

Focus on Co-Infection: Hepatitis C/HIV

SPECIAL ISSUE

Significance of HIV/HCV Co-Infection in the Disease Process Debated

By James C. Arvantes, Senior Consultant, Martin Medical Services

T•II CANN Editorial

Funds Must be Made Available to Treat Co-Infections and Opportunistic Illnesses

By: Gary Rose and William "Bill" Arnold

T•II CANN was created to advocate for access to the highest possible care for all people living with HIV (PLHIV). While our work remains centered on increasing resources for the AIDS Drug Assistance Program (ADAP) and base funding for Title II of the Ryan White CARE Act, the gravity of the relative lack of attention to the burgeoning death rates in people living with HIV that are attributable to hepatitis C - now widely believed to be the leading cause of death among American PLHIV - is frightening. The implications are clear. An American patient who may have a fairly good chance of accessing care and drugs for their HIV could easily lack access to drugs to treat their hepatitis C and, as a result, could die of liver failure even though their HIV infection was

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The Hepatitis C virus (HCV) progresses faster in some patients who are co-infected with HIV, leading to higher rates of end stage liver disease among these patients and making them prime candidates for HCV treatment, according to several doctors interviewed by *The Voice*.

HCV is a blood borne pathogen that takes years, even decades, to lead to cirrhosis and associated complications in non co-infected patients. The average length of time to cirrhosis in patients with HCV alone is 20 years, with an additional 10 years, or 30 years total possible, before the onset of liver cancer. But among some co-infected patients, disease progression is much faster, taking an average of 10 years to lead to cirrhosis and 15 years to develop into liver cancer, thus cutting in half the time to major illness, according to some physicians.

"We are not saying that every one with HIV and HCV is going to

progress faster," says Mark Sulkowski, MD, an Assistant Professor of Medicine at Johns Hopkins University School of Medicine in Baltimore, who primarily treats co-infected patients. "But they are at a greater risk of progressing and that is a wake up call in terms of action - testing, monitoring, and possibly initiating (HCV) treatment."

The federal government estimates that 2.7 million people are chronically infected with HCV in this country and that 30,000 to 50,000 new infections occur each year, though those numbers could be much higher.

Moreover, approximately 25 to 55 percent of the nation's HIV population, about 400,000 people, are co-infected with HCV. This is a significant number with profound repercussions for the care and treatment of both HIV and HCV. In the last few years, HCV has emerged as the leading cause of non-AIDS related deaths in HIV-infected patients. This has forced doctors to triage these patients to determine which disease is a priority for treatment.

"There are some patients who cannot tolerate antiretroviral therapy because their livers are so damaged,"

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comments Anne Spaulding, MD, Medical Program Director, Rhode Island Department of Corrections. "Sometimes, you have to treat just to get the liver healthy enough to tolerate antiretroviral therapy."

Within the context of HIV, HCV "acts as an opportunistic infection" becoming an aggressive disease that is seven times more likely to lead to cirrhosis and even death in co-infected patients than non co-infected patients, according to Sulkowski. HCV is an "incredibly variable disease," meaning that some people with HCV can live 50 years without ever experiencing complications while others develop cirrhosis and associated conditions at a much faster pace, he says.

Certain factors, though, accelerate disease progression - the ongoing use of alcohol, for example, and, in co-infected patients, low CD-4 counts. It should be emphasized, however, that much is still

unknown about the natural progression of HCV, particularly as it relates to HIV/HCV co-infection.

"We have very little knowledge about what to do with these co-infected patients," says David Bernstein, MD, Director of Hepatology at the North Shore University Hospital on Long Island, New York and Clinical Associate Professor of Medicine at the New York University School of Medicine. "There is almost no information out there."

Only a few years ago, the problem of HIV/HCV co-infection did not exist for most co-infected patients; the majority died long before their HCV manifested as active disease. With the advent of highly active antiretroviral therapy (HAART), people with HIV disease are living longer, making viral liver disease an increasing cause of morbidity and mortality for many co-infected patients.

"The whole reason we are even focusing on the topic of Hepatitis C is because our patients have increased longevity," stresses Barbara McGovern, MD, Assistant Professor of Medicine at the Tufts University School of Medicine outside of Boston. "Now, we have a new focus on a very serious problem and that is Hepatitis C."

Most of the data on co-infection is based on studies of hemophiliacs who contracted HIV and HCV through contaminated blood products during the 1980s and early '90s. This data, some doctors say, indicates that HCV progresses more rapidly in patients with HIV disease. The presence of HIV adds a full grade to the level of fibrosis, or scarring of the liver, based on a scale of one to four, with a four representing cirrhosis.

"We do a biopsy to give us a grade of fibrosis which is actually like a CD-4 count," explains hepatologist Douglas Dieterich, MD, Clinical Associate Professor of Medicine at the New York University School of Medicine and Chief of Gastroenterology and Hepatology at the Cabrini Medical Center in New York. "It tells us how far along the path someone is to cirrhosis. I

would venture to say that someone who would normally have a fibrosis score of one, would actually have a fibrosis score of two because of the co-infection."

"That person is then halfway to cirrhosis," Dieterich adds. "It accelerates the course of the disease by that much."

Other doctors reject that assessment, saying the data are far from conclusive on how fast someone with co-infection progresses to cirrhosis.

"I have seen a number of HIV co-infected patients who have no progression of HCV," says hepatologist Joanne Imperial, MD, an Associate Professor of Medicine at Stanford University Hospital in Palo Alto, California. "So there may be a population who are protected. We just don't know who they are."

Nearly all of the studies addressing HIV/HCV co-infection are retrospective in nature, not prospective, an important distinction with a direct bearing on the validity of the studies, says Imperial, who works in the liver unit at Stanford caring for co-infected patients. Prospective studies are conducted to provide reliable data in support of a medical hypothesis, giving them more "power and clout" than retrospective studies, stresses Imperial. With prospective studies, subjects are divided into two groups, a control group and a study group, and they are then matched as groups to test the hypothesis.

"The only thing different between the two groups is one factor such as HIV co-infection," Imperial explains. "At the end of the study, you come up with an answer based on a direct comparison."

With retrospective studies, researchers test for one purpose but identify other findings along the way, creating a retrospective analysis.

"At the end of the study, researchers analyze it and say, 'look we also found this,'" Imperial

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Hepatitis C: An Overview Testing, Transmission, Treatment, & Taking Care of Yourself

By James Learned

James Learned is Director of Treatment Education at Community Research Initiative on AIDS (CRIA) and a member of the Hepatitis C Action & Advocacy Coalition (HAAC).

As hepatitis C (HCV) is increasingly discussed in the mass media and community treatment publications, the specter of this frightening infection haunts many people who are already coping with HIV. Whether you already know that you're HCV-positive or haven't been tested, the idea of dealing with another viral infection can be very scary. There is no need to panic! For the vast majority of people, including those with HIV, HCV isn't nearly as dangerous as some pharmaceutical companies would like us to believe.

