The Liver Meeting is noted for concentrating on many issues related to the liver. Lucinda Porter, RN and I are focused on abstracts about hepatitis C. This year was a notable year similar to the Liver Meeting in 2002. Data on Boehringer Ingelheim’s ciluprevir (BILN 2061), a hepatitis C (HCV) protease inhibitor, was presented on the first direct-acting antiviral medication to treat HCV. I was in the audience at the presentation and you could hear gasps from the attendees as the authors presented the information. That year was quite a moment in the history of HCV.

It turned out that BILN 2061 was not an effective treatment for HCV but it was a watershed moment because it was the first direct-antiviral drug developed as a potential treatment of HCV. This year’s conference was also a watershed moment but more of that later.


In 2013 the Centers for Disease Control and Prevention (CDC) made a recommendation for a one-time test for hepatitis C (HCV) for people born 1945 – 1965 and for people at risk for HCV. People who were born between 1945 to 1965 account for 75% of the population in the United States with HCV.

The study was undertaken to understand the number of baby boomers tested for HCV. The authors examined real-world screening rates between 2010 and 2016 in a large population of insured adults using commercial and Medicare Advantage insurance claims.

Conclusion: In this study, the screening rate was 18%. That leaves 82% of the birth cohort not being screened.

— CONTINUED ON PAGE 2
Editorial Comments: We need additional strategies to reach the 82% of the unidentified HCV baby boomer population. How can we eliminate HCV with this many people with HCV untested? What about the convergence of HCV and the opioid epidemic that we haven’t even addressed? AND many experts believe that the real number of people with HCV is much higher than the quoted numbers—as many as 5 million Americans.

Abstract # 1023 The Prevalence of Plasma Cell Dyscrasia in Hepatitis C Patients—D. Dies, et al.

Currently, 3% of people with hepatitis C (HCV) have evidence of monoclonal gammopathy of uncertain significance (MGUS). MGUS is a marker of various blood abnormalities that may or may not lead to diseases. One example is multiple myeloma (cancer of the blood).

The study included 115 females & 150 males. Most patients were over 50 years old.

Conclusion: MGUS was found in 13 of 45 Caucasians, 12 of 115 African Americans and in 1 Hispanic patient. The prevalence of MGUS was 9.8% in this study compared to 3% in previous studies. Additionally, MGUS only occurred in people over 50 years old.

Editorial Comments: The occurrence of multiple myeloma in people with HCV is a very uncommon condition. However, the high rate of MGUS in this study should prompt more surveillance.

Abstract # 871: HCV Reinfection and Injecting Risk Behavior Following Elbasvir/Grazoprevir Treatment in Patients on Opioid Agonist Therapy: Co-STAR Part B - Three Year Follow-up Study—G. Dore, at al.

The Co-STAR study is an on-going study that included patients who were on opioid agonist therapy (OAT) for at least three months to treat addiction before entering the study. There were 301 patients (genotypes 1, 4 and 6). Part A found that the overall cure rates were 91%.

This report is on Part B: a 3-year observational follow-up study to look at the re-infection rate. There were 199 participants enrolled in the follow-up phase. Every six months the participants were given drug urine screen, an HCV RNA (viral load test) to check for reinfection and a questionnaire to self-report drug use.

Conclusions: There was drug use during the follow-up period. However, of the 199 patients enrolled in the 3-year follow-up, there were ten people who were re-infected. Interestingly, of the ten people who had become re-infected three people had resolved the acute infection and two people had been re-treated.
No information was given if the two people who were re-treated had achieved a cure.

**Editorial Comments:** These are excellent results. Personally, I am thrilled with the outcome of the trial. I think this study demonstrates that treating people with addictions can produce high cure rates and low reinfection rates.

**Abstract # 210: Identification of Novel HCV Genotype and Subtypes in Patients Treated with Sofosbuvir Based Regimens—C. Hedskog, et al.**

In the current study, the authors analyzed hepatitis C (HCV) genotype and subtypes from more than 14,000 patients treated with sofosbuvir-based regimes. Fifty-five patients had unresolved subtypes. The study goal was to identify the unresolved HCV genotype/subtype.

