Hepatitis in Kentucky: Updates on Epidemiology, Testing and Treatment

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On behalf of the KY AVPHC Program, we hope you and your family had a wonderful Holiday Season and we wish you a blessed, prosperous, and healthy New Year. Inside this January 2016 edition of the KY Hepatitis Connections, you will find information about hepatitis screening, testing, and treatment, and opportunities for viral hepatitis continuing professional education. See all the exciting recently released hepatitis news, journals, and articles.

As always, feel free to forward, copy and/or distribute this newsletter to other professionals in your network. Your knowledge and input are greatly valued, as we are committed to keeping you up to date on shared progress in the medical community on viral hepatitis and its impact on our families throughout the Commonwealth.

Kathy J. Sanders, RN MSN
HCV: IN THE NEWS

States with the Biggest Heroin Problem

America has been fighting a war on drugs for decades, and the fight continues to this day. The primary drug choice is Heroin. No other drug has risen in popularity more. In the past decade, heroin overdoses in the United States have skyrocketed, and the trend is showing no signs of slowing down.

The sheer volume of reported overdoses is staggering. Recent figures show that the demographic group with the largest increase in heroin use has been Caucasians. With this troubling trend in mind, Health-Grove decided to examine the issue at the state level.

Using data from the Substance Abuse and Mental Health Services Administration, we identified the 23 states that have seen the largest percentage increase in reported patients admitted to rehab clinics for heroin use from 2002 to 2012. Kentucky ranks number one with Rehab Admissions of Heroin. See: [http://news.yahoo.com/data-visualizations--states-with-the-biggest-heroin-problem-161828986.html](http://news.yahoo.com/data-visualizations--states-with-the-biggest-heroin-problem-161828986.html)

New Treatments Not Enough to Eliminate Hepatitis C

Despite powerful new medications, the lack of screening and treatment capacity will make it difficult to eliminate the hepatitis C virus in the United States, according to projections presented here at the Liver Meeting 2015.

Current trends show that even after 2020, more than 500,000 people will be unaware that they are infected with hepatitis C, said Jagpreet Chhatwal, PhD, from the Massachusetts General Hospital and Harvard Medical School in Boston.

"We need aggressive screening and treatment policies to further reduce the burden of hepatitis C," he said.

The landscape of hepatitis C has changed rapidly in the past 5 years.

Treatment outcomes have advanced with the advent of antivirals, from a sustained virologic response rate of less than 50% before 2011 to better than 95% in 2015. At the same time, the Affordable Care Act has expanded the number of people with healthcare coverage.

To project the course of the disease, Dr Chhatwal and his colleagues assessed patient demographics, disease characteristics, therapeutics, screening policies, insurance coverage, and access to treatment in the United States using the Hepatitis C Disease Burden Simulation model they developed (Ann Intern Med. 2014;161:170-180).

Opioid substitution therapy, especially in combination with needle exchange, reduces transmission of hepatitis C

A pooled analysis of 25 studies has shown for the first time good evidence that methadone and other forms of opioid substitution therapy substantially reduce new hepatitis C infections. Previously, this had been clearly demonstrated for HIV, but not hepatitis C.

While an independent effect of needle and syringe exchange on hepatitis C was not demonstrated, programs which combined opioid substitution therapy with needle and syringe exchange were more effective. Lucy Platt of the London School of Hygiene and Tropical Medicine presented the results to the 24th International Harm Reduction Conference in Kuala Lumpur, Malaysia.

In most settings, the proportion of people who inject drugs who have hepatitis C is far higher than the proportions that have HIV. Furthermore, the hepatitis C virus is readily transmissible in miniscule quantities and can survive for several weeks outside the body. The combination of these factors makes hepatitis C harder to keep under control than HIV.

Two previous systematic reviews on the topic did not demonstrate that needle and syringe programs (NSP) and opioid substitution therapy (OST) were effective in preventing the spread of hepatitis C. However the new systematic review and meta-analysis is able to take account of several studies published in the past few years and also deal with some methodological problems of previous reviews.

The data from all relevant studies which met pre-determined quality criteria were included. Of note, these were all observational studies – mostly prospective cohorts but also some cross-sectional and case-control studies. In total, 25 studies were included – mostly from the USA, Canada, UK and Australia, plus a few from other European countries. Read More: http://www.aidsmap.com/Opioid-substitution-therapy-especially-in-combination-with-needle-exchange-reduces-transmission-of-hepatitis-C/page/3007496/

