

HIV and Hepatitis C (HCV) Coinfection Information Brochure

Introduction

Complications from hepatitis C (HCV) are becoming one of the most important medical issues facing HIV positive individuals. In the United States it is estimated that 750,000 people are infected with HIV; 4,000,000 are infected with HCV and as many as 240,000 to 300,000 people (up to 40% of people with HIV) are infected with both HIV and HCV. Worldwide, it is estimated that 170 million people are infected with HCV; 36.1 million people are living with HIV/AIDS and an estimated 23-75% of people infected with HIV worldwide may be coinfecting with HIV/HCV.

In general, coinfection with HIV & HCV is poorly understood. However, new data and treatment guidelines are emerging that may help us understand and successfully treat both diseases. Hepatitis C is categorized as a HIV opportunistic infection.

It is becoming clear that HIV may accelerate HCV disease progression and make it worse. It is unclear if HCV makes HIV worse, although having HCV may increase the incidence of hepatotoxicity or liver damage from HIV drugs. The majority of studies have not been able to correlate a more aggressive HIV disease progression to being infected with HCV.

In order to properly understand HIV/HCV coinfection a comprehensive understanding of both HIV and HCV is essential. Additional resources are listed in this document.

HIV: The Basics

The human immunodeficiency virus (HIV) is an RNA virus that causes acquired immunodeficiency syndrome (AIDS). HIV primarily infects white blood cells called CD4 lymphocytes—cells that help the body fight infections. HIV enters the cell and integrates into the DNA. HIV uses the cell to produce more HIV and this eventually kills the host CD4 cell. Eventually, HIV overwhelms the immune system, causing more CD4 cells to die, and this limits the ability of the body to fight infections. This, in turn, leads to the development of opportunistic illnesses, such as *Pneumocystis carinii* pneumonia (PCP).

Transmission

HIV is transmitted by infected body fluids, including blood, semen, and vaginal secretions. It can also be transmitted from mother to child (vertical transmission) and breast-feeding. It is most commonly spread by sexual contact and sharing HIV infected needles or syringes.

Diagnosis

Two tests are used to establish HIV infection. The enzyme-linked immunosorbent assay (ELISA) tests for antibody. If this test is positive, a confirming test, called a Western blot test, is done. Note that there is a 6-week to 6-month window period before the body develops antibody against HIV. Viral load testing (by PCR or bDNA test looking directly for the virus) is not used to diagnose HIV, but is used to monitor HIV activity in the body after diagnosis is established by antibody test.

Monitoring HIV disease progression

The viral load test mentioned above measures the amount of virus circulating in the blood. The CD4 cell count measures the health of the immune system itself. Normal CD4 count is 500-1200. These two tests, viral load and CD4 count, are the standard tests used; they are normally done every three months. Increasing viral loads and/or decreasing CD4 counts generally mean that HIV disease is progressing.

HIV Treatment

Antiretroviral Treatment

Effective treatment for HIV requires a combination of at least three drugs. The best time to start treatment with HIV antiretroviral medication is controversial. Some medical authorities believe starting antiviral therapy soon after testing positive for HIV will help the body fight HIV. However, many practitioners prefer to wait until HIV viral load is between 30,000-50,000 copies, or the CD 4 count is between 300-400 before starting therapy. Antiretroviral medications include:

Nucleoside Reverse Transcriptase Inhibitors (NRTIs): examples are AZT (Retrovir), d4T (Zerit), ddI (Videx);

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs): examples are efavirenz (Sustiva), nevirapine (Viramune); and

Protease Inhibitors (Pis) – examples are ritonavir (Norvir), indinavir (Crixivan).

Many of these medications can have serious side effects including fatigue, fevers, headaches, rashes, depression and more. Since the liver metabolizes these drugs it is extremely important that people taking them be monitored for potential liver toxicity.

Opportunistic Illnesses: Prevention and Treatment. When CD4 counts drop below 200 a person is susceptible to a variety of opportunistic infections and people with HIV will be given medications to treat or prevent these infections.

To learn more about HIV please contact the following organizations:

Project Inform – www.projectinform.org; hotline: 800-822-7422

San Francisco AIDS Foundation – www.sfaf.org; hotline: 800-367-2437

HIV and Hepatitis – www.hivandhepatitis.com

HIV/HCV Coinfection

HIV and HCV share many characteristics. Both are RNA viruses and both have similar transmission routes, i.e. transfusion and intravenous route. However, HCV is poorly transmitted through sexual contact (5%). HIV left untreated can lead to serious complications that can lead to death. HCV is a slowly progressive disease that may take decades before serious damage occurs. Less than 25% of people infected with HCV will develop cirrhosis and half of them will have serious consequences that could lead to death. In fact, many people with HCV will not have serious complications and will most likely die of causes unrelated to HCV. People infected with HIV and HCV may have more rapid progression of their disease.