Currently, there are 7 HCV genotypes (1-7) and 86 HCV subtypes. There is a genetic variance of ≥ to a 30% between HCV genotypes and approximately a 15% genetic variance between HCV subtypes.

**Conclusion:** Of the 55 unresolved HCV subtypes: 13 were known HCV subtypes; 19 were newly discovered HCV subtypes—mostly in HCV genotypes 2 and 4. Two of the unresolved types were HCV genotype 8—a newly identified HCV genotype. There were still some patients that they were not able to identify their sequences.

**Editorial Comments:** This study reminds us how much we still need to learn about HCV. New subtypes, new genotypes and more medical conditions linked to HCV underscore the need for more research dollars to understand the many facets of HCV.

**Note:** Two additional HCV genotype 8 patients have been identified in Canada.

**Source:** NATAP from The Liver Meeting Presentation

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**Abstract # 198: Adherence to Pangenotypic Glecaprevir/Pibrentasvir Treatment and SVR12 in HCV-infected Patients: An Integrated Analysis of the Phase 2/3 Clinical Trial Program—A. Brown, at al.**

The study included 2,091 patients in phase 2 and 3 clinical trials of Abbvie’s glecaprevir plus pibrentasvir (Mavyret) to treat hepatitis C (HCV) genotypes 1 through 6. The treatment periods were 8, 12 and 16 weeks. The overall cure rates among all patients in phase 2 and 3 studies were greater than or equal to 95%. The adherence rates were analyzed to understand how adherence affected cure rates.

**Conclusion:** People who were 80% adherent were just as likely to achieve a cure as those who were 100% adherent. Those who were as low as 50% adherent had about a 90% chance of a cure. The factors of non-adherence included alcohol or tobacco...
use, the presence of compensated cirrhosis, severe kidney impairment, or genotype 3.

**Editorial Comments:** As a patient, taking all the medications is the most critical strategy for being cured. However, taking every pill, every day can be a challenge. If someone misses a dose, they should contact their medical provider for information about how and when to take their next dose.

There is also a real possibility that missing too many doses could mean that treatment will not work or that someone could develop drug resistance. However, as this study points out missing a dose does not mean that treatment will not work. This study should be very reassuring.

**Abstract # 969 Long-Term Follow Up of Patients with Chronic HCV and No or Minimal Fibrosis Shows Low Risk for Liver-Related Morbidity and Mortality After Achieving SVR with DAA-Based Therapy: Results from the Gilead SVR Registry—M. Bourlière, et al.**

The study included an analysis of 1,444 patients with minimal or no fibrosis (F0-F1) before treatment. Genotype 1 was the most common (58%), followed by genotype 2 (15%), genotype 3 (18%), and genotypes 4, 5 and 6 (9%). All of the patients received a sofosbuvir-based direct-acting antiviral therapy. The patients were followed for 144 weeks after treatment ended. The degree of liver disease progression was measured.

**Conclusion:** There were 6 deaths in the group of 1,444 patients but the deaths were not related to liver disease. There was only 1 patient who relapsed after treatment ended and there were 7 reinfections.

**Editorial Comments:** This study should reassure people with minimal or no scarring (fibrosis) that curing hepatitis C results in no further HCV liver disease progression. However, it’s important to have cholesterol levels checked after being cured since the hepatitis C virus interferes with cholesterol production.

As I mentioned in the introduction, this conference was also a watershed moment in the history of hepatitis C. There were presentations on two HCV drugs in development. Both of the drugs in development were discontinued either because they lacked effectiveness or due to market competition. These two drugs were the last drugs in development. This is good news because we now have drugs that can cure almost everyone with hepatitis C. It is the end of an era!

As a reminder, because of the discontinuation of the drugs in development, we have discontinued our HCV Drug Pipeline.

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Alan Franciscus is the Executive Director of the Hepatitis C Support Project and the Editor-in-Chief of the HCV Advocate Website.
The 2017 Liver Meeting took place in late October. It’s a longstanding tradition of the HCV Advocate to highlight the latest research from this annual meeting of the American Association for the Study of Liver Diseases. Alan Franciscus and I divide the task, providing capsule summaries of our favorite presentations. Be sure to check out HCV Advocate’s News and Pipeline Blog to keep abreast of the latest hepatitis C-related news.

