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HCV: Important Study on Dried Blood Stability

Alan Franciscus, Editor-in-Chief HCSP Publications

HOW LONG IS HCV STABLE

on exposed surfaces? In real world situations it would be almost impossible to effectively study this problem because of the many variables involved in testing blood on exposed surfaces such as room temperature, amount of blood exposed, viral load (low/high) and various contaminants in the environment. However, a recent study conducted by the Centers for Disease Control may shed some light on this issue and help provide a better understanding of the infectivity of HCV on surfaces which will help fine tune HCV prevention measures.

A study conducted by Kris Krawczynski et. al from the Centers for Disease Control and Prevention tested the stability of dried and stored serum of HCV infected blood in chimpanzees to determine how long HCV infected blood lives on an outside surface as well as the level of infectivity of the blood exposed.

Chimpanzee plasma (CID) divided into 105 infectious doses (genotype 1a) was dried in tubes under vacuum. After overnight drying (~16 hours) samples were either rehydrated with sterile water and stored at

-700C or transferred to a controlled environmental chamber (42% humidity, over saturated salt solution) for a 4 or 7 day storage at 250C and subsequently rehydrated with sterile water and kept at -700C.

Samples dried/stored 7 days and dried overnight were used for testing. To determine infectivity, samples of dried/stored plasma for 7 days, 4 days and overnight, were reconstituted in sterile water and injected into



No evidence of HCV infections was detected in the chimpanzee given either the 7-day or 14-day dried and stored samples.



a chimpanzee. The size of the infectious dose of each inoculum was calculated at 3.3 x 10⁴ CID. Plasma samples were tested for HCV RNA, HCV anti-body and alanine aminotransferase (ALT) levels

twice weekly. In addition, liver specimens were obtained weekly or biweekly and tested for hepatitis C virus antigen (HCVAg) and histopathology (liver health).

The chimpanzee was first inoculated with the HCV inoculum that was dried and stored for 7 days and followed during 129 days. Subsequently, the chimpanzee was inoculated with the HCV inoculum that was dried and stored for 4 days and followed for 134 days, and finally inoculated with the dried sample overnight and followed for 201 days. Data from three chimpanzees with untreated HCV inoculum were included in the study as a control group.

The authors found that HCV RNA (viral load) was detectable in plasma dried overnight and 7 days, but a ten fold decrease of detectable HCV RNA (viral load) was found in both of the samples compared with the HCV RNA level of the original, untreated HCV positive plasma sample. No evidence of HCV infections was detected in the chimpanzee given either the 7-day or 14-day dried and stored samples. All blood samples tested were

continued on page 6



IN THIS ISSUE:

News Roundup -----2

Dispelling HCV Myths -----4

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HEPSQUADS NEWS ROUNDUP

Liz Highleyman

■ HCV TREATMENT

Results from several studies of HCV treatment were presented at the American Association for the Study of Liver Disease (AASLD) conference held October 24-28, 2003 in Boston.

With improvements in HCV therapy, many researchers have turned their attention to so-called "hard to treat" populations. **African Americans** have a high rate of HCV and are usually infected with genotype 1. Dr. Lennox Jeffers presented results from a study of 78 African Americans and 28 Caucasians with genotype 1 HCV who received 48 weeks of treatment with pegylated interferon (Pegasys) plus ribavirin (Copegus). The sustained virological response (SVR) rate six months after the end of therapy was 26% for the African Americans compared with 39% for Caucasians. Although lower than that of whites, the African Americans' SVR rate in this study was higher than response rates seen in previous trials. Furthermore, the African Americans experienced lower rates of side effects and fewer withdrew from the study due to adverse events. Among those with a high HCV viral load, SVR rates were 20% for African Americans and 25% for Caucasians, and the researchers suggested that the difference in the overall SVR rate might be due to the higher initial viral

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"Patients with normal ALT levels were often considered to have mild hepatitis and could, therefore, wait for treatment," said Dr. Zeuzem. But the new data "challenge the old beliefs and show that normal ALT levels do not accurately reflect the condition of the patient's liver."