U.S. FDA Approves Gilead's Hepatitis C Drug for Expanded Use

The U.S. Food and Drug Administration recently approved the expanded use of Gilead Sciences' Hepatitis C drug, Harvoni, to treat patients with genotype 4, 5, and 6 chronic hepatitis C virus (HCV) infection and in patients co-infected with HIV. The FDA also approved a 12-week regimen of Harvoni plus ribavirin (RBV) as an alternative to 24 weeks of Harvoni for treatment-experienced genotype 1 patients with cirrhosis. Approval of the supplemental new drug application for HCV genotypes 4, 5, and 6 was supported by data from two open-label trials — study 1119 and ELECTRON-2. The phase 2 SIRIUS study supported approval of Harvoni with RBV for 12 weeks in genotype 1 treatment-experienced HCV patients with cirrhosis.
Strategies for hepatitis C ‘treatment as prevention’ must address the concerns of people who inject drugs

While epidemiologists and public health experts are excited by the potential of new hepatitis C drugs to limit onward transmission of the virus among people who inject drugs, the strategies ignore profound barriers to drug users engaging with healthcare and their broader needs. For ‘treatment as prevention’ to be ethical and acceptable to people who inject drugs, enabling treatment and policy environments need to be created from the 24th International Harm Reduction Conference in Kuala Lumpur, Malaysia.

But there is also an opportunity: “Treatment as prevention has the potential to be a powerful advocacy tool for enhanced treatment access for people who inject drugs,” Magdalena Harris of the London School of Hygiene and Tropical Medicine told the conference. Her analysis was co-authored with Eliot Albers of the International Network of People Who Use Drugs and Tracy Swan of Treatment Action Group.

Borrowed from the HIV field, the concept of ‘treatment as prevention’ is now being applied to hepatitis C. Modeling studies suggest that significantly increasing the number of injecting drug users whose hepatitis C is treated and cured, could help prevent onward transmission of the virus.

Modern hepatitis C treatment has fewer side-effects and is more effective than treatment based on pegylated interferon injections. Studies show that people who inject drugs can achieve good levels of adherence and that treatment is effective in this population. Recently, guidelines were developed in order to encourage doctors to offer treatment to people who inject drugs.


HCV Combo Treatment Shows Wide Efficacy

An investigational drug combination led to high cure rates across five of the six genotypes of hepatitis C (HCV). The fixed-dose single-pill combination of sofosbuvir (Sovaldi) and velpatasvir let to sustained virologic response (SVR) in 99% of patients with genotypes 1, 2, 4, 5, and 6, according to Jordan Feld, MD, of Toronto Western Hospital in Toronto.

In contrast, no patient taking a matching placebo in the phase III ASTRAL-1 trial reached that milestone, Feld reported at the American Association for the Study of Liver Diseases (AASLD) meeting and simultaneously online in the New England Journal of Medicine. A simple regimen effective in a broad range of patients who are chronically infected with HCV "remains an unmet medical need,” Feld and colleagues noted. Read More: http://www.medpagetoday.com/MeetingCoverage/AASLD/54734?xid=nl_mpt_IDSA_confrepor ter_2015-11-20&eun=g5517831d30r
**HCV Treatment May Benefit Injection Drug Users**

High compliance rates, sustained virologic response with investigational combination

An investigational combination drug for hepatitis C reduced viral load in patients being treated for opioid addiction, a population that has had limited access to HCV therapy, researchers reported here.

In the C-EDGE CO-STAR trial, 95% of patients on Merck's investigational combination of elbasvir and grazoprevir achieved sustained virological response over 12 weeks, Gregory Dore, MD, of the University of New South Wales in Australia, and colleagues reported during an oral presentation at the American Association for the Study of Liver Diseases meeting. The study findings support enhanced efforts to address barriers to HCV therapy access for patients who inject drugs, Dore said.

The investigators evaluated Merck's all-oral, once-daily combination drug elbasvir/grazoprevir (50mg/100mg) in a phase III study of patients with genotype 1, 4, or 6 disease who were on opioid agonist therapy with either methadone or buprenorphine. Elbasvir is an NS5A replication complex inhibitor, while grazoprevir is an NS3/4A protease inhibitor. Read More: [http://www.medpagetoday.com/MeetingCoverage/AASLD/54714?xid=nl_mpt_IDSA_confrepor ter_2015-11-20&eun=g5517831d30r](http://www.medpagetoday.com/MeetingCoverage/AASLD/54714?xid=nl_mpt_IDSA_confrepor ter_2015-11-20&eun=g5517831d30r)

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**Can You Get Hepatitis C from Sex?**

While injecting drug use remains the primary mode of transmission for the hepatitis C virus (HCV), an increasing focus has been placed the potential for infection through sexual contact. We say *potential* — as opposed to, say, *risk*, or *likelihood* — as many experts still regard the concept of sexual HCV transmission as controversial. And, truth be told, the bulk of evidence seems to support this stance.