More than 2200 submissions were accepted to this year’s meeting. There were many interesting presentations about fatty liver disease and liver cancer. Pediatric research continues to be underrepresented. Although hepatitis C virus infection (HCV) is not as common in kids as it is in adults, children need better treatment options.

Here are some of my favorite posters. Note that conference posters are preliminary investigations, and are not conclusive until the data are published in a peer-reviewed journal.

**Abstract: #142 Eradication of HCV Induced by Direct-Acting Antivirals Is Associated with a 79% Reduction in HCC Risk. – George N. Ioannou, et al.**

The goal of this large study was to evaluate the risk of hepatocellular carcinoma (HCC) in people diagnosed with HCV who experienced a viral cure (SVR) using DAAs. Further, this research compared the HCC risk for SVRs achieved by DAAs versus interferon-based regimens.

This research used data collected from 62,051 patients who underwent 83,695 antiviral treatment regimens in the Veterans Affairs national healthcare system from 1999-2015. There were 35,873 (57%) interferon-only regimens; 26,178 (43%) DAA ± interferon regimens; 21,644 (35%) DAA-only regimens.

**Conclusion:** Among all patients, SVR was associated with a 70% reduction in HCC risk. The risk of HCC was highest among patients with cirrhosis who failed treatment. Patients with cirrhosis who had an SVR had the next highest risk of HCC. The lowest risk was among patients without cirrhosis who achieved SVR, followed by those with no cirrhosis who did not have an SVR.

Patients with an SVR following DAA treatment had a 79% reduction in HCC risk.

**Editorial Comments:** This is one of many studies that reported similar findings. The size of this study strongly enforces the notion that curing HCV with DAAs should be initiated early, and offered to everyone with HCV.

Although hepatitis C virus infection (HCV) is not as common in kids as it is in adults, children need better treatment options.

This study examined the prevalence and trends in HCV-related HCC from 2000 to 2015. Researchers used electronic medical record data obtained from 2,328 subjects diagnosed with HCC; 20% of the subjects did not have cirrhosis at presentation.

Conclusion: HCV-related HCC trended consistently higher. It was more pronounced in the non-cirrhotic group increasing from 9.6% to 21.7%. The researchers recommend screening non-cirrhotic HCV patients for HCC. Additionally, they state that with the advent of DAAs, there is a concern that a large number of HCV-cured patients might potentially go on to develop HCC even though they do not have cirrhosis.

Editorial Comments: Typically, HCV patients who are successfully treated are pronounced cured with no further follow up recommendation. However, this study indicates a potential need for screening HCV-cured patients for HCC. I hope we see guidelines addressing this.

Abstract: #64 Significant and Sustained Improvement of Health-Related Quality of Life (HRQL) Scores in Patients with Hepatitis C (HCV) and Sustained Virologic Response (SVR) – Zobair M. Younossi, et al.

Previous data show that people with chronic HCV infection who were cured (sustained viral response or SVR) show short-term improvements overall. However, it isn’t known if these benefits continue over the long-term. This international study assessed long-term changes in HRQL of 3,486 subjects with chronic HCV infection who achieved SVR. HRQL was surveyed every 24 weeks for up to 144 weeks.

Conclusion: Compared to their pre-treatment HRQL scores, people reported significant improvements in HRQL post-treatment in all measured areas. Moreover, results from the Short Form Health Survey (SF-36) exceeded the scores of the general population.

Editorial Comments: Many studies over the course of many years consistently show the value of HCV treatment, particularly now that we have DAAs. This study adds weight to the body of evidence, leaving me with one question, “What will it take to eliminate hepatitis C?”


People with nonalcoholic fatty liver disease (NAFLD) have a higher risk for cardiovascular (CV) events. This Mayo Clinic study investigated possible sex-related differences in CV risk among people with NAFLD. Using data from the Rochester Epidemiology Project database, researchers looked at 4,196 adults diagnosed with NAFLD in Olmsted County, MN between 1997-2014. Slightly more than half were women (52%). They compared the adults with NAFLD to 15,786 in the general population.

Conclusion: Compared to the general population, women with NAFLD had a significantly higher incidence of CV events, but men did not. Also, CV events occurred at a younger age.

