Did you know that people who were treated with direct-acting antiviral (DAA) medications...

- Were significantly less likely to die than the people who were untreated.
- Had at least a 20% decrease in liver fibrosis after 24-weeks of the completion of DAA therapy.
- Experienced a 71% reduction in liver cancer risk after being cured with a DAA medication.

The studies on the following page looked at treatment with DAAs to find out if curing hepatitis C (HCV) with DAAs improved HCV disease progression and reduced the risk of liver cancer. These studies were published in journals to provide insight into the effectiveness and benefits of DAA therapy.

--- CONTINUED ON PAGE 2 ---
Effect of Paritaprevir/Ritonavir/Ombitasvir/Dasabuvir and Ledipasvir/Sofosbuvir Regimens on Survival Compared With Untreated Hepatitis C Virus–Infected Persons: Results from ERCHIVES—A. A. Butt, et. al.

SOURCE: Clinical Infectious Diseases, Volume 65, Issue 6, 15 September 2017, Pages 1006–1011

Study Aims and Results
To determine the short-term outcome of treatment with Viekira Pak (paritaprevir/ritonavir/ombitasvir/dasabuvir or PROD) and Harvoni (ledipasvir plus sofosbuvir) compared to untreated patients.

The study was conducted in the Veterans Medical Administration using ERCHIVES—Electronically Retrieved Cohort of HCV Infected Veterans. There were three groups:
- Viekira Group - 1,473 patients
- Harvoni Group - 5,497 patients
- Control Group – 6,970 patients who were HCV-positive but were not being treated

All of the persons were well-matched except the treated patients were more likely to be obese and have cirrhosis. The untreated people were more likely to have more serious kidney disease, alcohol or drug abuse or dependence, and anemia. The authors stated that the differences in the groups “were not associated with increased mortality” (death).

At the 18-month post-treatment follow-up period, the number of people who died was significantly higher in the untreated group compared to the treatment groups.

Conclusions
The PROD and Harvoni treatment groups had a considerably lower death rate than in the patients who were untreated.

Editorial Comments
It is remarkable that such a substantial benefit from treatment was reported in the group who were treated with DAAs only 18 months after the completion of therapy.

“The PROD and Harvoni treatment groups had a considerably lower death rate than in the patients who were untreated”
Study Aims and Results

The authors wanted to understand how being cured of hepatitis C (HCV) reduces the risk of developing liver cancer. This was a retrospective study conducted at the VA National Healthcare System analyzing healthcare records of 62,354 veterans who received HCV treatment between 1/1/1999 to 12/31/2015. The medications and the number of patients treated included:

- 35,871 (58%) patients who received interferon-only regimes,
- 4,535 (7.2%) patients who received interferon plus a direct-acting antiviral (DAA) therapy, and
- 21,948 (35%) patients who received direct-acting antiviral only therapy.

The authors continued to follow these patients through June 15, 2017.

People cured with DAAs only or DAAs plus interferon treatment were not found to be at an increased risk of developing liver cancer. Furthermore, being cured with a DAA was associated with a 71% reduction in liver cancer risk compared to people who did not achieve a cure.

Conclusions

The risk of developing liver cancer was dramatically lower after being cured with a DAA therapy.

Editorial Comments

Hopefully, this study and the others listed in SnapShots will help to reduce some of the fear regarding the risk of liver cancer and DAA therapy. This study provides real-world information with a large patient population that should contribute to the positive data that treatment with DAAs decreases or eliminates the risk of liver cancer.

Unfortunately, the risk of developing liver cancer for those with severe fibrosis or cirrhosis is reduced but not eliminated. This is the reason that medical providers should continue to screen for liver cancer.

Note: HCC = liver cancer. This graph depicts the rate of liver cancer in people who were cured (SVR) of hepatitis C vs. people who were not cured of hepatitis C over a 20-month period.
Regression of Liver Fibrosis over a 24-Week Period After Completing Direct-Acting Antiviral Therapy in Patients with Chronic Hepatitis C Receiving Care Within The National Hepatitis C Elimination Program in Georgia: Results of Hepatology Clinic HEPA Experience--E. Dolmazashvili, et. al.