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loads in the African American subjects. Dr. William Cassidy and colleagues looked at the effect of HCV therapy on liver histology (tissue health) in the same study. Among the 53 African Americans and 16 Caucasians with paired pre- and post-treatment liver biopsies, the two groups had similar reductions in Knodell histological activity index scores (64% and 69%, respectively), but more African Americans had improved fibrosis scores (25% versus 6%).

There has been controversy about whether to treat the approximately one-third of HCV patients who have persistently normal alanine aminotransferase (ALT) levels. People with **normal**

ALT often do not progress to serious liver disease, and many experts believe they do not need treatment; nevertheless, some do develop fibrosis. Dr. Stefan Zeuzem from Homburg presented data from the first large international study of pegylated interferon (Pegasys) in patients with normal ALT. Participants received Pegasys plus ribavirin (Copegus) for 24 weeks (212 subjects), the same combination for 48 weeks (210 subjects), or no treatment (69 subjects). Overall, 30% of patients treated for 24 weeks and 52% treated for 48 weeks achieved an SVR. Among those with genotype 1, 40% treated for 48 weeks achieved an SVR. The untreated patients in the control arm experienced significant liver disease progression. Subjects with normal ALT in this study experienced fewer side effects than usually seen in studies of patients with elevated ALT. The results suggest that HCV positive people with normal ALT should be considered for treatment. "Patients with normal ALT levels were often considered to have mild hepatitis and could, therefore, wait for treatment," said Dr. Zeuzem. But the new data "challenge the old beliefs and show that normal ALT levels do not accurately reflect the condition of the patient's liver."

When to stop treatment is another unsettled issue. The usual recommendation is that therapy should be discontinued if there is no indication of effectiveness by 12 weeks. But, based on results from the European DITTO-HCV trial, it may be possible to predict treatment response as early as 1-4 weeks after starting therapy. Subjects in this study received pegylated interferon (Pegasys) plus ribavirin (Copegus). Among those classified as rapid viral responders—those whose HCV viral load declined by at least 99% during the first month of treatment—83% of patients with genotype 1 went on to achieve an SVR (similar to rates often seen for people with genotypes 2 or 3). These results suggest that the treatment response cut-off could be moved up, thereby reducing cost and side effects. Nevertheless, there is still support for the 12-week cutoff. Dr. Gary Davis and colleagues reported in the September 2003 issue of *Hepatology* that early virologic response (EVR) to pegylated interferon (Peg-Intron) plus ribavirin (Rebetol) correlates with SVR, and that the best definition of EVR was a reduction in HCV RNA by at least 2 logs after the first 12 weeks of therapy. Overall, 69%–76% of patients (depending on dose) achieved an EVR, and among these, 67%–80% went on to achieve an SVR. But patients who did not achieve an EVR did not respond to further therapy. "Patients who fail to achieve EVR will not clear the virus even if additional months of therapy are received," the researchers concluded. "Therapy can be confidently discontinued in those cases."

For people with **HCV/HIV coinfection**, when to stop remains unresolved. At the Interscience Conference on Antimicrobial Agents

continued on page 4

Dispelling HCV Myths

Alan Franciscus, Editor-in-Chief HCSP Publications

LAST YEAR I WROTE AN article for *Hepatitis Magazine* titled “Dispelling HCV Myths.” I have since used the idea of the article as a way to open up discussions in workshops and provide some education on the basics of hepatitis C. This is also a great way to gauge the level of knowledge from the workshop attendees so that you can tailor your presentation. I have used PowerPoint slides for discussion or printed the myths on index cards and passed them out to the workshop audience and asked for feedback. Below are a series of articles on dispelling these myths. If you would like a copy of the PowerPoint presentation complete with notes, please drop me a line at alanfranciscus@hcvadvocate.org.

