RN, CCRC, at 205-975-7925 (kgsavage@uab.edu) at the Univ. of Alabama.*

Treatment of Hepatitis in Patients Who are Triple-Infected With HIV, HBV and HCV

This NIAID phase II study will investigate the safety and effectiveness of using adefovir, pegylated interferon, and ribavirin in patients with HBV, HIV, and HCV. All patients in this study must be taking lamivudine. *Contact: Karen Savage, RN, CCRC, at 205-975-7925 (kgsavage@uab.edu) at the Univ. of Alabama or M. Ray at 303-372-5535 (graham.ray@uchsc.edu) at the Univ. of Colorado Health Sciences Center.*

A Phase II Study of the Safety and Efficacy of Adding Entecavir to Current Lamivudine Therapy in HBV and HIV Co-Infected Patients

The purpose of this clinical research study is to assess the safety and effectiveness of adding entecavir in the treatment of adults with chronic hepatitis B infection who are co-infected with HIV and are already taking lamivudine. *Contact: Bristol-Myers Squibb toll-free at 1-866-892-1BMS.*

Prevention of Recurrent HBV After Liver Transplantation

Eligible patients for this study MUST be on a liver transplant waiting list or have already received a liver transplant for hepatitis B. HBIG, Epivir-HBV and Hepsera will be evaluated. *Contact: Doug Armstrong at darms@umich.edu or call 734-936-1712 at the Univ. of Michigan Medical Center.*

Resource Roundup



Hepatitis B Foundation

215-489-4900

www.hepb.org

info@hepb.org

Comprehensive website dedicated to hepatitis B. Facts, useful advice, Drug Watch, liver specialist directory, and a responsive email service. Includes *Chinese, Vietnamese, Korean, and Spanish Language Chapters*. Subscribe to our free e-newsletter *B News You Can Use*.

American Liver Foundation

1-800-GO-LIVER

www.liverfoundation.org

webmail@liverfoundation.org

Information about all liver diseases, including viral hepatitis. Fact sheets, legislative advocacy, research funding.

Asian Liver Center at Stanford University

650-725-4837

<http://livercancer.stanford.edu>

This website informs, updates, and educates people about hepatitis B and liver cancer among Asians and Asian-Americans. Information is available in English, Chinese and Korean.

Centers for Disease Control, Hepatitis Division

1-888-443-7232

www.cdc.gov/ncidod/diseases/hepatitis

The national authority for viral hepatitis information: disease facts, prevention, scientific studies and more.

CDC Hepatitis Immunization Hotline

1-800-232-2522 (English)

1-800-232-0233 (Spanish)

www.cdc.gov/nip

nipinfo@nip1.em.cdc.gov

Hepatitis B Research List

To subscribe, send a blank email to:

HBV_Research-on@mail-list.com

A free electronic research list maintained by Sheree Martin that provides abstracts, reports and notices.

Hepatitis B Research Archive Website

http://archive.mail-list.com/hbv_research.

Archived research bulletins posted on the Hepatitis B Research List, from 1998 until current year.

Hepatitis B Virus Page

<http://www.globalserve.net/~harlequin/HBV/index.html>

Maintained by Robert Garces, Ph.D. Candidate in Virology, at the University of Toronto.

HCV Advocate

sfhepcat@pacbell.net

<http://www.hcvadvocate.org>

One of the few HCV websites that also includes information about hepatitis B.

Hep C Connection

1-800-522-4372

www.hepc-connection.org

info@hepc-connection.org

Comprehensive information to assist Hep C-challenged individuals and their families.

Hepatitis Foundation International

1-800-891-0707

www.hepfi.org

mail@hepfi.org

Information about viral hepatitis, support groups, research articles, and education programs.

HepLink

www.heplink.org

A search engine that gathers comprehensive information about viral hepatitis.

Hepatitis Magazine

1-800-310-7047

www.hepatitismag.com

editor@hepatitismag.com

The only print magazine published bi-monthly for those affected by viral hepatitis.