Editorial Comments: NAFLD is potentially serious, but still under the radar. It’s time to step up awareness about NAFLD, especially regarding women.


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Hepatitis C and Liver Cancer — CONTINUED FROM PAGE 6

This study retrospectively analyzed data collected between 2000 and 2015 from two of the largest HIV clinics in San Diego. Researchers looked for the incidence of HCV among 2768 men who have sex with men (MSM) who tested positive for HIV, but negative for HCV at baseline.

**Conclusion:** This research reported a significant increase in HCV incidence over time. They also found that compared to those with no history of meth or injection drug use (IDU), HCV incidence was three times higher among HIV+ MSM who reported meth or IDU use.

**Editorial Comments:** Similar results were reported in European studies. Although HCV is not transmitted efficiently via sex, we need to arm people with facts about the transmission risk, especially among MSMs.


Herbal and dietary supplements (HDS) are not FDA approved. The Drug Induced Liver Injury Network (DILIN) prospectively collected data on 341 HDS from 1268 enrolled subjects. They analyzed the chemical contents of samples of HDS collected between 2003 and 2016, and compared the contents to the label information.

**Conclusion:** After chemical analysis, less than half of the herbal and dietary supplements had labels that accurately matched their contents. Bodybuilding and weight loss products had the highest mislabeling rates.

**Editorial Comments:** Liver injury due to drugs and supplements is increasing at an alarming rate. Do not use supplements without sound medical guidance.

> **Abstract: #972 Risk of Parkinson’s Disease in Hepatitis C Patients Following Exposure to Direct-Acting Antiviral Treatment: An Analysis of US Administrative Claims Data – Laura Telep, et al.**

Previous studies have shown an increased risk of Parkinson’s disease in people with chronic HCV infection, but the data were small. This research analyzed ten years of data collected from 347,052 HCV-positive adults and compared those who were treated for HCV to those who were untreated. The data were further compared to a random sample of 715,220 adults with no HCV diagnosis.

**Conclusion:** HCV was associated with an increased risk of Parkinson’s. Although people treated with DAAs had a reduced risk of Parkinson’s, there aren’t enough data to determine the significance.

**Editorial Comments:** Clearly more research is needed, particularly regarding the effects of treatment.
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on Parkinson’s. It seems important to know if people who are cured need to be screened for Parkinson’s, or if treatment reduces the risk.

Also, I learned something new when reviewing this study. People who were treated with interferon (IFN) tended to be younger than people treated with DAAs. So when comparing DAA to IFN treatments, the generally older DAA subjects may be harder to treat and susceptible to side effects.

Note: A second large study presented at the Liver Meeting confirmed the increased risk of Parkinson’s in those with HCV. It did not examine the post-treatment risk. (Abstract 891 Hepatitis C Virus Infection and Risk Of Parkinson Disease: A Systematic Review and Meta-Analysis – Karn Wijarnpreecha, et al.)


People living with HCV tend to have low lipid profiles (cholesterol and triglycerides). After HCV is eradicated, an increase in lipids is common. Researchers wondered if these higher lipids increases risk of cardiovascular disease. Evaluating 60 subjects undergoing HCV treatment, this small study compared the pre-treatment cardiovascular risk to the 24-week post-treatment risk.

Conclusion: When people cleared HCV, their lipoproteins increased, which in turn raises cardiovascular risk. The researchers recommended that, “Patients should be evaluated for cardiovascular risk and need for lipid lowering therapy after HCV clearance.”

Editorial Comments: I have three problems with this study. First, the study used an extremely small sample. Second, the length of the study; I wonder what these data would be in one, five, and ten years. Third, (and most importantly), this study needs to have a control arm. Other studies show that people with HCV have an increased risk of cardiovascular disease. But, if you read this study, it appears that people who are cured are at increased risk. With no comparison to people without HCV, we don’t really know what the risk is, especially with data that are small and short-term.


Currently, HCV-positive livers are not transplanted into HCV-negative recipients. However, HCV has a high cure rate of greater than 90% post-transplant because of the use of direct-acting antivirals (DAAs). There is a shortage of available organs. Using a virtual model, these researchers evaluated the viability of using HCV-positive livers for HCV-negative recipients.