One study from the University of California, San Francisco in 2013 estimated that the risk of HCV among heterosexual couples was in the ballpark of one per 190,000 sexual contacts. Furthermore, the researchers concluded that the association between HCV and specific sexual acts was at best ambiguous and that mixed-status couples should be provided "reassuring counseling messages" as to the very low risk of infection.

More recent evidence, however, suggests that such reassurances don’t hold up as well in other groups. In fact, since 2004, a number of studies have concluded that the risk of HCV through sex is not only high among men who have sex with men (MSM) but is increasing—predominately among those infected with HIV.

HCV transmission during anal sex may happen without blood, study in HIV/HCV co-infected men finds

Hepatitis C virus is present in large enough quantities in the rectal fluid of men with HIV and hepatitis C co-infection to permit HCV transmission without the presence of blood, researchers from the Icahn School of Medicine, Mount Sinai Hospital, New York, reported at the 2015 AASLD Liver Meeting in San Francisco.

Until now it was assumed that hepatitis C transmission during anal intercourse occurred as a result of bleeding, or through transmission in semen. Hepatitis C is easily transmitted in blood; with just 10 to 20 hepatitis C virions being enough to establish hepatitis C infection through contaminated medical equipment or used injecting equipment. Transmission has been theorized to take place as a result of contact between blood and the mucosa of the penis, or contact with damaged tissue on the hand during fisting. Transmission has also been theorized to occur as a result of the transfer of blood containing HCV from one person to another, on the penis, on a gloved fist or on sex toys, during group sex.

Another presentation at the AASLD Liver Meeting by the same research group, led by Daniel Fierer, reported that HCV was present in 27% of three paired samples of blood and semen collected from 33 men with HIV and HCV co-infection, with virus levels sufficient to transmit HCV.

The possibility that hepatitis C virus might be present in the fluid on the surface of the rectal mucosa had not been previously explored. Seeking to understand how HCV is being transmitted widely among men who have sex with men (MSM), especially those with HIV infection, researchers from Icahn School of Medicine recruited 45 MSM with HIV and hepatitis C co-infection, 12 of whom were acutely infected.

Study participants had a median age of 43 years, 60% were white, and 87% had genotype 1a HCV infection. Participants had high CD4 cell counts (median 582 cells/mm^3) but HIV viral load suppression was not reported. Participants had moderately high HCV viral load (5.89 log_{10} IU/mL), and those with acute HCV infection had somewhat higher median viral load (6.42 log_{10} IU/mL) than those with chronic HCV infection (5.62 log_{10} IU/mL).

Hepatitis C Virus Infection: A Risk Factor for Parkinson’s Disease

Recent studies found that hepatitis C virus (HCV) may invade the central nervous system, and both HCV and Parkinson's disease (PD) have in common the overexpression of inflammatory biomarkers. Researchers’s analyzed data from a community-based integrated screening program based on a total of 62,276 subjects, and used logistic regression models to investigate association between HCV infection and PD. The neurotoxicity of HCV was evaluated in the midbrain neuron-glia co-culture system in rats. The cytokine/chemokine array was performed to measure the differences of amounts of cytokines released from midbrain in the presence and absence of HCV. The crude odds ratios (ORs) for having PD were 0.62 [95% confidence interval (CI), 0.48-0.81] and 1.91 (95% CI, 1.48-2.47) for hepatitis B virus (HBV) and HCV. After controlling for potential confounders, the association between HCV and PD remained statistically significant (adjusted OR = 1.39; 95% CI, 1.07-1.80), but not significantly different between HBV and PD. The HCV induced 60% dopaminergic neuron death in the midbrain neuron-glia co-culture system in rats, similar to that of 1-methyl-4-phenylpyridinium (MPP(+)) but not caused by HBV. This link was further supported by the finding that HCV infection may release the inflammatory cytokines, which may play a role in the pathogenesis of PD. In conclusion, our study demonstrated a significantly positive epidemiological association between HCV infection and PD and corroborated the dopaminergic toxicity of HCV similar to that of MPP(+). Read more: http://www.ncbi.nlm.nih.gov/pubmed/25608223

Short Course Triple HCV Treatment Has Promise in Cirrhosis

Harvoni plus vesrprevir for 8 weeks achieved high SVR rates

Triple therapy with ledipasvir-sofosbuvir (Harvoni) plus a novel protease inhibitor led to high sustained virologic response (SVR) rates with only 8 weeks of therapy in hepatitis C (HCV) genotype 1 patients with advanced liver disease, researchers reported.

In a single-center, open-label study, patients taking the three-drug combination (ledipasvir-sofosbuvir and vediprevir) achieved an SVR12 of 96%, according to Eric Lawitz, MD, of the University of Texas Health Science Center in San Antonio, and colleagues.

Adding ribavirin to the mix didn't improve those results, with patients in this group achieving an SVR of 88%, Lawitz reported at the American Association for the Study of Liver Diseases meeting.