Hepatitis Neighborhood

www.hepatitisneighborhood.com

Features a Town Hall with a Live Speakers Forum. Sponsored by Priority Healthcare Corporation.

HepTrec

1-866-HEPTREC

www.heptrec.org

The Delaware Valley Hepatitis Treatment, Research and Education Center (HepTREC) provides support group information, training and prevention programs in the greater Philadelphia area.

HIV and Hepatitis Treatment Advocates

www.hivandhepatitis.com

Professional online publication with updates, conference reviews, free teleconferences, and an e-mail service.

Immunization Action Coalition

651-647-9009

www.immunize.org

www.vaccineinformation.org

www.hepprograms.org

Comprehensive source of immunization information. The first website is targeted toward health professionals, the second is for the general public and the third highlights successful programs preventing viral hepatitis, "IAC Express" and "HEP Express" are free e-mail announcement services.

MEDLINEplus Health Information

www.medlineplus.gov

A goldmine of reliable health information from the world's biggest medical library of medicine, the National Library of Medicine. This database is maintained in collaboration with the NIH.

Memorial Sloan Kettering "About Herbs"

aboutherbs@mskcc.org

www.mskcc.org/aboutherbs

Objective information about herbs, their side effects, drug interactions, and links to scientific research. This site is maintained by experts at Memorial Sloan Kettering.

National Center for Complementary and Alternative Medicine

1-888-644-6226

www.nccam.nih.gov

Sponsored by the National Institutes of Health (NIH), this site contains databases galore and research articles.

Parents of Kids with Infectious Diseases

1-877-55-PKIDS (toll-free)

www.pkids.org

pkids@pkids.org

An excellent resource for parents and professionals. Pediatric clinical trials, research list and support listserv.

Calendar of Events



- June 25-27** **B-Informed Patient Conference 2004**
Hepatitis B Foundation, Asian Liver Center, and the Hepatitis B Info & Support Listserv
Asian Liver Center, Stanford, CA
Contact: (215) 489-4900 or info@hepb.org
www.hepb.org
- July 16** **Joseph Nagy Golf Tournament**
To benefit the Hepatitis B Foundation
Wedgewood Golf Course, Coopersburg, PA
www.hepb.org
- Aug 8** **2nd Annual Answer to Cancer Race**
To benefit the Hepatitis B Foundation
Answer to Cancer Foundation
Willamette, Oregon
www.answerforcancer.org
- Aug 26 - 27** **National Viral Hepatitis Summit**
Hepatitis Foundation International
Sheraton International BWI, Baltimore, MD
www.hepfi.org
- Oct 24-27** **International Meeting of the Molecular Biology of HBV**
Marine Biological Laboratory, Woods Hole, MA
Contact: Dr. Hu at jmhu@bu.edu
www.mbl.edu/housing/conferences/hbv_meeting.html

- Oct 29-Nov 2** **AASLD Annual Meeting**
American Association for the Study of Liver Disease
John B. Hynes Convention Center, Boston, MA
www.aasld.org
- Oct 30-Nov 2** **Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC)**
American Society for Microbiologists
Washington Convention Center, Washington, DC
www.icaac.org
- Oct 29-Nov 3** **ACG Annual Meeting**
American College of Gastroenterology
Gaylord Palms Resort and Convention Center, Orlando, FL
www.acg.gi.org
- Nov 2-3** **Therapies for Viral Hepatitis 2004**
International Medical Press
Sheraton Boston Hotel, Boston, MA
www.intmedpress.com/hepatitis
- Nov 4-5** **Princeton HBV Workshop**
Hepatitis B Foundation
Nassau Inn, Princeton, NJ
www.hepb.org
- Nov 12-14** **HBV Prevention and Management in Asian Americans**
American Liver Foundation
The Parker-Meridien Hotel, New York, NY
www.liverfoundation.org



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We are a national non-profit organization dedicated to finding a cure and improving the quality of life for those affected by hepatitis B worldwide.

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