SOURCE: 2017 Aug 29. doi: 10.1097/MEG.0000000000000964

Study Aims and Results
The study was conducted to understand the effect of HCV treatment—specifically direct-acting antiviral medications (with and without interferon)—on the improvement of liver stiffness measurement. Liver stiffness measures the health of the liver including the amount of scarring of the liver.

There were 304 patients enrolled in this prospective study. The technology used to measure liver scarring was Fibroscan. The majority of patients were men (88%) and the average age was 49 years old. The genotypes treated were genotype 1 (47%); genotype 2 (17%) and genotype 3 (37%).

The treatment consisted of sofosbuvir containing regimens—pegylated interferon, sofosbuvir plus ribavirin-153 patients (50%); sofosbuvir plus ribavirin-84 pts (28%); sofosbuvir, ledipasvir plus/minus ribavirin-67 pts (99%). The cure rate for all of the genotypes was 90%.

A total of 198 of patients had at least a 20% decrease in liver stiffness. Achieving a cure was predictive of a decrease in liver stiffness. Unfortunately, more than half of the people in the study who were cirrhotic remained so even after treatment.

Conclusions
There was a 20% decrease in liver stiffness after treatment ended.

Editorial Comments
These studies provide information that should contribute to the positive data that treatment with DAAs decreases or eliminates the risk of liver cancer.

The people with advanced fibrosis or cirrhosis will continue to have some form of disease progression even if cured. For this reason, it is vital that their medical providers assess their liver health on a regular basis.

Those who were cured with a DAA of course, there is a perfect solution to this problem about hepatitis C and liver cancer: Test, Treat & Cure Early!

Guidelines for people who are cured with severe fibrosis or cirrhosis:

American Association for the Study of Liver Disease Guidelines (AASLD) HCV Guidelines http://www.hcvguidelines.org/evaluate/monitoring
HHS reports that nearly nine out of ten adults may lack the skills needed to manage their health and prevent disease. Low literacy is linked to poor health outcomes and higher healthcare costs.

Improving health literacy is one of the many goals of the Affordable Care Act (commonly called Obamacare). The Centers for Disease Control and Prevention (CDC) also provides resources to help organizations, communities and people to improve health literacy.

Hepatitis C

In 2012, the CDC recommended screening for hepatitis C virus (HCV) infection in persons at high risk for infection and adults born between 1945 and 1965. The United States Prevention Services Task Force issued the same recommendations in 2013.

However, despite the recommendations, screening is still low. Research published in the American Journal of Preventive Medicine shows that despite the recommendations, the incidence of testing hasn’t increased much. (Recent Hepatitis C Virus Testing Patterns Among Baby Boomers, Ahmedin Jemal, Stacey A. Fedewa, July 2017) In 2013, 12.3% of baby boomers were tested for hepatitis C; it increased slightly to 13.8% in 2015. We need to test all baby boomers for hep C.

The ability to communicate effectively can change the world. When Alan Franciscus published the first HCV Advocate in 1998, he didn’t know he was going to change the world. Alan provided reliable information at a time when people were starving for it. This simple act empowered those of us who were living with hepatitis C and inspired an advocacy movement. As a result, the world was changed, proving the adage that the pen is mightier than the sword.

Although what we know about hep C has come a long way, there is still more work to be done. Three major problems exist:

- Screening of people at risk for hepatitis C is insufficient.
- Access to care and treatment is inadequate.
- There is a huge need for more effective measures to prevent viral hepatitis transmission.

In short, we need to increase our education efforts. What better time to jump in than now during Health Literacy Month.

Health Literacy

The U.S. Department of Health and Human Services (HHS) describes health literacy as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.” In plainer language, health literacy is information that is easy to understand.

Many factors affect our ability to obtain, process, and understand basic health information. Culture, inadequate education, language, communication styles, poverty, illness, healthcare system complexities, and lack of access to healthcare are some of these factors.
The primary responsibility for improving health literacy falls to public health professionals and the healthcare and public health systems. Since they don’t seem to be doing this effectively, then we need to help to get the word out. Hepatitis C advocates are doing a phenomenal job, but like those in the healthcare and public health systems, their resources are stretched. It’s time for all hands on deck.