In many ways, the current situation with HCV is similar to what happened with HIV in the late '80's and early '90's:

- the understanding of how the virus works is limited;
- when or whether to begin treatment is unclear;
- the few treatment options available are far less than ideal;
- interpreting the relative success or failure of treatment is difficult;
- there's no vaccine in sight; and
- one pharmaceutical company, Schering-Plough, is trying to "own" the disease in much the way that Burroughs-Wellcome attempted to "own" and profiteer from HIV a decade ago.

On the other hand, many people with HCV are taking their cues from the PWA (People With AIDS) and larger health care self-empowerment movements by:

- joining together to fight for their own good health;
- teaching and challenging their doctors;
- advocating for better and more accessible treatments; and

- defying the stigma, fear, and discrimination that abound in our moralistic culture.

What Is Hepatitis, Anyway?

"Hepatitis" is a general term, derived from the Greek, which means inflammation of the liver. It can be caused by alcohol, drugs, chemicals, toxins, or even autoimmunity, through which your immune system attacks your own body. It can also be caused by a viral infection, hepatitis A, B, C, D, E, G, and others, which have not been identified yet (that's right, there is no hepatitis F).

Although logic might lead you to assume otherwise, hepatitis C is very different from hepatitis A, or hepatitis B. They were named in order of their discovery because they're all viruses that affect the liver. HCV is an extremely small RNA virus that belongs to the Flaviviridae family of viruses, like yellow fever and hog cholera. HCV enters the bloodstream and, as it passes through the liver, it goes into the liver cells and reproduces very quickly. Your body begins attacking the infected cells, which causes the liver to become inflamed.

The liver, our largest organ, is the body's filter. It converts everything, from the air and chemicals we breathe to the food, alcohol, and drugs we consume, into substances to be either used by or excreted from the body. The liver is intimately involved in almost every aspect of the body's processes:

- making bile to help digest food;
- storing iron, vitamins, and minerals;
- manufacturing protein and nutrients;
- converting nutrients into energy;
- storing sugar and controlling the sugar in our bloodstream;
- regulating fat storage; and

- making clotting factor to help blood clot.

If your liver is not functioning properly, your entire system will be off, sometimes dangerously so.

Although retrospective research has discovered HCV antibodies in blood samples dated as far back as 1948, it wasn't until the 1970's that the virus first showed up in enough people to be noticed. It was called non-A, non-B hepatitis (NANB) and was identified as hepatitis C in 1987. An antibody test became available in 1990 to help identify people exposed to the virus. That same test began to be used to screen blood. More sensitive assays were developed, so it wasn't until mid-1992 that the blood supply was considered safe.

As evidence of how little we understand about the hepatitis C virus, epidemiological estimates vary widely. About 3 percent of the world population are infected with HCV, some 150 to 200 million people. In the United States, between four and five million people are living with HCV. Between 25 and 55 percent of people with HIV may be co-infected, including up to 90 percent of those who are HIV-infected through injection drug use.

An estimated 8,000 -10,000 Americans will die this year from HCV-related complications; that number could rise to 40,000 by the year 2015. This explains why liver failure due to HCV is the leading cause of liver transplants in the United States. As many as 15,000 Americans are currently on waiting lists for liver transplants.

Transmission

Although HCV transmission isn't completely understood, we do

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know that the virus is blood borne, meaning that it's contracted through blood-to-blood contact.

- Most new infections (about 36,000 in 1996) are due to needle sharing, another clear argument in support of syringe exchange.
- Anyone who received a blood transfusion prior to July of 1992 or used blood products (such as clotting factor) prior to 1987 is at risk.
- Health care workers can be infected through needle sticks.
- Body piercing, tattooing, or acupuncture using unsterilized needles also carry a risk.
- Sharing anything that can hold or transmit blood, snorting straws, other drug paraphernalia, toothbrushes, razors, even manicure implements, can put you and others at risk.
- Perinatal transmission from mother to baby occurs in less than 6 percent of pregnancies, but can be as high as 25 percent if the mother is also HIV-positive. Mothers in the acute phase of HCV infection (shortly after initial infection), with serious liver damage, or with high HCV viral load are more likely to transmit HCV to their baby.
- Breast-feeding is considered safe, but cracked and/or bleeding nipples could increase the risk. Also remember, we're talking HCV only.
- The likelihood of sexual transmission of HCV is minimal. Traces of virus have been found in semen, saliva, and vaginal secretions in some studies, although there isn't any evidence yet that HCV in these bodily fluids is transmissible. When long-time HCV-negative partners of HCV-positive people were tested, having practiced varying degrees of safer sex, those who became infected ranged from less than 5 percent to 27 percent. It's important to remember that these partners were sharing households and, probably, household implements like toothbrushes and razors, so the infections may not have been the result of sexual activity. Although the risk of sexual transmission of HCV is small, it might be smart to have safer sex. The presence of HIV or any other STD significantly increases the risk of sexual transmission, and

sexual behaviors that could result in torn tissue and, therefore, blood-to-blood contact (anal sex, fisting, certain S&M activities) may increase the odds of transmission as well.

HCV can live a long time outside of the body, much longer than HIV can. HCV produces up to a trillion virus particles daily, many more than the billions of HIV produced in the body each day. That's why blood-to-blood contact is more likely to transmit HCV than HIV - there are a whole lot more HCV's in the blood and they hang around outside the body much longer.

Testing

Learning if you've been exposed to HCV isn't so difficult. Finding out if you're infected, and if so, what's going on in your body as a result of the infection is trickier. Ultimately you'll need a number of tests to give you this important information. To learn whether you've been exposed to HCV, start with an HCV antibody test also known as ELISA. This test looks for antibodies that your immune system produces after you're exposed. Most people who are exposed to HCV will produce antibodies within three months of exposure, unless you're severely immunocompromised.

The antibody test can be tricky. False negatives can occur, so if you think you're at risk or are HIV-positive, follow it up with a more specific test called a qualitative HCV PCR (viral load). A qualitative PCR won't tell you how many hepatitis C virus particles there are in your blood sample (that's what the more expensive quantitative PCR does), but it will tell you whether there are any virus particles present.

If your PCR is negative, it may be a false negative, so have it done again in six months. The incubation period for HCV varies from two weeks to six months. If the PCR is negative a second time but your antibody test was positive, it may have been a false positive, or you may be one of those lucky 15 percent whose bodies clear the infection on their own.

Symptoms and Prognosis

If there's one sure thing to say about HCV, it is that there is no such thing as a "typical" infection.

Only about 25 percent of people have symptoms when first infected, and they are not the kind that are likely to make you sit up and take notice. These can include:

weight loss; low-grade fever; headaches; loss of appetite; nausea; stiff or aching joints; pain in the right side over the liver area; dark brown urine; pale feces; fatigue and/or depression (most common).

Sometimes, people develop jaundice in which the whites of the eyes and the skin, especially under the nails, become yellowish.

Most people have no symptoms until, or unless, the liver is seriously damaged. People experience different symptoms to varying degrees, and in most cases, symptoms don't show up for ten to thirty years after infection. That's why so much of the material out there about HCV refers to it as "the silent epidemic" or "the silent killer." However, this material is basically propaganda to push people into being tested or to begin treatment.