Conclusion: This virtual model found that transplanting HCV-positive livers into HCV-negative patients, accompanied with HCV DAA therapy, resulted in an increase in patient life expectancy when baseline MELD (a measurement of the degree of cirrhosis) was ≥ 20. The researchers recommend clinical trials to test this.

Editorial Comments: Kidney transplant using HCV-positive kidneys for HCV-negative recipients is already in practice. I hope liver and other organ transplantation practices are able to follow suit soon.
I’ve often written about the importance of collaboration and attacking the HCV epidemic by putting our egos to the side as much as we possibly can. I know this often comes across as idealistic, shortsighted and not rooted in the practical world. I don’t tirelessly defend this viewpoint without understanding that in some situations it isn’t possible. At the same time, I think we are overconfident in what we know about the HCV epidemic, opioid crisis and the people they affect. The only certainty before us is if we continue to do what we have been doing, our loved ones will continue to die unnecessary deaths. The way we view ourselves and each other grows out of, and is sustained within, the larger system we call society. The way we talk about people who live with hepatitis C and are in the grips of the opioid crisis affects how they view themselves, their willingness to engage in healthcare and the confidence they can enter recovery and successfully be reintegrated with society.

One of the most common questions I got when engaging in harm reduction with people who inject drugs was would their veins ever get better. I remember being called to a youth facility to screen a young 17-year-old girl. When I walked in the room her eyes were downcast. Her left hand was covering the bend in her right arm. She didn’t say much as we went through the questions but when I prepared to draw her blood she asked me how bad her veins were. Her voice and the look in her eyes when she asked were heartbreaking. I was honest and told her that her veins looked good and that there wasn’t any scar tissue.

A few days later when I went back to deliver the results, a counselor met with me while we waited for her to come downstairs and said that on their way back up to the dorms after I left the first time she said, “Did you hear what he said, my arms aren’t that bad,” and couldn’t stop smiling. This young girl was less worried about hepatitis C or HIV and more worried about the scar tissue and what other people would think. She knew what many people in recovery or actively battling addiction know. That even if you are clean for 20 years, if you have track marks, you can still be viewed by those you meet as a junkie or an addict. For many of us in
recovery our hope is to be fully and unconditionally accepted back into society, our communities and our families. We are not the addiction we beat. By that I mean our identity is not one of “alcoholic,” “heroin user,” or “opiate addict.”

At 25, I was working as an administrative assistant at a small HIV services organization in Evansville. I was also at my most self-destructive. One Thursday night I was arrested. On Friday morning, I used my one free phone call to call into work. I of course forgot that when you call an automated message plays prior asking if you accept a call from the jail. I can laugh with my friends and family about it now, but it was clearly a sign I was losing the battle. My boss could have fired me. I was in the easiest position to replace. But he didn’t. When it would have been easier to cut bait, and replace me, he sat me down and talked with me. He said what I and many others have been told before, “you have the potential to do great things,” what he said and did next is what made all the difference, “I can support you and give you one more shot, but you have to be the one to do it.”

There is no question that what he did for me that day changed my life. Since then I have been accepted into and completed grad school, I was promoted 2 times within the agency and over the last year I have started my own organization Umbrella Way. I don’t know what lies ahead for me or Umbrella Way. What I do know is that I wouldn’t be here without all the help and generosity I’ve been given by people in the HCV and Harm Reduction Community. My life is markedly better because one man took a shot at changing his perspective and a whole lot of others chose to see who I could become rather than what I have done. He didn’t give me a hand out, or a hand up, he simply put this hand on my shoulder, looked at me without judgment or pity, and said, “let’s give this one more shot.” There are thousands of people battling addiction and in recovery with the same potential. Countless people who are intelligent, passionate and skilled. I’m not saying we should give them a hand out or a hand up. Simply a gesture that what we see in them isn’t what they’ve done, but who they can become when they see and believe the potential they are capable of. It might not work for everyone, but I know it can work. What I’m asking is, let’s all together, give this thing one more shot.

Matthew Zielske is the Training Manager for the Hepatitis C Support Project’s Train-the-Trainer workshop. He has a Master’s in Communication with a focus on health communication and health literacy.
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*http://hcvadvocate.org/hepatitis/factsheets_pdf/Type2Diabetes.pdf

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