What You Can Do
I believe that if everyone informs a few people about the need to be tested, we can make a huge difference. Craft a simple message and then share it with everyone you feel comfortable telling. Here’s an example, “The CDC recommends hepatitis C testing for people born from 1945 through 1965.” Here’s an even shorter message, “Do you need to be tested for hep C?” After your message, you can provide a link to more information.

Once you have your message, share it. Here are some easy ways to spread the word:

• Have a conversation. Ask every baby boomer you meet to get tested.
• Let your email signature line do the talking. I use a graphic from the CDC’s website. It automatically attaches to every message I send out.
• Post messages to Facebook, Instagram, Pinterest or Twitter reminding the world about hepatitis C.
• Write a letter to the editor of your local paper about the need to reach people who have hepatitis C but who are not yet diagnosed.
• Ask your local radio station to run a public service announcement (PSA). The CDC provides some scripts.
• Send e-cards to friends, family, and colleagues who are baby boomers, encouraging them to get tested for hepatitis C.
• Tell your hep C story.

If you are tempted to ignore this opportunity to raise awareness, keep in mind that the number of people who die every year from hepatitis C is greater than the combined total of deaths from all other 60 infectious diseases. We have lives to save. Alan Franciscus and other advocates have contributed a great deal in the past 20 years. Let’s support that effort, stopping only when hepatitis C is stopped.

Lucinda K. Porter, RN, is a long-time contributor to the HCV Advocate and author of “Free from Hepatitis C” and “Hepatitis C One Step at a Time.” She blogs at www.LucindaPorterRN.com and HepMag.com

References:
• Centers for Disease Control and Prevention - www.cdc.gov/healthliteracy/learn/index.html
• Health Literacy) www.cdc.gov/knowmorehepatitis (Tools)
• Center for Health Care Strategies - www.chcs.org/resource/health-literacy-implications-of-the-affordable-care-act
• HCV Advocate - www.hcvadvocate.org
• Hep Magazine - www.hepmag.com/category/hep-stories
• Institute for Healthcare Advancement - www.iha4health.org
• Plain Language.gov www.plainlanguage.gov
Statistics are used in the fight to end the hepatitis C epidemic and the opioid crisis; stats show the way certain things have been, most likely are right now and will reasonably end up if nothing is done. Besides laying a foundation for understanding a certain event or situation, statistics and information are neatly packaged inside national ad campaigns and marketing materials. They make their way from the boardrooms of government agencies, private and non-profit organizations and pharmaceutical companies, to our televisions and smart phones.

Generally, these messages are factually accurate and straightforward. The intent is not to deceive; it is to inform and motivate. This is a great goal and necessary to raise awareness. However, it may be having the opposite effect, because what a statistic or fact represents isn’t always 100% reliable. The ugly side of well-meaning health campaigns or awareness efforts can show up subtly as internalized stigma, a self-defeating mentality and result in further closing off marginalized populations through something called “othering.” Simply put, othering is a way we protect ourselves by separating those around us into groups. We do this in a lot of ways but the outcomes are what I’m focused on now.

The example I often use is to think about our cultural mindset during the early stages of the AIDS epidemic. If you were a gay male, you were going to get AIDS and die. We know today that isn’t true. There are things we all do that can place us at greater risk to contract HIV, but simply being a certain sexual orientation does not mean you are destined to get a life-threatening virus. If you take steps to protect yourself and engage in safer sex you can lower your risk. You also can get HIV if you are a straight male or female, white or black, rich or poor, etc. Although this is common sense, it’s important to cover this briefly so we can understand how it relates...
to the way we view hepatitis C today. Because in a lot of ways we see it in much the same way.

The following statistic is often used when talking about hepatitis C, “85% of people who inject drugs will get hepatitis C at some point in their life.” Fact. Done. Let’s move on. Except no. How many of you reading this have had someone close to you, someone you’ve worked with say, “What’s the point, I’m just going to get it anyway.” The problem with statistics is they are two dimensional figures trying to represent three dimensional objects and relationships. The depth and breadth of what they represent isn’t easily translatable. And because of this, how they are interpreted and what they can be used for is flexible.