It's known that ledipasvir-sofosbuvir with or without ribavirin is safe and effective over 12 weeks in patients with HCV genotype 1 disease who also have cirrhosis. Previous work has shown that this approach can also be shortened to 8 weeks, but only in treatment-naïve patients who don't have cirrhosis. Read More: http://www.medpagetoday.com/MeetingCoverage/AASLD/54787?xid=nl_mpt_IDSA_conferrepor ter_2015-11-20&eun=g5517831d30r
One Dose of RG-101 Leads to Undetectable HCV RNA

-But results with microRNA inhibitor not long lasting

It was a single shot but not a magic bullet. A single subcutaneous injection of an investigational compound (RG-101) against hepatitis C (HCV) produced immediate -- but not long-lasting in most cases -- declines in viral RNA, according to Meike van der Ree, MD, of the Academic Medical Center in Amsterdam.

On the other hand, six of the 32 patients in an open-label study still have undetectable serum HCV RNA after 28 weeks of extended follow-up, van der Ree reported at American Association for the Study of Liver Diseases (AASLD) meeting.

In the current treatment landscape, being free of detectable HCV 12 weeks after the end of treatment is regarded as a cure.

But van der Ree told MedPage Today the investigators are reluctant to say those six have been cured by the substance -- a carbohydrate-conjugated oligonucleotide dubbed RG-101 -- because its mechanism of action is markedly different from other HCV therapies, in that it targets the host not the virus.

RG-101 consists of an oligonucleotide that inhibits microRNA-122 in hepatocytes, combined with a carbohydrate that increases uptake by the cells. MicroRNA-122 (miR-122) is a host molecule that is only found in liver tissues and plays an important role in HCV replication.

Van der Ree said it might be that the six patients will continue to be free of HCV but it's too early to tell, given the novelty of RG-101. Read More: http://www.medpagetoday.com/MeetingCoverage/AASLD/54763?xid=nl_mpt_IDSA_confreporter_2015-11-20&eun=g5517831d30r

HAPPY NEW YEAR
2016
Panel Recommends Direct-Acting Drugs for Nearly all Patients with Chronic Hepatitis C

Hepatitis C Guidance Underscores the Importance of Treating HCV Infection: Panel Recommends Direct-Acting Drugs for Nearly All Patients with Chronic Hepatitis C

Experts at the American Association for the Study for Liver Diseases (AASLD) and the Infectious Diseases Society of America (IDSA) have updated HCVguidelines.org, a website developed in collaboration with the International Antiviral Society-USA (IAS-USA) to provide up-to-date guidance on the treatment of hepatitis C virus (HCV). Based on expanded “real-world” experience with the tolerability and efficacy of newer HCV medications, the section on “When and in Whom to Initiate HCV Therapy” no longer includes tables that offer recommendations on how to prioritize patients for treatment.

“When the direct-acting medications were first introduced, all our knowledge about how these drugs worked came from clinical trials. We needed to gain more experience with their safety before we encouraged all infected persons to initiate therapy. We now have that experience,” said panel co-chair David Thomas, MD.

According to the guidance, successful hepatitis C treatment results in sustained virologic response—or virologic cure—and thus would benefit nearly all of those chronically infected with HCV. Previously, the panel of experts who write the guidance had prioritized treatment with the direct-acting anti-virals for those with the greatest need, particularly those with severe liver disease.

Since the panel’s initial recommendation, there have been opportunities to treat many of the highest-risk patients and to learn more about the new medications. “There are also expanding data on the benefits of HCV treatment for patients with all stages of disease, including mild liver disease,” added panel co-chair Raymond Chung, MD.

Because of the cost of the new drugs, or regional availability of appropriate health care providers, a practitioner may still need to decide which patients should be treated first. Additionally, those with short life expectancies unrelated to HCV infection are not recommended for treatment with these newer therapies, according to the guidance. “However, the goal is to treat all patients as promptly as feasible to improve health and to reduce HCV transmission” said panel co-chair Henry Masur, MD.

“A good relationship between doctor and patient is crucial to achieving the best outcomes with direct-acting therapies. The physician needs to make an assessment of a patient’s understanding of the treatment goals and provide education on the importance of adherence to the therapy and follow-up care,” added panel co-chair Gary Davis, MD.

http://www.idsociety.org/HCV_Therapy_Update/
Veterans Journal: VA expands treatment program for hepatitis C, other illnesses caused by military service

Nov. 29, 2015- Veterans who suffer from hepatitis C and other liver maladies resulting from their military service should benefit from an increased willingness to treat them by the U.S. Department of Veterans Affairs. It recently established the groundwork for finding underserved veterans affected by liver diseases, with the intent of promoting "equitable diagnosis" for them, under the so-called "dashboard" plan.