The good news is that 15 percent of the time, people's immune systems clear the virus all on their own in three to six weeks, although co-infection with HIV may interfere with the likelihood of HCV clearance. That leaves 85 percent of cases in which HCV is a chronic infection. The body isn't able to rid itself of the virus and keeps trying to fight it. More good news: 25 percent of the people who contract HCV never experience any symptoms or serious liver damage at all. This 25 percent includes people who develop fibrosis (mild scarring of the liver). But 10-20 percent of all people infected with HCV will eventually develop cirrhosis, a condition that occurs when scar tissue forms between the liver cells. This scarring makes it difficult, or sometimes impossible, for the cells to work properly in filtering the blood and performing

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HCV Genotypes Play a Major Role in Treatment Response Rates

By James C. Arvantes, Senior Consultant, Martin Medical Services

The most common form of HCV in the United States, known as Genotype 1, responds least effectively to interferon-based therapies.

More than 70 percent of the HCV-infected in this country have Genotype 1, that responds to treatment less than 30 percent of the time. By contrast, patients with Genotype 2 or 3, which

accounts for 20 to 25 percent of the nation's HCV cases, achieve sustained response rates (an undetectable viral load six months or longer after treatment) about 65 percent of the time.

Genotypes, also known as genetic variances, are used to predict therapy response rates and to determine the length of treatment regimens, making

the tests an essential part of HCV care and treatment. With interferon-based therapies, some doctors recommend a 12-month course of treatment for Genotype 1 and six months for Genotypes 2 and 3.

David Bernstein, MD, Director of Hepatology at the North Shore

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“under control.” This is unacceptable. Also unacceptable is the smaller but growing problem of people having difficulty accessing drugs to treat opportunistic infections when their HIV therapy begins to falter.

These problems are intimately related to the burgeoning crisis among under-funded ADAPs. Many state ADAPs have prioritized antivirals over other drugs. In fact, a growing number of ADAP formularies offer only antiretrovirals. While this strategy has been proven successful - the number of AIDS-related deaths continues to decline in most states - the number of patients dependant on ADAP continues to grow and the funding necessary to provide even basic antiviral treatment to all those who qualify is faltering.

This funding shortfall - certain to become a full fledged crisis if the Administration's proposal to flat fund ADAP this year holds - will make it difficult for ADAPs to add any new drugs unless they will have little or no budget impact. Worsening the problem will be the medical imperative of offering important new HIV medications such as T-20 that are likely to be very expensive. The chance of an ADAP, that is already strained, adding important new combination drugs to treat HCV, under these circumstances, is minimal.

People with HCV suffer from the same flaws in the health care system as PLHIV:

1. There is little or no health coverage available for the poor or underemployed,
2. Medicaid will cover patients only after they have become seriously ill, and
3. HCV patients like HIV patients are increasingly uninsured, poor, young adults from minority communities.

A related and serious problem arises in the lack of reimbursement streams for HCV-related diagnostic testing: HCV viral genotypes, biopsy, and HCV PCR. Little data is available, if and where, either ADAPs or state Medicaid programs are reimbursing for these important tests. In some states, some of the tests are covered while others are not. In New York, for example, Medicaid pays for biopsy but not for PCR or genotype testing. Until these tests are covered, the ability to offer treatment in an ethical and effective manner will be extremely hampered and the cost-benefits of offering treatment will be severely reduced.

There are a number of possible solutions to these problems, each (or all) of which will have to be attempted if we are not willing to accept a growing number of people surviving HIV only to succumb to HCV:

- The first is providing sufficient funding to state ADAPs, either

through present appropriations or through a separate budget line, to provide adequate HIV and HCV treatment to all who need it.

- The second is the passage of legislation such as Representative Nancy Pelosi's Expanded Treatment for HIV Act (ETHA) which would give states the opportunity to offer earlier treatment for HIV without proving that no new dollars will be spent doing so (cost-neutrality). We must also work with ETHA sponsors to assure that their bill will cover treatment and diagnostics for HIV-related co-infections.

- The third, and most difficult option, would be to foster new legislation that would provide treatment and related diagnostics to all underinsured or uninsured people living with HCV, whether or not they are co-infected.

The implementation of any of these options will require a concerted effort on the part of HIV and HCV affected communities as well as their advocates and the pharmaceutical companies producing HCV treatments. Can this happen? We at T•II CANN, being eternal optimists, believe that it can, and it will. After all, who would have believed that a handful of community groups and drug manufacturers could have ever coordinated the effort necessary to fund treatment for hundreds of thousands of PLHIV through ADAP. ■

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other vital functions. Of cirrhotic patients, between 1 and 4 percent develop liver cancer (hepatocellular carcinoma).

The remaining 40-50 percent of all people infected with HCV wind up with some liver damage, but not enough to be detrimental to their health, and go on to live their lives and die of some completely unrelated cause.

There's no clear way to tell who will develop serious fibrosis, cirrhosis, or liver cancer and who will live for decades with chronic HCV infection. This uncertainty can create anxiety and fear.

These percentages are based on people who are infected only with HCV. HIV/HCV co-infection is in many ways a different ballgame and one that is not well understood. One thing is unfortunately clear: if you are co-infected with HIV and HCV, your HCV replicates faster than in people who are infected with HCV only, which can lead more quickly to liver damage. Thankfully, your HIV viral load doesn't seem to be affected by the presence of HCV, although several studies suggest that HCV may, in fact, accelerate HIV disease. This remains controversial.

Finding a doctor who understands HCV, usually a gastroenterologist (stomach and bowel specialist) or hepatologist (liver specialist), can relieve a lot of anxiety. Work with him or her to monitor your liver. If you are co-infected, find someone who really understands and has experience with both infections. Or find two doctors and have them work with you and each other to insure that you get the best care possible.

Monitoring Disease Progression

Once you're sure that you are chronically infected with HCV, you will want to know what condition your liver is in so that you can make treatment decisions. Whether you have HCV or not, liver cells are constantly dying off and new ones are being made. A by-product of liver cells being damaged or dying is the secretion of

liver enzymes into your blood. These enzymes are measured each time you get your blood work. If you're HCV-positive, most doctors will simply monitor your liver enzymes (ALT, AST) every six months. It's a good idea to get a baseline reading, but your enzyme numbers can be affected by so many variants that they are only worthwhile for comparison purposes over time. If you are taking anti-HIV medications, for example, or any medications, for that matter, your liver enzymes are likely to be on the high end as your liver works overtime to metabolize them (break them down). If your liver is in really bad shape, your enzyme levels may be normal or low because your liver is too worn out to make the enzymes. Alcohol and street drugs can also significantly damage the liver, resulting in increased liver function tests. So, overall, monitoring liver enzymes isn't a useful indicator of liver damage.

For comparison purposes over time, you might want to get a quantitative HCV PCR (viral load) which tells you how much hepatitis C virus you have in your blood. Don't freak out when you get the results! Most people with HCV have viral loads anywhere between 100,000 and 10 million (sometimes higher). There's no comparison between HCV viral loads and those for HIV. Whereas a viral load of one or two million is considered very high in HIV, the same result in HCV isn't necessarily considered high. There is almost no information yet about how specific HCV viral load levels relate to the likelihood of current or future liver damage. So, as with liver enzymes, don't make any decisions based solely on viral load results.