The dangers of misusing, or representing statistics and information are plentiful, but the greatest danger is how they can affect the way we think about ourselves and those around us. For example, if 85% of people who inject drugs get hepatitis C, and most of the ads and information I’m seeing support that idea, then what risk am I at if I don’t belong to that group? We’ve seen the negative affect of this in trying to kick start the screening of baby boomers, or birth cohort testing, which includes anyone born between 1945-1965. Locally, many providers tell me when bringing up testing with patients, their reactions of offense and dismissal are immediate, “I don’t use drugs, why do I need to worry.” And even when we do increase and maximize the screening of baby boomers and people who inject drugs (PWID), we now know that up to 25% of hepatitis C positives can be missed.

We focus on those two groups because baby boomers represent the biggest portion (prevalence) of people who have hepatitis C, while PWID are getting it at the greatest rates (incidence). I’m not interested in arguing the mathematical validity or accuracy of statistics, because if the research and methods are sound then so too are the results. What I am concerned with is how that information creates a frame through which we see ourselves and others. Health campaigns are crucial and beneficial to increasing awareness, screening and treatment. They also have the potential to increase stigma and marginalization in the public, as well as affect screening and treatment completion. How people see themselves and how they seem to other people affects their motivation to improve their lives and health. According to a research study published a couple of years ago, 30% of PWID will contract hepatitis C within the first 2 years of beginning injection drug use. The fact that many transmissions are linked to unsafe injecting or sharing equipment is true. Yet, we must ask ourselves how many of those behaviors are possibly affected by the belief that a statistic is their fate, so what’s the point?
A brief overview of how this pipeline is laid out:

The Pipeline will be updated when changes occur and will only be included on the website—http://hcvadvocate.org/treatment/drug-pipeline-monthly-report/

Genotype(s): This lists the drugs or combination of drugs and the particular genotype or genotypes that the drug is active against.

Comments: This section will list the study results. Within this section, I will list the genotype(s) being studied and the phase of the study with a brief recap of the study.

You will note that many of the drugs or combinations of drugs are pan-genotypic—that is they work on many or most of the HCV genotypes. Note: There is more detailed information about the drugs in development in our newsletter (http://hcvadvocate.org/publications/newsletter/) and our blog (http://hepatitisc.hcvadvocate.org/) and in the HCV Advocate Hepatitis C Drug Pipeline & Conference Coverage site hcvdrugs.com

If you are interested in finding out about clinical trials visit HCV Advocate Clinical Trial Reference Guide (http://hcvclinical.hcvadvocate.org/) for a list of trials that are currently recruiting patients.

<table>
<thead>
<tr>
<th>Merck</th>
<th>Genotype(s) 1, 2, 3, 4, 5, 6 (Pan-genotypic)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>COMENTS:</td>
</tr>
<tr>
<td></td>
<td>• Phase 2- AASLD 2016:</td>
</tr>
<tr>
<td></td>
<td>C-Crest: The trial was a phase 2 study of a</td>
</tr>
<tr>
<td></td>
<td>3-drug co-formulation of MK-3682 (polymerase</td>
</tr>
<tr>
<td></td>
<td>inhibitor), grazoprevir (protease inhibitor)</td>
</tr>
<tr>
<td></td>
<td>plus ruzasvir (NS5A inhibitor) with and wi</td>
</tr>
<tr>
<td></td>
<td>thout ribavirin to treat HCV genotypes 1,</td>
</tr>
<tr>
<td></td>
<td>2 and 3. The treatment period was 8, 12 or</td>
</tr>
<tr>
<td></td>
<td>16 weeks. In the people who were previously</td>
</tr>
<tr>
<td></td>
<td>treated with pegylated interferon plus rib</td>
</tr>
<tr>
<td></td>
<td>avirin the SVR12/cure rates were 95% to 100</td>
</tr>
<tr>
<td></td>
<td>% in genotype 1a, 1b and 3. In people with</td>
</tr>
<tr>
<td></td>
<td>genotype 2 the cure rate was 87% in the</td>
</tr>
<tr>
<td></td>
<td>8-week group and a 100% rate in the 12-week</td>
</tr>
<tr>
<td></td>
<td>group and 96% to 98% in the 16-week groups.</td>
</tr>
<tr>
<td></td>
<td>There was very little difference in cure ra</td>
</tr>
<tr>
<td></td>
<td>tes between the groups who had cirrhosis,</td>
</tr>
<tr>
<td></td>
<td>and who did/did not receive ribavirin.</td>
</tr>
<tr>
<td></td>
<td>C-Surge: An on-going phase 2 study to treat</td>
</tr>
<tr>
<td></td>
<td>people with genotype 1 who had failed a pr</td>
</tr>
<tr>
<td></td>
<td>vious course of a direct-acting antiviral t</td>
</tr>
<tr>
<td></td>
<td>herapy (Harvoni or Zepatier) using MK-3682,</td>
</tr>
<tr>
<td></td>
<td>grazoprevir and ruzasvir with and without</td>
</tr>
<tr>
<td></td>
<td>ribavirin. In the group that received ribav</td>
</tr>
<tr>
<td></td>
<td>irin the treatment duration was 16 weeks; in</td>
</tr>
<tr>
<td></td>
<td>the group that did not receive ribavirin the</td>
</tr>
<tr>
<td></td>
<td>treatment duration was 24 weeks. The cure ra</td>
</tr>
<tr>
<td></td>
<td>tes were 98% (43 of 44 pts) in the 16 week g</td>
</tr>
<tr>
<td></td>
<td>roup that received ribavirin and 100% (49 of</td>
</tr>
<tr>
<td></td>
<td>49 pts) in the 24 week group that did not re</td>
</tr>
</tbody>
</table>