The VA's undersecretary for health, Dr. David Shulkin, said on Nov. 3: "VA will provide data directly to facilities for any of the vulnerable groups identified by the dashboard and support outreach efforts to veteran populations disparately impacted and not currently served by VA health care."

Assuring Medicaid Beneficiaries Access to Hepatitis C Drugs

The Centers for Medicare & Medicaid Services (CMS) remains committed to Medicaid beneficiaries continuing to have access to needed prescribed medications. The purpose of this letter is to advise states on the coverage of drugs for Medicaid beneficiaries living with hepatitis C virus (HCV) infections. Specifically, this letter addresses utilization of the direct-acting antiviral (DAA) drugs approved by the Food and Drug Administration (FDA) for the treatment of chronic HCV infected patients.

HCV IN CORRECTIONS

Treating a little-known epidemic in America’s prisons could have a surprising benefit for society

The hepatitis C virus causes cirrhosis, is the leading cause of certain liver cancers, and is the most frequent reason people need liver transplants. Dealing with those costly, debilitating, and long-term illnesses takes a toll on the healthcare system.

Yet there’s a solution that could greatly reduce hepatitis C (HCV) incidence and eventually overall healthcare costs: Treat HCV in prisons, where it's most common, and it'll be less likely to spread elsewhere.

In a recent study published in the journal Annals of Internal Medicine, researchers argue that this strategy will be cost effective and beneficial for all of society, not just prisoners. A full 17.3% of the US prison population has the virus, while it's only found in 1% of the non-institutionalized population.

But as people cycle in and out of jails and prisons, the virus spreads, especially when people aren't aware they have it in the first place. In order to figure this out, researchers built a system that modeled the costs of screening for HCV in prisons. They calculated the costs of "opt out" screening, where everyone would be checked who didn't opt out, and compared these results to what would happen if they didn't screen or only screened people deemed to be "at risk" of HCV.

They write in the study that right now, prisons may have an incentive to not screen for HCV, since if they diagnose an illness, they can't ignore it — and treating all the hepatitis infections in prisons would cost a lot. But that means that people who are released are more likely to have no idea of their hepatitis status, which makes them more likely to pass it on.

The researchers found that screening the approximately 2 million people in the prison system and treating those infected would cost just over $1.1 billion in the first year. They also modeled infection rates with people entering and leaving the system. [http://www.techinsider.io/how-to-end-hepatitis-c-by-treating-prisoners-2015-11](http://www.techinsider.io/how-to-end-hepatitis-c-by-treating-prisoners-2015-11)

Hepatitis C Clinical Trials

ClinicalTrials.gov is a registry of clinical trials. It is run by the United States National Library of Medicine (NLM) at the National Institutes of Health, and is the largest clinical trials database, currently holding registrations from about 200,000 trials from more than 170 countries in the world. To view hepatitis C completed and recruiting clinical trials, visit: [https://clinicaltrials.gov/ct2/results?term=hepatitis+c](https://clinicaltrials.gov/ct2/results?term=hepatitis+c)
Hepatitis C Treatment Guidelines - Evaluation and Management of Chronic Hepatitis C Virus (HCV) Infection


A new era in the treatment of HCV infection began in 2013 and 2014, with the approval of new direct-acting antiviral (DAA) oral medications that act directly against HCV without the use of interferon. These newer regimens are very effective in eliminating HCV infection, achieving cure rates of greater than 90% in many patient populations. In addition, the availability of interferon-free regimens has expanded treatment eligibility to include groups, for whom treatment had been contraindicated, e.g., decompensated cirrhosis. The preferred treatment regimens have changed as each new DAA has been approved—resulting in rapidly changing clinical guidelines and treatment recommendations. In the midst of this evolving treatment landscape, the most recently published guidance on HCV treatment stresses the importance of referring regularly to the AASLD/IDSA/IAS-USA website (www.hcvguidelines.org) for new updates.

Read the full report: https://www.bop.gov/resources/pdfs/hepatitis_c.pdf

Vaccinations in prisons: A Shot in the Arm for Community Health

From the first day of imprisonment, prisoners are exposed to and expose other prisoners to various communicable diseases, many of which are vaccine-preventable. The risk of acquiring these diseases during the prison sentence exceeds that of the general population. This excess risk may be explained by various causes; some due to the structural and logistical problems of prisons and others to habitual or acquired behaviors during imprisonment. Prison is, for many inmates, an opportunity to access health care, and is therefore an ideal opportunity to update adult vaccination schedules. The traditional idea that prisons are intended to ensure public safety should be complemented by the contribution they can make in improving community health, providing a more comprehensive vision of safety that includes public health.