Introduction

As the saying goes, “knowledge is power.” This is particularly true when it comes to living with a chronic illness such as hepatitis C. The more that people with HCV know about their disease, the better they will be able to manage their illness and advocate for themselves. Conversely, misinformation about hepatitis C can be especially dangerous, and could potentially lead to living in fear and isolation, making life with HCV even more difficult.

Considering that the hepatitis C virus was only identified in 1989, it is incredible how far we have come in our understanding of hepatitis C, and remarkable that we have medications that can eradicate the virus in up to 50% of people

infected with HCV. However, we have a long way to go before we completely understand hepatitis C, and we still await the development of medical treatment that can benefit everyone with HCV without the undesired side effects of the current medications.

In my everyday work I am constantly confronted with misinformation, half-truths, and outright lies about hepatitis C. What is interesting is how some of these myths have survived, even though we now have solid scientific data that should lay them to rest. This article will focus on some of the most common myths that I face on a daily basis in my work.

Myth - Hepatitis C is a death sentence

After an initial diagnosis of hepatitis C, one must confront his or her mortality. Many people believe that every HCV-infected person will die of hepatitis C, and that it will happen very soon. This is the biggest myth circulating in our community. In recent years we have studied many different populations that have acquired hepatitis C within the last 10, 20, or 30 years or more, and it has been well documented that only 10-25% of people chronically infected with HCV will experience serious liver disease progression that may result in death. The remaining 75-90% of people with chronic hepatitis C will live long and productive lives. The percentage of people progressing to serious liver disease would drop even lower if expanded testing and

care were available to everyone at risk for hepatitis C. But this is not to say that people with hepatitis C do not suffer and die. Conservatively, it is estimated that there are approximately 2.7 million people in the United States who are chronically infected with HCV, so the sheer numbers speak to the amount of suffering and death in our community.

Myth - Everyone with hepatitis C should be treated with current HCV medications

The vast majority of people with chronic HCV do not experience serious disease progression and may never need to be treated. Hepatitis C behaves differently in different people, and as a result everyone with HCV should be evaluated on an individual basis. Currently, the major goals of HCV therapy are viral eradication, improvement in quality of life, and stopping or slowing disease progression. Treatment decisions should be made in partnership with a medical provider based on several considerations, including current health status, existing disease progression, likelihood of responding to current therapies, and quality of life. For example, people with minimal disease progression (little or no scarring of the liver) may want to wait until more effective medications are available that do not have as many undesired side effects. Conversely, someone with a decreased quality of life or serious disease progression (moderate to severe scarring of the liver) should be more

continued on page 6



Medical Writers' Circle

is a publication of the Hepatitis C Support Project. It consists of a series of articles written by medical professionals about the management and treatment of hepatitis C. The articles are available for printing at the Hepatitis C Support Project website.

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NEWS ROUNDUP

continued from page 2

and Chemotherapy (ICAAC) in September 2003, Dr. Joaquin Berenguer presented data indicating that if coinfecting people treated with standard interferon plus ribavirin do not achieve an EVR, they are unlikely to achieve an SVR. The researchers concluded that the 12-week cut-off is appropriate for coinfecting people as well as those with HCV alone. But Dr. Shyam Kottlilil of the National Institutes of Health and colleagues found that about 70% of 29 coinfecting patients taking pegylated interferon (Peg-Intron) plus ribavirin (Rebetol) achieved an EVR at 12 weeks, 50% achieved an end-of-treatment response (ETR), and only 15% achieved an SVR—although even those without a virological response showed improved biochemical markers and histology scores. Previous research suggested that coinfecting people respond more slowly to interferon therapy and may take longer to achieve an EVR than those with HCV alone. Dr. Kottlilil suggested that the 12-week cutoff may be too soon for coinfecting patients, and that more might achieve an SVR with longer treatment.

■ REDIPEN

In October 2003, the Food and Drug Administration (FDA) approved a new **Redipen for injection of Peg-Intron**. The new device is easier to use than the old vial and syringe. Peg-Intron is dosed by weight, and the Redipen is available in four doses: 50, 80, 120 and 150 mcg. To use the pre-filled, single-dose pen, the patient pushes down on the pen to combine the powder with sterile water (both stored in the device), dials the appropriate dose, and injects the medication. The Redipen should be available in pharmacies early this year.