You can monitor your symptoms, enzymes, and HCV viral load, but without having a liver biopsy, you really can't tell how your liver's doing. If you're feeling just fine, you're unlikely to jump at the chance to go through an invasive, uncomfortable, if not downright painful, procedure. However, liver biopsy is currently the most accurate way to measure the progression of liver damage. This is an outpatient procedure that just takes a few minutes while you're awake. A

needle is inserted through your abdomen, just below your right ribs, into your liver, and a small tissue sample is taken out and examined under a microscope by a pathologist. Because the sample is only from one part of the liver it can't tell you what's going on in other parts of your liver, but it is a useful diagnostic tool to measure the degree of inflammation, fibrosis, and cirrhosis in that sample. It's particularly important and, at present, necessary if you're considering treatment. Liver biopsy can be repeated to assess disease progression over time. As with any surgical procedure, preparation is required and there are risks involved. Very rarely, a biopsy can cause potentially dangerous internal bleeding. It's important to understand everything your doctor says to you about a biopsy before you undergo one.

Some doctors use ultrasound scanning as a diagnostic, which uses sound waves to provide images of the liver. Unfortunately, although ultrasound is not invasive, it also can't tell whether or how much damage your liver has suffered. The test is better for detecting abnormalities, like tumors, than it is for detecting more generalized problems like cirrhosis. It can locate an obstruction by showing the blood flow in the blood vessels of the liver. Your doctor might use ultrasound as a guide when inserting the needle for a biopsy.

Of the three main HCV genotypes (1, 2, and 3), genotype 1 is the most common in the United States, accounting for more than 73 percent of U.S. infections. Unfortunately, it's also the genotype least likely to respond to the treatments currently available. A genotype describes the basic genetic make-up of your particular strain of virus. Learning your genotype will give you some statistical information about how likely you are to benefit from treatment, but at this time it's still primarily a research tool. However, if you're considering treatment, learning your genotype could be very helpful.

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says. "But they did not control for that."

As a result, patient populations may not be matched properly or there may be variables that were not considered, leading to an observation that is not sufficiently supported according to Imperial.

"There have been lots of retrospective studies in terms of HIV/HCV co-infection but no real prospective studies except one in 1997," Imperial says.

That one prospective study suggests that HCV progresses faster in co-infected patients, but it is only one study and its findings are not conclusive Imperial acknowledges, however, that some co-infected patients, particularly those with low CD-4 counts, progress faster, creating a subset of co-infected patients who are developing fibrosis at a more rapid rate. However, the rate of progression in co-infected patients is impossible to determine without a liver biopsy, Imperial stresses.

"A liver biopsy is essential," she says. "We do not do liver biopsies for all of our Hepatitis C patients but when they are co-infected, you have to do a biopsy because we really do not understand the natural history in co-infected patients. We can't just say, 'everyone has bad disease' because when we biopsy these patients many of them do not have bad disease and we don't know why."

A liver biopsy reveals the extent of disease, which, in turn, drives treatment decisions, Imperial says. Like other doctors, Imperial recommends treatment for patients with "significant scar tissue," believing the medications can, at very least, slow the disease in some patients.

"We can't wait while these patients are dying on us," she says.

Yet, Imperial does not recommend treatment for someone with mild disease, a fibrosis score of one or even two, for example, preferring to defer treatment until there are

better treatment options available. At her practice at Stanford, Imperial closely monitors co-infected patients with mild fibrosis, performing biopsies every two years to determine disease progression and only initiating treatment if there has been marked progression of the disease.

Other doctors are more aggressive, advocating treatment from the outset based on the premise that HCV progresses more rapidly in co-infected patients.

"I would treat everyone for HCV if they are co-infected unless there is a contra-indication that would preclude treatment," says David Bernstein of the North Shore University Hospital. "I go in with the mind set that I am going to treat because you know the disease is going to progress. If you can slow it down or halt it, you have done your patients a favor at any stage of the disease."

"We know with the rapid progression of this disease, Hepatitis C with HIV, we are going to have tremendous trouble five or ten years down the road," Bernstein adds. "We need to intervene now."

Treatment Options

The current standard of care for HCV is interferon with ribavirin, a combination usually administered over a 12-month period at a cost of \$12,000 to \$18,000 a year per patient. It eradicates the virus in about 40 percent of treated HCV patients; with the remaining 60 percent deriving little or no substantial benefit from the medications. In co-infected patients, response rates may be even less effective, raising questions about the cost-effectiveness of the current therapies.

"A 40 percent response rate is not great," acknowledges Bernstein. "If you are an infectious disease physician and you are dealing with a new pneumonia drug and someone comes to you and says, 'it cures 40 percent of people,' the doctor is going to turn around, kick that person in the butt and ask them to leave."

"But if you are an oncologist and you are treating breast cancer and the drug cures 40 percent of the disease, you are going to want to use it," Bernstein says.

It's important to remember that HCV is a long term, chronic illness, the only long term viral infection that can be cured with medication in some cases. Even if the combination regimens do not result in a cure, they can impede disease progression, making them "extremely cost-effective in terms of survival and quality of life," says Bernstein. "In every area that has been looked at, the medications are cost-effective," he stresses.

It should be pointed out, however, that the medications are extremely difficult to take, often triggering side effects that include severe depression and anemia. Beri Hull, a co-infected patient living in Washington, D.C., took the combinations for six months starting in August 1999, developing a "whole list of side effects" in the process.

"I developed depression," says Hull, a Senior Community Development Associate with the National Association of People with AIDS (NAPWA). "It made me very irritable and antisocial. It causes poor concentration and I was anorexic. I lost weight, and I had blurry vision."

The fatigue, she says, was "unbelievable." "I was out of breath from making my bed," Hull says. When she started treatment, Hull's HCV viral load was 95 million copies, but fell to undetectable levels by the time Hull stopped treatment six months later. Within two weeks, the virus rebounded.

"I was disappointed and felt like a fool for having gone through all of this," she says. "But my disappointment was outweighed by my joy of being off medication."

Brian Klein, a co-infected patient living in San Francisco, California, took a 10-month course of interferon and developed suicidal

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tendencies soon after starting the regimen.

“It’s a good thing I know about this stuff,” says Klein, a founding member of the Hepatitis C Action and Advocacy Coalition (HAAC). “I immediately went to my doctor and said, ‘look, intellectually I know my situation is not that bad. Please put me on some antidepressants fast.’”

The interferon alone did not alleviate Klein’s HCV. In January of 1999, Klein started taking interferon with ribavirin and even though he was forced to quit the therapy a month later after developing anemia, the regimen improved his fibrosis score, slowing and perhaps even reversing the disease process.

“That is what is most significant here - you want to slow, if not, possibly reverse the disease progression,” Klein says.