Hepatitis C virus infection and prisoners: Epidemiology, outcome and treatment

The studies on hepatitis C virus (HCV) infection in prison populations are few and mostly cross-sectional. Researchers analyzed prevalently the articles appearing on PubMed in the last ten years. HCV infection is frequent in prisoners, prevalence’s ranging from 3.1% to 38% according to the HCV endemicity in the geographical location of the prison and in the countries of origin of the foreign prisoners and to the prevalence of intravenous drug use, which is the most important risk factor for HCV infection, followed by an older age of prisoners and previous prison terms. HCV replication in anti-HCV-positive cases varies from 45% to 90% in different studies, and the most common HCV genotypes are generally 1 and 3. The response to antiviral treatment is similar in prisoners to that of the general population. Unfortunately, treatment is administered less frequently to prisoners because of the difficulties in management and follow-up. The new directly acting antivirals offer a good therapy option for inmates because of their good efficacy, short duration of treatment and low incidence of side effects. The efforts of the prison authorities and medical staff should be focused on reducing the spread of HCV infection in prisons by extending the possibility of follow-up and treatment to more prisoners with chronic hepatitis C.

Read More: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4577639/

The National Conference on Correctional Healthcare

In October 2015, the “National Commission on Correctional Healthcare” held its conference in Dallas, TX. The conference draws correctional health care professionals from across the country. Hepatitis C was addressed in 4 unique presentations. Here are links to hepatitis C presentations, shared with permission from the authors:

Hepatitis C in Prison Settings:

Incorporating Oral HCV Treatment in a Statewide System:

How to Talk to Inmates About Hepatitis C:
**HBV: IN THE NEWS**

**Tenofovir Prevents HBV Transmission in Pregnancy**

Giving tenofovir to pregnant women with high levels of hepatitis B virus can reduce transmission to children, researchers reported here. In a randomized controlled trial in China, mothers with viral loads above 200,000 IU/mL given tenofovir starting at weeks 30 to 32 of gestation had less viral transmission to their babies, according to Calvin Pan, MD, of NYU Langone Medical Center.

Pan presented the findings at the American Association for the Study of Liver Diseases meeting. Preventing mother-to-child transmission could help reduce global burden of hepatitis B infection and liver cancer, Pan explained. Despite getting appropriate immunoprophylaxis, about 10% to 30% of infants born to highly viremic mothers still become infected with HBV.

More evidence is starting to suggest that antiviral therapy during pregnancy may reduce transmission in highly viremic mothers, but there have not been any large well-designed studies yet, Pan said. And there are certainly few data on using tenofovir to prevent mother-to-child transmission, he added.

World Health Organization guidelines don't currently recommend using antiviral therapy during pregnancy to prevent transmission. To assess whether tenofovir could prevent transmission, Pan and colleagues enrolled 200 women who had HBV DNA levels above 200,000 IU/mL and who were positive for Hepatitis B e antigen (HBeAg). Read More: [http://www.medpagetoday.com/MeetingCoverage/AASLD/54806?xid=nl_mpt_IDSA_confrepoter_2015-11-20&eun=g5517831d30r](http://www.medpagetoday.com/MeetingCoverage/AASLD/54806?xid=nl_mpt_IDSA_confrepoter_2015-11-20&eun=g5517831d30r)

**MWR – Update: Shortened Interval for Postvaccination Serologic Testing of Infants Born to Hepatitis B-Infected Mothers**

Infants born to hepatitis B-infected mothers receive post-exposure prophylaxis to reduce their risk for perinatal hepatitis B virus (HBV) infection. Post-exposure prophylaxis consists of hepatitis B (HepB) vaccine and hepatitis B immune globulin administered within 12 hours of birth, followed by completion of the 3-dose or 4-dose HepB vaccine series. Post-vaccination serologic testing (PVST) assesses an infant's response to HepB vaccination and has typically occurred at age 9–18 months. This report provides a CDC update recommending shortening the interval for PVST from age 9–18 months to age 9–12 months. Providers should order PVST (consisting of hepatitis B surface antigen [HBsAg] and antibody to HBsAg [anti-HBs]) for infants born to HBsAg-positive mothers at age 9–12 months (or 1–2 months after the final dose of the vaccine series, if the series is delayed). This recommendation was prompted by the discontinuation of production of Hib/HepB vaccine (Comvax) and new data from the Enhanced Perinatal Hepatitis B Prevention Program supporting PVST 1–2 months after receipt of the last HepB vaccine dose, and at age ≥9 months. [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6439a6.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6439a6.htm)
Laboratory Reporting of Pregnancy Status for Hepatitis B-positive Women