Treatment for HCV works for some individuals (50%) and the word 'cure' is being tossed around for a subset of patients. Future treatments hold even greater promise. The introduction of combination antiretroviral therapy has greatly improved and extended the life for many HIV + individuals in the western world. When combination antiretroviral therapy began, many doctors noticed dramatic liver enzyme increases and started testing for HCV. HIV medications can be hard on the liver and some have the potential to be liver toxic. Most people with HCV can tolerate HIV medications as long as they are followed closely for potential liver toxicity. Dose reductions and change in HCV medications may be needed, but most people can be successfully treated.

Diagnosis.

The U.S. Public Health Service and Infectious Disease Society of America recommend that all HIV infected people be tested for HCV. Identifying coinfecting individuals from a HCV antibody test can be difficult if HIV has severely compromised the immune system. Hepatitis C antibody is sufficient if CD4 count is over 200. If less than 200, HCV RNA may be required for diagnosis.

Treating HIV in the HCV positive individual

It is generally recommended that HIV be under control or treated first before treating HCV. The good news is that HIV can be successfully treated in people co-infected with HIV and HCV. However, since liver toxicities can occur, both an HIV specialist and a liver specialist should follow coinfecting people together.

Drugs that have been associated with some degree of liver toxicity include:

Nucleoside Reverse Transcriptase Inhibitors (NRTIs)

AZT (Retrovir) has been found to produce some liver toxicity, especially at high doses; people taking it should be monitored. Other NRTIs, including ddI (Videx), d4T (Zerit), ddC (Hivid), and abacavir (Ziagen) have been known to produce liver problems as well.

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)

Nevirapine (Viramune) can produce drug-induced liver abnormalities, including hepatitis, in 8% - 28% of patients. Some individuals using efavirenz (Sustiva) have developed elevated liver enzymes.

Protease Inhibitors (Pi's)

HIV Pi's are generally the hardest on the liver and merit the closest attention. However, the majority of these medications can be well tolerated. Ritonavir (Norvir) seems to produce the majority of liver related toxicity. Indinavir (Crixivan) has also been associated with liver toxicity. Saquinavir (Fortovase) is much less toxic but the combination of saquinavir and ritonavir increases the potential for liver damage. Severe liver toxicity with nelfinavir (Viracept) is rare. Potential for liver toxicity with amprenavir (Agenerase) is not well-established, but people with impaired liver function may require lower doses of amprenavir. The newest PI, Kaletra, combines lopinavir with ritonavir, and is known to elevate liver enzymes. Since PI's are increasingly given with small doses of ritonavir, liver function needs to be frequently monitored.

The potential for HIV medications to produce liver damage is very real. HIV medications may increase liver enzyme levels and HCV viral load, but they will usually stabilize over time.

HIV medications do not seem to have a direct effect on HCV. However, some experts believe that when HIV is under control, HCV disease progression is slowed.

Treating HCV in the HIV Positive Individual

People with HIV who have been diagnosed with HCV should be evaluated and considered for HCV treatment. The same treatment guidelines for treating HCV can generally be applied to HIV infected individuals. However, HIV positive individuals with CD4 counts of less than 200, or a concurrent opportunistic illness, are not considered good candidates for HCV treatment, until the CD4 count goes up and/or the opportunistic illness is treated.

Studies have shown that HIV positive individuals with HCV will have similar response rates to HCV treatment as HCV positive individuals without HIV. Patients should be monitored closely for possible side effects associated with interferon and ribavirin.

To learn more about HCV medications and their side effects, please see Treatment Options in the Hepatitis C (HCV) Information Booklet..

Support groups for coinfecting individuals are highly recommended due to the emotional complexities of living with these two life-threatening diseases. Additionally, support groups can be a good resource for information sharing since there is so much misinformation regarding these two diseases.

Conclusion

It is clear that HIV/HCV coinfection is becoming a large public health problem in this country. Recent research has shown that both HIV and HCV can be successfully treated. However, we have a long way to go before we truly understand these diseases and how they interact with each other. Clearly, more research and doctor /patient education is required.

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