Fragmented Care

Accessing coordinated care may be the biggest challenge faced by co-infected patients, aside from the side effects of the medications. Often, HIV doctors know little about HCV; by the same token,

hepatologists lack knowledge about HIV disease, a situation often leading to a fragmented and disjointed system of care for the co-infected patient. The level of care and treatment for both diseases has evolved to the point that specialists are needed who are knowledgeable in both areas, according to doctors interviewed by *The Voice*. Yet, HIV physicians and hepatologists rarely consult or even speak to each other.

“It’s a real problem,” says Brian Klein of HAAC. “Co-infected patients need to have both specialists coordinating their care together - hepatologists who know HCV and good HIV doctors.”

Klein says the HIV doctors should serve as the primary care physicians, managing the HIV disease and overseeing the general health care of the co-infected patients. Hepatologists, of course, should manage the HCV, but both the HIV doctors and the hepatologists should confer and consult on a regular basis to create a coordinated system of care.

The most effective way to accomplish this goal is to designate HIV as a sub-specialty, reimbursing HIV doctors at a higher rate so that they will want to take care of co-

infected patients, Klein says. Bernstein, meanwhile, is convinced that the current reimbursement structure perpetuates disjointed care.

“If a co-infected patient comes in and sees an infectious disease doctor and a hepatologist on the same day, there is no reimbursement for both doctors,” Bernstein explains. “The patient has to see one doctor one day, the other doctor the next day so that both of them can receive reimbursement.”

“That is stupid and it needs to change,” Bernstein adds. “Until that changes, most doctors will not be interested in treating co-infected patients.”

Any reimbursement structure should promote collaboration between the two specialties, providing incentives for infectious disease doctors and hepatologists to work together for the care of the co-infected patient.

“These patients are very time consuming, they are sick and they need a lot of support,” Bernstein says. “But we can work wonders with them and make them so much better if given the opportunity to do so.” ■

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Treatment Options: Limited and Nasty

Figuring out whether to go through treatment for HCV is complicated, even more complicated than it is with HIV. The effectiveness of available treatments is extremely limited, and they can cause severe, nasty side effects for most people. If you’re co-infected with HIV and HCV, the side effects of HCV treatment and possible interactions with anti-HIV medications make the decision even more difficult (see sidebar). Anticipating the large market that will be seeking treatment for HCV in the near future, some pharmaceutical companies are putting considerable resources into the development of HCV therapies, including protease

and helicase inhibitors. Perhaps the biggest obstacle to this work is that no one has been able to grow the virus in laboratory cultures. More successful and safer treatments are still years away.

The language used by many HCV researchers can be misleading and confusing. When you look through the literature at studies and articles or attend research presentations, terms such as “cure,” “eradication,” and “PCR-negative” repeatedly come up. However, largely due to PWAs’ influence on the language of HIV and the many researchers and doctors who understand the importance of using language that reflects the uncertainty of what is going on, the language of HCV is slowly evolving. “PCR-negative” is

now often replaced by “undetectable viral load”; “eradication” is most often used only when talking about the 15 percent or so who spontaneously clear the virus from their systems after initial infection; and that loaded word “cure” appears less often now because what is really meant is a sustained undetectable viral load. Yet the word “cure” may, in fact, be accurate - sometimes. Several small studies show that over 90 percent of people who achieved a sustained virologic response, still have undetectable virus 3-11 years later. Is that a cure? It may very well be.

What we have at present is interferon, with the addition of ribavirin three years ago. Interferon is a

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Special Considerations for People Who Are Co-Infected

- People with HIV/HCV co-infection may experience faster progression to cirrhosis and more liver damage than people who are singly infected with hepatitis C, but this is unclear and controversial. Faster progression to liver disease may be less likely if your HIV is well under control.
- Co-infected people with less than 200 T-cells are at much higher risk of developing cirrhosis.
- Hepatitis C seems to have little impact on the progression of HIV, except in people with hemophilia. Again, this remains unclear and controversial.
- All protease inhibitors and non-nucleosides are processed through the liver. If you begin HIV antiviral treatment, your hepatitis C viral load and liver enzymes may go up. Usually, the flare-up goes away relatively quickly. Regular bloodwork is particularly important during the first couple of months after starting anti-HIV treatment.
- Dosing of the protease inhibitor amprenavir (Agenerase) should be lowered in people with severe liver disease. The usual twice-daily 1200 mg dose should be reduced to 300 - 450 mg twice a day. However, if blood levels of amprenavir are too low, resistance could develop. The only way to know for sure whether drug blood levels are as they should be is by directly measuring those levels - therapeutic drug monitoring.
- If your liver is badly damaged by hepatitis C (or for any other reason), it may be hard for your body to adequately break down HIV medications, especially protease inhibitors and non-nucleosides.

This could lead to less antiviral activity, a higher HIV viral load, and, over time, severely limited HIV treatment options.

- One of the most severe side effects of ribavirin is anemia (lowered red blood cell counts), so regular blood work is particularly important. Anemia is also a possible side effect of Retrovir (AZT), so you may want to avoid using both ribavirin and Retrovir (or Combivir or Trizivir, which both include AZT). If you're taking both AZT and ribavirin, regular blood monitoring becomes even more important.
- Nucleoside analogues can damage mitochondria, which produce energy for cells. Ribavirin is a nucleoside analogue. So are AZT, d4T (Zerit), ddI (Videx), ddC (Hivid), 3TC (Epivir), and abacavir (Ziagen). Mitochondrial toxicity may be more likely if you are taking ribavirin and other nucleoside analogues.
- High doses of interferon can lower T-cells (CD4s), at least temporarily, although the CD4 percentage is not usually affected.
- Deciding which infection to treat first, the hepatitis C or the HIV, can be difficult. Don't start treatment for both simultaneously. Combination therapy for HIV should be started at least four weeks before beginning the hepatitis C treatment (or vice versa).
- The risk of transmitting hepatitis C may be greater if you're also HIV-positive because you're more likely to have a higher hepatitis C viral load.
- A doctor or other health care provider who knows HIV really well doesn't necessarily know hepatitis C, and vice versa! ■

gone through this arduous regimen with little to show for it but what many call "a trip to hell." Only 2-7 percent of people with genotype 1 have a sustained response with interferon monotherapy. About 40 percent of the people who do have a sustained response at six months relapse within a year after finishing the regimen.

Combination Therapy: A Clear Improvement

In 1998, Schering-Plough received FDA approval to market ribavirin (Rebetol), an antiviral in capsule form, to be used in combination with their brand of interferon, Intron A. The combination is packaged together in one kit called Rebetron. Unless there are individual reasons not to use the combination, interferon/ribavirin therapy is the closest thing we have to a standard-of-care for people undergoing treatment for HCV, although at \$18,000 a year, it's difficult to jump for joy.

The data are consistently better than those for interferon by itself. In studies, 33-48 percent of people treated with the combination for six months to one year had a sustained response (undetectable HCV viral loads six months after ending treatment). These data include people who had not had success with previous interferon monotherapy as well as those who were undergoing treatment for the first time. However, the combination is only effective in about 28 percent of people with genotype 1. Also none of the published studies have included HIV-positive people, although trials for co-infected people are now underway.