Although some screening studies have estimated that about 95% of pregnant women receive prenatal HBsAg testing, fewer than half of the expected births to HBsAg-positive women are identified. Laboratory reports are only required to have gender and age/date of birth, so pregnancy status is not typically reported to health departments. To help improve identification of HBsAg-positive pregnant women, CDC and partners have worked together to include pregnancy status in laboratory test reports sent to health departments. Four major commercial laboratories are participating in this effort: ARUP Laboratories, LabCorp, Mayo Medical Laboratories, and Quest Diagnostics. An effort is underway to expand this reporting of pregnancy status and engage all laboratories providing HBsAg-testing services.
http://www.cdc.gov/hepatitis/hbv/pregstatuslabreporting.htm

New Know Hepatitis B Poster – No Warning Signs
A new resource has been added to the suite of multi-lingual Know More Hepatitis B campaign. This 24x36 poster emphasizes that Hepatitis B often doesn’t cause symptoms and encourages Asian Americans to get tested- an early diagnosis is the best way to prevent serious liver problems. This poster is available as a downloadable image in English, Chinese, Vietnamese, and Korean.
http://www.cdc.gov/knowhepatitisb/materials.htm#posters

CDC Viral Hepatitis Updates

Viral Hepatitis Serology Training Videos
DVH has updated the serology online training videos for Hepatitis A virus (HAV) infection, Hepatitis B virus (HBV) infection, Hepatitis C virus (HCV) infection, Hepatitis D virus (HDV) infection, and Hepatitis E virus (HEV) infection. Comprised of five animated videos with voiceovers, the purpose of the training is to explain the serological diagnosis of HAV, acute and chronic HBV, acute and chronic HCV, and Hepatitis B and Hepatitis D (HBV/HDV) coinfection, understand the meanings of serologic markers, and understand and interpret serologic test results.
http://www.cdc.gov/hepatitis/resources/professionals/training/serology/training.htm

Co-infection with HIV and Viral Hepatitis
An estimated 1.2 million persons are living with HIV in the United States. Of people living with HIV in the United States, about 25 percent are co-infected with hepatitis C virus (HCV), and about 10 percent are co-infected with hepatitis B virus (HBV). People living with HIV infection are disproportionately affected by viral hepatitis, and those who are co-infected are at increased risk for serious, life-threatening complications. HIV coinfection more than triples the risk for liver disease, liver failure, and liver-related death from HCV. Because viral hepatitis infection is often serious in people living with HIV and may lead to liver damage more quickly, CDC recommends all persons at risk for HIV be vaccinated against hepatitis B and be tested for HBV and HCV infection.
Reminder:
Hepatitis C: Perinatal, Newborn infants and Children Aged Five Years or Less

Health care providers should report:

- All HCV-positive pregnant women;
- All infants born to HCV-positive women;
- All HCV-positive infants and children aged 5 years and younger seen in birthing hospitals, medical practices and clinics

Routine testing for HCV is not recommended for all pregnant women. Pregnant women with a known risk factor for HCV infection should be offered counseling and testing.

Data from the CDC states that approximately 6 out of every 100 infants born to HCV-infected women become infected. The risk is greater, 2 to 3 times, if the woman is co-infected with HIV. There is currently no HCV treatment approved for pregnant women.

Infants born to HCV-positive mothers should be tested for HCV infection with an HCV RNA test at 2 months of age or older (at a routine well-child visit), or HCV antibody testing can be done at 18 months of age (HCV antibody testing should be delayed until 18 months of age to avoid detecting maternal antibody).

The Kentucky Department for Public Health recommends the use of quantitative HCV RNA tests at 2 months of age or older to assess whether HCV was transmitted to the infant from the HCV-positive mother. http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm

Complete and fax the EPID 394 form at the end of this newsletter.

Fax forms to 502-696-3803
Please use the EPID 200 Form for reporting Hepatitis B and Hepatitis C infection.

The EPID 394 form is for reporting of Perinatal, infants and children age five and under with HCV virus.

See a copy of the EPID 394 AND the EPID 200 forms at the end of the newsletter.
Viral Hepatitis Prevention Program Staff:

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Perinatal Hepatitis B Prevention Program Coordinator  
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Julie.Miracle@ky.gov
# Kentucky Reportable Disease Form

## Department for Public Health
### Division of Epidemiology and Health Planning
**275 East Main St., Mailstop HS2E-A**  
**Frankfort, KY 40621-0001**

**EPID 200 – 9/2014**

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### Mail Form to Local Health Department

#### DEMOGRAPHIC DATA

<table>
<thead>
<tr>
<th>Patient’s Last Name</th>
<th>First</th>
<th>M.I.</th>
<th>Date of Birth</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
<th>County of Residence</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Phone Number</th>
<th>Patient ID Number</th>
<th>Ethnic Origin</th>
<th>Race</th>
</tr>
</thead>
</table>