■ NEW HCV DRUGS

At the October AASLD meeting, researchers reported on several experimental HCV treatments on the horizon. One promising candidate is Boehringer Ingelheim's **BILN 2061**, the first antiviral drug to specifically target HCV. In two small studies, the drug reduced HCV viral load both in patients with genotype 1 and cirrhosis, and in those with genotypes 2 or 3 and minimal fibrosis. In both studies, viral load rebounded to baseline levels after BILN 2061 was discontinued. No safety issues or major side effects were identified.

Viramidine is a prodrug of ribavirin (it is converted to ribavirin in the body) that appears less likely to cause anemia. L.T. Yeh and colleagues found that in monkeys, viramidine was slowly converted to ribavirin in the liver and was less toxic to red blood cells. Valeant Pharmaceuticals (formerly ICN) recently announced that it would soon commence Phase III clinical trials and hopes to have viramidine on the market by 2007.

At AASLD, Dr. Stephan Kaiser reported promising results from a trial of previous non-responders using induction doses of **consensus interferon** (interferon alfacon, or Infergen) followed by consensus interferon plus ribavirin. An end-of-treatment response was seen in 59–66% and an SVR in 37–43% (depending

on dose). The lower of the two consensus interferon induction doses was about as tolerable as pegylated interferon plus ribavirin, but the higher induction dose was less well tolerated. At the HepDART conference in December, researchers presented interim results from a study of consensus interferon plus interferon gamma (Actimmune) in 32 previous non-responders. After 12 weeks of Infergen/Actimmune, 65% had at least a 2-log drop in viral load, and 38% were undetectable. SVR data has not yet been collected, but the combination appears promising.

Other HCV therapies in the pipeline include **Albuferon** (interferon genetically combined with albumin to make it last longer in the body), the nucleoside analog **isatoribine** (with promising safety data from a Phase IB trial announced in December, Anandys Pharmaceuticals expects to start a Phase II trial in early 2004), Vertex's IMPDH inhibitor **merimepodib** (with promising Phase II results announced this past fall, the company plans to begin a Phase IIB trial in the second half of 2004), Schering-Plough's protease inhibitor **SCH-6**, Vertex's protease inhibitor **VX-950** (expected to enter human trials in 2004), anti-sense therapy, and a new approach called RNA interference.

■ HBV TREATMENT

Researchers at AASLD presented final 52-week Phase IIB trial results showing that **telbivudine** (LdT) suppressed HBV replication and reduced ALT levels more than lamivudine (3TC, Epivir-HBV). After one year of treatment, 61% of patients receiving

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Although antiviral drugs such as telbivudine, lamivudine, adefovir (Hepsera) and tenofovir (Viread) are considered a mainstay of HBV therapy, data presented at AASLD suggests that pegylated interferon (Pegasys) is more effective in patients with HBeAg-negative HBV (also called variant or pre-core mutant), considered the most difficult to treat.

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telbivudine monotherapy had undetectable HBV versus 32% of those receiving lamivudine monotherapy. Interestingly, patients receiving telbivudine/lamivudine combination therapy had intermediate results. At ICCAC, researchers stated that telbivudine also appears safe and effective in people with HBV/HIV coinfection. In this study, patients who received either telbivudine alone or telbivudine plus lamivudine for one year had greater reductions in HBV viral load than those taking lamivudine alone. Although antiviral drugs such as telbivudine, lamivudine, adefovir (Hepsera) and tenofovir (Viread) are considered a mainstay of HBV therapy, data presented at AASLD suggests that pegylated