The next step toward more successful HCV treatment is pegylated interferon. Pegylation is a process that allows interferon to stay in your body at consistent levels for up to a week. By providing steady levels of drug, pegylated interferon allows for once weekly dosing, compared to three times a week for regular interferon, as well as higher success rates. Results of Phase III trials of monotherapy with either of the two pegylated

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naturally occurring protein that the body produces to interfere with a virus' ability to infect other cells, hence the clever name. Bio-engineered interferon is injected subcutaneously (under the skin) for six months to one year. There are three regular interferons available for the treatment of HCV: Amgen's Infergen, Roche's Roferon, and Schering-Plough's Intron A. As

monotherapy, they all have similarly meager results.

Depending on which study you look at, only 5 to 25 percent of people who go through interferon monotherapy get what is called a sustained response, an undetectable HCV viral load six months after ending treatment (<100 copies per ml). This means that 75 to 95 percent of these people have

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interferons show overall sustained response rates of 23 - 38 percent. Small, early studies of pegylated interferon in combination with ribavirin show even more promising results. Unfortunately, pegylated interferon can cause the same side effects as standard interferon. One pegylated interferon (PEG-Intron) was approved by the FDA in January 2001, and another (Pegasys) will hopefully be approved later this year.

Most people who use interferon experience side effects, usually severe ones, which are often worse during the first few weeks of therapy. They can include: fatigue; joint and muscle pain; fever; chills; nausea; headaches; weight loss; mild hair loss; reduced white blood cell and platelet counts; irritability; depression; even suicide.

Ibuprofen can help with the flu-like side effects, and some people begin taking antidepressants a couple of weeks before starting the treatment to reduce the possibility of depression. One of the most severe side effects of ribavirin is anemia. If anemia occurs, lowering the ribavirin dose can help, as can Epoprostenol or Procrit. Anemia is also a possible side effect of AZT. Regular bloodwork is particularly important if you're on both ribavirin and AZT. Both interferon and ribavirin can cause birth defects, so both men and women who have procreative sex should use effective contraception while on the combination and for six months afterwards. The course of treatment can be so debilitating that many people are unable to work or lead active social lives during the six months to one year they're going through it. In clinical trials of the combination treatment, 20 percent of the participants dropped out because of side effects or adverse events.

Another downside to current available treatment (or upside, depending who you are) is that some people clearly don't respond as well as others. Those who respond best include:

- people under 40,
- women (pre-menopausal),
- people with genotypes 2 or 3

(genotype may be the best predictor of sustained response),

- people with hepatitis C viral loads less than two million copies,
- people with little fibrosis,
- people with no cirrhosis, and
- people with lower body weight or BMI (body mass index).

A sustained undetectable viral load and normalized liver enzyme levels usually translate into a healthier liver (histologic improvement). However, even people who don't get a sustained response or a significantly lower viral load from interferon-based therapy may have given their livers a much-needed break by undergoing treatment. Also, there is often improvement in the degree of liver disease, even if an undetectable viral load was never reached. Again, nobody knows what that means in the long run.

Studies are ongoing which explore lower doses of ribavirin, which may provide the same benefit with fewer side effects. Also being studied are various combination treatments.

People with HCV have been trying some of these regimens for years, with varying rates of success. No one knows exactly how to measure the long term effect of any treatment regimen on overall survival or a decrease in the need for liver transplants due to a lack of any "hard" end point.

As in HIV, the future of HCV treatment is likely to be multi-drug combinations that may include:

- ribavirin;
- protease inhibitors;
- helicase inhibitors;
- antivirals such as amantadine and rimantadine;
- thymosin alpha;
- corticosteroids;
- pentoxifylline (Trental);
- levamisole; and
- even such favorites as interleukin-2 (IL-2), Retrovir (AZT), and Norvir (ritonavir).

Although any treatment regimen is likely to be difficult and have potentially serious side effects, anyone who's gone through interferon treatment looks forward to the

day when interferons are no longer a part of standard HCV therapy.

Alternative and Complementary Therapies

Many people use herbal and natural substances to cleanse the liver, sometimes combined with "traditional" treatment (complementary), more often to avoid the traditional route (alternative). There isn't much data on these substances because nobody owns the patents on them and there are not the financial incentives for drug companies to do the research. Those with the most data, as well as being most widely used, include:

- milk thistle (silymarin) acts as an antioxidant, stimulating the regeneration of liver cells;
- astragalus enhances immune function by increasing the activity of various white blood cells and boosting the production of antibodies and natural interferon;
- dandelion, boiled or in capsule form, is used for all kinds of liver problems;
- bupleurum reduces liver inflammation and protects the liver from toxic damage;
- garlic detoxifies the body, protects the body from infection, and strengthens blood vessels;
- licorice root contains glycyrrhizin, which has well documented antiviral activity and has been shown to be effective in treating viral hepatitis;
- vitamin E, advocated for a variety of diseases, is often used in HCV because it's supposed to assist the liver in detoxifying the blood and slow down the development of fibrosis. However, high-dose vitamin E (over 800 mg a day) can be toxic to your liver;
- artichoke promotes the outflow of bile from the liver to the gallbladder;
- thioctic (alpha-lipoic) acid is a natural antioxidant that has been used for years because of its ability to help maintain and restore liver health; and
- ginkgo biloba is sometimes used to improve memory loss and blood circulation.

Of course these and other alternative substances can sometimes

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HCV Resources

The following resources and definitions were provided by Brian Klein, a founding member of the Hepatitis C Action and Advocacy Coalition (HAAC).

Pharmaceutical Resources and Patient Assistance Programs:

Amgen (Compass Program):
(888) 508-8088

Roche (Customer Service):
(800) 526-6367

Schering Plough (Commitment to Care): (800) 521-7157

Fisher's Pharmacy (Compounded ribavirin and interferon):
(888) 347-3416

Recommended Written Materials:

Double Jeopardy: The Co-Infection Handbook, Community Prescription Service. This handbook is available in English and Spanish. To order: (800) 842-0502.

Hepatitis C and HCV/HIV Coinfection Handbook by Jules Levin of the National AIDS Treatment Advocacy Project (NATAP). It is a 20-page comprehensive discussion of many aspects of Hepatitis and HCV/HIV co-infection, including treatment and monitoring. To order call NATAP: (888) 26-natap or (212) 219-0106.

The Hepatitis C Help Book by Misha Cohen and Robert Gish, St. Martin's Press, New York, 2000. This is a new book by two experts on HCV addressing western, Chinese, and complementary medicine treatment options for HCV.

Hep C on the web:

This site has an excellent HCV newsletter by the Hepatitis C Support Project that serves as a resource for many support groups throughout California — www.hcvadvocate.org.

HAAC (Hepatitis C Action & Advocacy Coalition), a grassroots HCV patient driven advocacy organization seeks positive change for the HCV community. Contact information: 530 Divisadero St. #162, San Francisco, CA 94117. Email address: haac_sf@hotmail.com.

This website is an excellent resource for information on HIV, hepatitis B, and HCV. The site is highly recommended and is updated constantly with the latest news and information — www.hivand-hepatitis.com.

This website provides a good resource on HCV. Peppermint Patti's Frequently Asked Questions (FAQ) is probably the most comprehensive document (150 pages) on HCV and is free to print off her website — <http://members.bellatlantic.net/~clotho>.