— CONTINUED ON PAGE 10
**Janssen (Achillion/Alios) Genotype(s) 1,2,3,4,5,6 (Pan-genotypic)**

Janssen has discontinued drug development of this combination.

<table>
<thead>
<tr>
<th>Dose</th>
<th>HCV Genotype</th>
<th>Dosing Duration (weeks)</th>
<th>Number (%) with undetectable HCV RNA at SVR24*</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL-335 (mg QD)</td>
<td>ODV (mg)</td>
<td>SMV (mg QD)</td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>50 QD</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>800</td>
<td>50 QOD</td>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>800</td>
<td>50 QOD</td>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>800</td>
<td>50 QOD</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>800</td>
<td>50 QOD</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>800</td>
<td>50 QOD</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>800</td>
<td>50 QOD</td>
<td>75</td>
<td>3</td>
</tr>
</tbody>
</table>

QD: every day; QOD: every other day; RNA: ribonucleic acid; SVR: sustained virologic response. *All results SVR24, with the exception of genotype 3 which is SVR12 **One patient did not attend SVR12 follow-up.

Note: The two drug combination of odalasvir and AL-335 for a treatment duration of 8 weeks will not proceed into phase 3 clinical trials. Clinical trial development of the combinations to treat HCV genotype 3 will also not move forward.

The combinations were generally safe and well-tolerated.

The next phase of development is to study these combinations in phase 2B studies.
WHAT’S UP!

Don’t want to go through this by yourself?

You don’t have to! Pack Health’s health coaching program for hepatitis C is now fully covered by grant funding - just use our promo code and you’ll get 3 months of one-on-one support on your schedule at no cost to you.

Whether you need help accessing treatment, affording treatment, or simply staying on track, your personal Pack Health Advisor will call you weekly and help you achieve your personal health goals. They’ll be your coach, accountability partner, and guide, every step of the way.

Do you have hepatitis C?
Get support. Get answers.

- Get a personal Health Advisor to coach you on your journey.
- Develop a personalized plan - you set the goals, we’ll help you get there
- Find answers and accountability to get the results you want.
- Use the tools and guides we send you to track your progress.

Enroll online: packhealth.com/hcv

As easy as 1-2-3!
1. Enter your contact info
2. Use promo code: HCV2017
3. Get 3 months of membership free!

Questions? Call us at 885-255-2362 8am-5pm | Monday-Friday

The HCV Advocate offers information about various forms of intervention in order to serve our community. By providing information about any form of medication, treatment, therapy or diet we are neither promoting nor recommending use, but simply offering information in the belief that the best decision is an educated one.

Reprint permission is granted and encouraged with credit to the Hepatitis C Support Project.
Get Tested. Get Treated. Get Cured.