continued on page 5

NEWS ROUNDUP

continued from page 4

interferon (Pegasys) is more effective in patients with **HBeAg-negative HBV** (also called variant or pre-core mutant), considered the most difficult to treat. Dr. Patrick Marcellin and colleagues from France reported that in a Phase III study of more than 500 participants with HBeAg-negative HBV treated for 48 weeks, Pegasys was more effective than lamivudine in reducing HBV viral load (43% versus 29%) and normalizing ALT levels (59% versus 44%); adding lamivudine along with Pegasys provided no additional benefit. However, Italian researchers recently reported that long-term retreatment with lamivudine did appear safe and effective in relapsed patients with HBeAg-negative HBV. Lamivudine is active against HBV, but viral breakthrough often occurs due to the emergence of lamivudine-resistant virus. Previous research has shown that adding interferon helps slow the development of resistance.

■ HEPATITIS AND OBESITY

Canadian researchers reported in the September issue of *Hepatology* that obese patients (those with a body mass index [BMI] greater than 30 kg/m²) do not respond as well to HCV treatment. “Obese patients as judged by their BMI, independent of genotype and cirrhosis, had approximately an 80% lower chance of a sustained response to therapy compared with normal or overweight patients,” wrote Dr. Brian Bressler and colleagues, but “[t]he mechanism whereby obesity may affect the antiviral response to treatment is not completely understood.” In related news, Dr. Jason Dominitz and colleagues reported in the October issue of *Gastroenterology* that hospitalization or death due to cirrhosis was more likely among obese individuals. These two studies support the general recommendation that people with HCV should eat a healthy, balanced diet and get regular, moderate exercise.

■ HCV AND PREGNANCY

According to a report in the October issue of the *Journal of Medical Virology*, pregnancy may promote the natural resolution of hepatitis C in chronically infected women. In a study of 22 pregnant and 120 non-pregnant women with HCV, researchers found that two of the pregnant women no longer showed evidence of HCV after giving birth, and one temporarily became undetectable during pregnancy (a combined rate of 14%). Among the non-pregnant women, one became permanently undetectable and one became transiently undetectable (a combined rate of 2%). The authors noted that it is not well understood how pregnancy and delivery might influence HCV, but said their findings may be due to the immune system rebound that occurs after giving birth. In related news, researchers from Taiwan recently reported that hormonal factors appear to affect the development of liver cancer. In this study, increased exposure to estrogen—due to more pregnancies, later menopause, or hormone replacement therapy—was associated with a lower risk of hepatocellular carcinoma, a type of liver cancer that may develop in people with chronic hepatitis B or C.

■ HCV TRANSMISSION

Sexual transmission of hepatitis C remains controversial. At the AASLD meeting, Dr. Norah Terrault presented data on sexual transmission of HCV in monogamous heterosexual couples in the HCV Partners Study. Dr. Terrault’s team found that the prevalence of HCV among sexual partners of HCV-infected individuals was 4%. However, 40% of partners were discordant (different serotypes), suggesting that the actual transmission rate was about 2%. Condom use did not affect the rate of transmission. Although this study appears to confirm that sexual transmission of HCV is rare, other research suggests that the transmission rate may be higher among gay men and among people with multiple sexual partners.

At the September ICAAC meeting, researchers from the University of Washington reported that people with higher HCV viral loads were more likely to have the virus in their saliva. The researchers collected saliva from 12 volunteers for 21 consecutive days, and found HCV in 21% of the samples; no individuals with a viral load below 1 million copies had evidence of HCV in their saliva. Importantly, people whose gums bleed when they brush their teeth (a sign of gum disease) were more likely to have HCV in their saliva. Although the study does not directly provide information about HCV transmission, it does reinforce recommendations about maintaining good oral hygiene and not sharing toothbrushes.

Finally, researchers from the U.S. and England reported that acupuncture modestly increased the risk of HCV. Most of the apparent cases of transmission via acupuncture occurred in Asia. The authors emphasized the importance of using disposable sterile needles for the procedure.