Medscape Resource Center - Hepatitis C. Medscape's Hepatitis C Resource Center is a collection of the latest medical news and clinical information on this disease entity, with an emphasis on approach to management. This resource includes reports from recent conferences, reviews articles, MEDLINE searches, and links to clinical practice guidelines and other related sources on the Web — www.Medscape.com.

Hepatitis Magazine's charge is to assist hepatitis patients and their families in taking control of their own health care by providing current, comprehensive information in one source — www.hepatitismag.com or (281) 272-2744.

The NATAP (National AIDS Treatment Advocacy Project) web site is a resource for doctors and patients. It provides comprehensive up-to-date HIV and Hepatitis treatment information and reporting — www.natap.org

Instant Advocacy Initiative's site allows you to fight liver disease by e-mailing Congress — www.HepatitisActivist.org.

Hepatitis C Education & Prevention Society of Victoria, British Columbia — www.Hepcbc.org.

Glossary for HCV:

Hepatitis: an inflammation of the liver that may be caused by viruses, chemicals, or birth defects.

Fibrosis: scar tissue in the liver that may be caused by chronic hepatitis.

Cirrhosis: severe liver disease in which liver cells are damaged or killed and are replaced by extensive scar tissue. The development of extensive scar tissue formation prevents the flow of blood through the liver causing more liver cell death and a loss of liver function.

Diagnostic Tools:

Testing for HCV is not routine. You may have to request a test from your physician. It is recommended that you use the same lab for all of your tests since ranges and accuracy can vary from lab to lab. Additionally, you should keep copies of your lab and biopsy results for future reference.

ELISA: a simple blood test that can detect the antibody to HCV. Once you test positive for the antibody, a second test (RIBA) may be performed to confirm antibody positivity.

Viral Load: a test to measure the amount of HCV circulating in your blood. The more sensitive (and expensive) test is the HCV RNA by PCR (Polymerase Chain Reaction), which can detect as few as 100 particles of virus. The less expensive test is the HCV RNA by branched DNA assay, which will measure the virus at levels over 200,000 particles.

These tests have not been approved by the Food and Drug Administration (FDA). Moreover, the correlation between viral load

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and the health of the liver has not been established. However, it can have value during treatment to measure viral response to the medication and can be used with other tests to evaluate the health of your liver.

Genotype: HCV has six major subtypes or genotypes: 1a/b (most cases in US), 2a/b, and 3, 4, and 6. Doctors use genotypes to predict treatment response rates. Genotypes 1a and 1b are more difficult to treat.

Liver Function Tests: The liver or hepatic panel test includes a measurement of certain liver functions. The most common measurements are the ALT (alanine aminotransferase) and AST (aspartate aminotransferase), which are frequently elevated in those with chronic HCV infection. The ALT and AST are enzymes produced in the liver.

When HCV causes inflammation of the liver, these enzymes spill into the blood. Many people with HCV have mild to moderate elevations of these two enzymes and this is often the first indicator that someone has HCV. Other measurements include Alkaline phosphatase (ALK) and Gamma-glutamyl transpeptidase (GGT) — abnormal findings may indicate cirrhosis and bile duct blockage as well as other abnormalities; prothrombin time evaluates blood-clotting speed; and bilirubin levels assess liver function and when elevated can cause jaundice. Many factors such as medications and alcohol can cause abnormal lab results. Before drawing your own conclusions, check with a health care practitioner.

Liver Biopsy: used to measure the severity of inflammation and general health of the liver. It may also be used to select the appropriate treatment. The most common procedure is to insert a long needle into the liver and draw out a specimen.

Interferon: an antiviral protein that is a naturally occurring immune system response; it “interferes” with the viral replication of infected cells. Replicated in

the lab at magnified strengths, the drugs with this name have shown promising results in the fight against autoimmune diseases and hepatitis.

Pegylated interferon: a form of interferon in which polyethylene glycol (PEG) is attached to the interferon molecule to slow the breakdown and removal of the interferon from the blood. Standard interferons are removed from the blood within 24 hours of injection. Pegylated interferons maintain the interferon level for much longer periods, up to one week so the interferon remains effective in treatment. As opposed to the multiple injections of standard interferon that must be administered for efficacy, pegylated interferons are designed to be administered only once a week and seem to have improved efficacy in clinical trials. A version of this has been approved by the FDA and another product is pending final approval.

Ribavirin: a nucleoside analogue used in combination with interferon in the treatment of hepatitis C.

Sustained Response: a measure of hepatitis C treatment effectiveness. Specifically defined as maintaining an undetectable viral load six months after anti-hepatitis C treatments have been halted.

Non-responder: a person who does not achieve an undetectable viral load during any phase of treatment.

Relapser: a person who achieves an undetectable viral load sometime during treatment, but does not maintain one for a sustained response. ■

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University Hospital in Long, Island, New York, compared genotypes to a “car dealership where there are different makes and models.”

“Genotypes behave differently,” explained Bernstein, Associate Professor of Medicine at the New York University School of Medicine. “They are not all the same.”

Five years ago, researchers looked at genotypes as an “academic curiosity,” an area that needed to be studied but whose importance was not understood, according to Bernstein. Yet, during the past five years, studies have demonstrated the importance of genotypes as a predictor of responses to therapy.

HCV, which was first identified in 1989, is still not fully understood by medical science. Consequently, treatment of the affliction is “truly in evolution,” lagging about 10 years behind the care and treatment of HIV disease, Bernstein noted. With HIV disease, doctors prescribe targeted therapies, protease inhibitors, and other antiretroviral therapies, to inhibit virus replication at various points of the virus life cycle.

“We don’t have that with HCV,” Bernstein explained. “We just give antivirals and some have worked and some have not worked.”

It is important to remember, however, that the treatment end points for HIV and HCV are different. With HIV, the treatment goal is suppression of the virus; with HCV the goal is eradication of the virus. This goal can be accomplished 40 percent of the time, making HCV one of the few viral diseases that can be eradicated with medications.

Meanwhile, HCV treatments “are getting better,” Bernstein stressed. In the early to mid- 1990s, doctors prescribed interferon monotherapy and interferon with ribavirin. In the near future, doctors will be prescribing pegylated interferons, the same type of compound as interferon but with fewer side effects and more potency. It will probably be used in combination with ribavirin, achieving greater response rates than the current standard of care, Bernstein said.

The development of targeted HCV therapies similar to those used with HIV treatment is probably several years off, and there are no immediate prospects for a vaccine, Bernstein observed. However, in 5 or 10 years, he says, “we are going to have dramatic leaps in directed therapies.”

“We have come a long way from interferon monotherapy,” Bernstein said. “But we have a long way to go.” ■

TLC for the Liver — Interferon Isn't the Whole Picture

A Note From the Hepatitis C Action & Advocacy Coalition (HAAC)

By Brian Klein & James Learned

As we report on our efforts to secure equitable access to pharmaceutical treatments for people with HCV, it can seem as though interferon-based treatment is the only thing we believe in. This is always a danger when you're fighting for access. It can be perceived as promotion of that particular treatment or modality. If someone held the patent on milk thistle and was charging exorbitant prices or packaging it in such a way as to make it unavailable to people who felt that they needed it, we would be fighting just as strongly on that front. Thankfully, no one does hold the patent on milk thistle.

Interferon-based treatment has its place, an important one, in fighting hepatitis C. But clearly it is not right for everyone or for every situation. Although sometimes useful, interferon-based treatments have many obvious limitations.

Complementary therapy is an umbrella term used to include alternative, holistic, natural, supplemental, and traditional therapies (traditional meaning rooted in culture). Complementary therapies are well worth considering in addition to or as an alternative to current western medical treatments, depending on your individual situation and belief system. As with western medicines, these therapies - herbs, vitamins, supplements - can be useful, but they also have their limitations. Just because something is all "natural" doesn't mean it's always good for our health. "Natural" therapies can carry significant risks and/or side effects.

Also as with western medicines, each of us will experience different responses, both good and bad. Just as it's important to be aware of the potential for interactions between drugs, there can also be interactions between herbs and medications. For example, the NIH recently reported that St Johns Wort significantly reduced levels of the protease inhibitor, Crixivan (indinavir). As a result, the FDA issued a warning not to use St Johns Wort with a protease inhibitor or NNRTI. A very

small, recent study indicates that taking regular garlic supplements can reduce levels of another protease inhibitor, Fortovase (saquinavir). For a list of herbs and their possible effects on the liver, see "Hepatitis C: An Overview: Testing, Transmission, Treatment, & Taking Care of Yourself," subheading "Alternative and Complementary Therapies" on page 10 of this issue.

At last year's HCV Global Health Conference, a man was passing out flyers stating, "Selenium can cure HCV. For years, this same man has been saying that selenium cures AIDS as well. Selenium is a trace mineral that has some anti-viral effect and is needed in small amounts in the diet. CURING AIDS OR HCV WITH SELENIUM IS ENTIRELY CONJECTURE AND COMPLETELY UNSUBSTANTIATED. Offering such simplistic answers for complex infections and diseases is enticing, but it is also dangerous, leading to things like the growing influence of AIDS denialists/dissidents who state that they don't believe that HIV is the cause of AIDS, safer sex is unnecessary, and the advances in western medical treatments for HIV are only toxic poisons. Let's insure that such nonsense doesn't occur with HCV.

No treatment, western or non-western, is a panacea. Skepticism is healthy and absolutely necessary. However, "spin" can be just as strong in the non-western medicine movements as with western pharmaceuticals. We encourage all individuals living with HCV to weigh the risks and benefits of any treatment for themselves, based on sound information. Choose complementary practitioners as carefully as you would your western medical specialists.

Here are some starting places that we have found reliable to look at complementary treatment options. This is by no means a thorough resource list. Many HCV websites include useful information on alternative/complementary therapies. Sharing our most useful resources with each other is the best way to

help us make informed, individual decisions about our health.

One of the most useful sites that we've found is from Germany: <http://www.hepatitis-c.de/hepace.htm>. This site offers some of the most complete information on herbs and vitamins we have seen, as well as lots of other good stuff.

A new book has recently been published, *The Hepatitis C Help Book: "A Groundbreaking Treatment Program Combining Western and Eastern Medicine for Maximal Wellness and Healing,"* June 2000, St. Martin's Press, New York. It is written by Misha Ruth Cohen, OMD, LAc., and Robert G. Gish, MD. Misha Cohen is Clinical Director of Chicken Soup Chinese Medicine, co-founder and Research and Education chair of Quan Yin Healing Arts Center, as well as Research associate at UCSF Medical School. Robert G. Gish, MD is Medical Director of the Liver Transplant Program at California Pacific Medical Center in San Francisco. It was great to see these two respected practitioners collaborate on this book. The book covers Western medical options (allopathic) as well as Chinese Herbal Therapy, Chinese nutrition, Acupuncture, Qi Gong, and many other options.

As with any treatment plan, it is important that it be accompanied by practices on your part that will help keep your liver healthy. Also important, is keeping the chance of transmission to others minimal. For more information on these subjects please see "Hepatitis C: An Overview: Testing, Transmission, Treatment, & Taking Care of Yourself," subheading "What Do I Do Now?" on page 14 of this issue. ■

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have dangerous side effects, especially if taken in high doses. For example, the high sulfur content of raw garlic can cause dermatitis and colitis. Garlic can also inhibit blood clotting and interfere with thyroid function, exactly the opposite of the desired result. A recent study showed that regular garlic supplements can interfere with blood levels of the protease inhibitor Fortovase (saquinavir), and possibly other protease inhibitors. Potassium can be depleted with longtime use of licorice. In very high doses, the active ingredient in licorice root, glycyrrhizin, can cause high blood pressure, water retention, and possibly heart complications. It's the same old story, there's no such thing as a free lunch.

What Do I Do Now?

If you have HCV, whether or not you're also HIV-positive, do what you can (within reason) to avoid stressing out your liver any further. If you haven't already done so, get vaccinated against hepatitis A and hepatitis B. Co-infection with hepatitis B can speed up liver damage. Alcohol use increases the risk of cirrhosis ten times, so avoid alcohol if possible, or at least limit the amount you drink. Over 2,000 mg a day of acetaminophen (Tylenol and many

other non-aspirin pain relievers) is extremely toxic to the liver. Acetaminophen and alcohol together can cause severe liver damage, even if you don't have HCV.

As much as possible, avoid exposure to pollutants and chemicals such as fumes from paint, paint thinners, chemical solvents, spray adhesives, insect sprays, and other aerosol sources. Be particularly careful with cleaning products, too, another source of toxins.

If your liver is damaged or stressed, it's going to have a tougher time breaking down your food. So it's more important than ever to watch what you eat. As much as possible, stick to a nutritional, balanced diet. Foods with high salt, sugar, or fat content, such as cheese, pickles, fast food, and processed foods, stress your liver. So do shellfish, raw fish, and Vitamins A, D, and K supplements. Although some herbs are terrific liver cleansers, others definitely are not: peppermint, mistletoe, yerba tea, sassafras, germander, chaparral, and others. Talk with your doctor or pharmacist before using alternative therapies or other medications, including over the counter ones.

Don't share drug paraphernalia (needles, snorting straws, cottons,

pipes, etc.), toothbrushes, razors, or other items that could retain blood. If you've been sharing needles, you might consider telling your running mates (the people you use with) so that they have the option to check their status. Although sexual transmission of HCV appears to be minimal, it might be smart to practice safer sex, particularly if you have multiple sexual partners.

Do not avoid normal social contact. Hug, kiss, and cook to your heart's content. Keep track of all your test results, including liver enzyme levels, viral load, and genotype. If there's no indication of liver problems, see your doctor or other health care provider every six months for regular blood work. HCV can be as isolating as HIV. So take care of yourself emotionally! Talk to others living with HCV. Join a support or advocacy group. Perhaps most important, become an informed, willing, and active partner in your health care. Don't be afraid to ask questions. The more you know, the better treatment decisions you can make for yourself. ■

Visit T•II CANN's website at
www.t2cann.org.



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