■ HEPATITIS EPIDEMIOLOGY

Although their jobs may expose them to blood, a new report in the November 24, 2003 issue of the *Archives of Internal Medicine* indicates that firefighters, paramedics, and EMTs are not at higher risk of HCV compared with the general population if they adhere to recommended standard precautions. After studying blood samples from nearly 3,000 emergency workers, the researchers concluded that first responders did not have a higher rate of HCV infection. HCV was associated with a history of sexually transmitted diseases, drug use, or blood transfusions, but not with occupational exposure. The authors recommended that emergency workers should always use standard precautions and should receive the hepatitis B vaccine.

On that note, the Centers for Disease Control and Prevention (CDC) announced in December that the overall rate of hepatitis B had declined in the U.S. during the past decade, dropping by 67%. However, the rate varied greatly by age. Among children (infants through age 19), HBV infection fell by 89%. But among men aged 20–39, the rate increased by 5%, and among men and women age 40 or older, it increased by 20% and 31%, respectively. The decline among younger individuals reflects the success of universal vaccination programs for infants, and for adolescents not vaccinated as infants. CDC officials said the new data highlight the need to increase HBV vaccination among adults.



HCV MYTHS

continued from page 3

aggressive in seeking medical treatment. The exception is people with HCV genotypes 2 and 3 since they have such a high treatment response rate (up to 89% sustained virological response in some studies).

Myth - There are no effective medical treatments for hepatitis C

Treatments for hepatitis C have improved dramatically since the early days of interferon monotherapy, when sustained virological response rates (SVR, remaining virus-free six months after the end of treatment) were measured in the single digits. Today we have two FDA-approved regimens of pegylated interferon plus ribavirin: Peg-Intron plus Rebetol brand ribavirin, which has produced SVR rates of 42%

Studies have shown that HCV remains eradicated in up to 95% of people who achieve SVR—which is pretty close to a cure!

for HCV genotype 1 (30% for patients with high viral load) and 82% for genotypes 2 and 3; and Pegasys plus Copegus brand ribavirin, which has produced SVR rates of 46-51% for genotype 1 (41-46% for patients with high viral load) and 76-78% for genotypes 2 and 3. Studies have shown that HCV remains eradicated in up to 95% of people who achieve SVR—which is pretty close to a cure!

Note: *The cure word is a hotly debated topic. It is also a very*

good subject to talk about in workshops. What does the 'cure' word mean in regards to hepatitis C? What are the ramifications of using the 'cure' word? Why do some people refuse to use it and others embrace it? At the very least it will raise the level of debate in a workshop.

Myth - Most people can not tolerate the side effects from current HCV medications

This common myth prevents many people from seeking treatment because they have heard horror stories or worst-case scenarios experienced by some people taking the current HCV medications. The truth is that therapy can be difficult, but most people can complete the treatment regimen if they receive appropriate support from medical providers, family, friends, and others. Unfortunately, many people do not have access to the supportive care that is such an important part of the treatment process. Of course, there are people who cannot tolerate HCV therapy for a variety of reasons, but they are the exception rather than the rule.

Myth - Hepatitis C is a sexually transmitted disease

HCV is transmitted in the vast majority of cases by blood-to-blood exposure. However, like many myths, this one is grounded in some truth. Hepatitis C can be transmitted sexually, but the risk is very low. It is difficult to study sexual transmission of HCV, but the majority of studies conducted to date have shown a 0-3% chance of contracting HCV through unprotected sex in stable monogamous heterosexual relationships. In fact, the Centers for Disease Control and Prevention does not recommend barrier protection to prevent HCV transmission for heterosexual couples in exclusive relationships. However,

this recommendation must be considered carefully, since there is still a 1-in-1,000 to 1-in-10,000 chance of transmitting HCV to one's sexual partner even in this setting. Safer sex is recommended for people in so-called "high-risk" groups, usually defined as people with multiple sexual partners, men who have sex with men, prostitutes, and people seen at STD clinics. In these populations the risk of contracting HCV through unsafe sex is believed to be much higher, but more studies are needed to clearly define the rate of sexual transmission.

Myth - HCV viral load correlates with disease progression

This is an especially destructive myth since HCV RNA (viral load) levels can be so high in people with hepatitis C. It is logical to assume that if a person has more virus, the disease will progress more quickly, but we now know that there is no correlation between the amount of virus and the stage or degree of liver damage. In fact, the only reasons for measuring HCV viral load are to confirm active infection (to make sure that there is replicating HCV), to predict treatment response (the lower the viral load, the better chance one has to eradicate the virus), and to make sure HCV medications are working.

Myth - Genotype 1 is the 'worst' genotype

This myth is the result of earlier studies that reported a faster rate of disease progression in people infected with HCV genotype 1. Like many reports in the early years of HCV research, this has been debunked by more recent research which has not shown a correlation between genotype 1 and more rapid disease progression. It is believed that genotype 3 may

cause steatosis which could potentially increase HCV disease progression rate. However, some recent studies have shown conflicting results and more studies are needed to fully understand the connection

continued on page 7

HCV STABILITY

continued from page 1

negative for HCV RNA and HCV antibodies. In addition, ALT levels remained in the normal range. However after inoculation with the overnight dried sample, HCV RNA was detected in the blood of the chimpanzee from day 7 post inoculation and viral load reached 6.0 to 7.3 logs IU/mL. HCV Ag positive hepatocytes (liver cells) were observed from day 11 post inoculation, seroconversion to anti-HCV was observed on day 127, and the chimpanzee was still positive for HCV RNA (4.8 logs IU/mL) at day 201 post infection. ALT activity level was elevated over the normal range from day 11 post inoculation and remained elevated until the end of the observation period. Virologic, serologic, and clinical evidence of HCV infection and acute hepatitis was found in all three control animals.

The authors of this study concluded that infectivity studies in a chimpanzee suggest that HCV may survive on environmental surfaces at room temperature for **at least 16 hours but not longer than 4 days**. The potential for HCV to survive in the environment re-emphasizes the importance of cleaning and disinfection procedures, safe therapeutic injection practices, and harm reduction counseling and services for injection drug users.



HCV MYTHS

continued from page 6

between genotype 3, steatosis and disease progression. Genotype information is important, though, for people seeking treatment, since genotypes 2 and 3 have been shown to respond more favourably to current HCV medications. People with genotype 2 or 3 have the added benefits of a lower dose of ribavirin and a shorter duration of treatment compared to people with genotype 1.

Myth - HCV is an asymptomatic disease

This is another myth that is grounded in some truth, but has led to much suffering for people with hepatitis C. It is well documented that people with decompensated cirrhosis may have severe or even life-threatening conditions such as itching, ascites (accumulation of fluid in the abdomen), uncontrolled bleeding, and encephalopathy (brain disease). However, people with HCV may experience many debilitating symptoms even if they have mild disease. This is because HCV is not only a liver disease but affects other parts of the body through various mechanisms, mostly the immune system. The more common symptoms reported by people with HCV include fatigue (mild to severe), muscle or joint pain, headaches, depression, anxiety, "brain fog," and abdominal pain.

Many patients report that their symptoms are not acknowledged or taken seriously by their medical providers, especially if the providers are not well versed in hepatitis C.

Myth - There is a vaccine to protect against hepatitis C

This myth results from people constantly confusing hepatitis A or hepatitis B—both preventable with vaccines—with hepatitis C. Unfortunately, developing an effective HCV vaccine will be very difficult because the virus constantly mutates. Research is underway, but an effective vaccine is not expected for at least 10 years.

Myth - Sharing household items such as razors and toothbrushes poses a very high risk for transmitting HCV

There is a potential risk of transmitting HCV by sharing personal items, but the risk is very low—in order to transmit HCV, the blood of an HCV-infected person would have to get into the blood of another household member. To prevent HCV transmission in a household setting, do not share personal items, such as toothbrushes or razorblades, and cover items that could infect another person. The good news is that we know hepatitis C is not spread by sneezing, hugging, sharing eating utensils or drinking glasses, preparing food, or any other kind of casual contact.



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