- □ His.  □ Non-His.  □ W  □ B  □ A/PI  □ Am.Ind.  □ Other

### DISEASE INFORMATION

<table>
<thead>
<tr>
<th>Disease/Organism</th>
<th>Date of Onset</th>
<th>Date of Diagnosis</th>
<th>List Symptoms/Comments</th>
<th>Highest Temperature</th>
<th>Days of Diarrhea</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hospitalized?</th>
<th>Admission Date</th>
<th>Discharge Date</th>
<th>Died?</th>
<th>Date of Death</th>
</tr>
</thead>
</table>

- □ Yes  □ No

- □ Yes  □ No  □ Unk

<table>
<thead>
<tr>
<th>Hospital Name:</th>
<th>Is Patient Pregnant?</th>
<th>If yes, # wks ___________</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>School/Daycare Associated?</th>
<th>Name of School/Daycare:</th>
<th>Outbreak Associated?</th>
</tr>
</thead>
</table>

- □ Yes  □ No

- □ Yes  □ No

<table>
<thead>
<tr>
<th>Person or Agency Completing form:</th>
<th>Attending Physician:</th>
</tr>
</thead>
</table>

| Name: | Agency: | Name: |

<table>
<thead>
<tr>
<th>Address:</th>
<th>Phone:</th>
<th>Date of Report:</th>
</tr>
</thead>
</table>

### LABORATORY INFORMATION

<table>
<thead>
<tr>
<th>Date</th>
<th>Name or Type of Test</th>
<th>Name of Laboratory</th>
<th>Specimen Source</th>
<th>Results</th>
</tr>
</thead>
</table>

- □ Preanalytic  □ Analytic  □ Postanalytic

### ADDITIONAL INFORMATION FOR SEXUALLY TRANSMITTED DISEASES ONLY

| Method of case detection: | Prenatal  □ Community & Screening  □ Delivery  □ Instit. Screening  □ Reactor  □ Provider Report  □ Volunteer |

<table>
<thead>
<tr>
<th>Disease:</th>
<th>Stage</th>
<th>Disease:</th>
<th>Site: (Check all that apply)</th>
<th>Resistance:</th>
</tr>
</thead>
</table>

- □ Primary (lesion)  □ Secondary (symptoms)

- □ Early Latent  □ Late Latent

- □ Congenital  □ Other

- □ Gonorrhea  □ Genital, uncomplicated  □ Ophthalmic  □ Penicillin

- □ Chlamydia  □ Pharyngeal  □ PID/Acute  □ Tetracycline

- □ Chancroid  □ Anorectal  □ Salpingitis  □ Other ___________

<table>
<thead>
<tr>
<th>Date of spec. Collection</th>
<th>Laboratory Name</th>
<th>Type of Test</th>
<th>Results</th>
<th>Treatment Date</th>
<th>Medication</th>
<th>Dose</th>
</tr>
</thead>
</table>
**Kentucky Reportable Disease Form**  
Department for Public Health  
Division of Epidemiology and Health Planning  
275 East Main St., Mailstop HS2E-A  
Frankfort, KY 40621-0001

**Hepatitis Infection in Pregnant Women or Child (under the age of five)**  
Fax Form to 502-696-3803

### DEMOGRAPHIC DATA

<table>
<thead>
<tr>
<th>Patient’s Last Name</th>
<th>First</th>
<th>M.I.</th>
<th>Date of Birth</th>
<th>Age</th>
<th>Gender (☐ M ☐ F ☐ Unk)</th>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
<th>County of Residence</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Phone Number</th>
<th>Patient ID Number</th>
<th>Ethnic Origin (☐ His. ☐ Non-His.)</th>
<th>Race (☐ W ☐ B ☐ A/PI ☐ Am.Ind. ☐ Other)</th>
</tr>
</thead>
</table>

### DISEASE INFORMATION

<table>
<thead>
<tr>
<th>Describe Clinical Symptoms:</th>
<th>Date of Onset: / /</th>
<th>Jaundice: ☐ Yes ☐ No</th>
<th>Date of Diagnosis: / /</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Is Patient Pregnant? ☐ Yes ☐ No If yes, # wks_____</th>
<th>Expected Date of Delivery: / /</th>
<th>Name of Hospital for Delivery:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Physician Provider Name:</th>
<th>Address:</th>
<th>Phone:</th>
</tr>
</thead>
</table>

### LABORATORY INFORMATION

<table>
<thead>
<tr>
<th>Hepatitis Markers</th>
<th>Results</th>
<th>Date of test</th>
<th>Viral Load <em>(if applicable)</em></th>
<th>Name of Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBsAg</td>
<td>☐ Pos ☐ Neg</td>
<td>/ /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IgM anti-HBc</td>
<td>☐ Pos ☐ Neg</td>
<td>/ /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HBeAg</td>
<td>☐ Pos ☐ Neg</td>
<td>/ /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IgM anti-HAV</td>
<td>☐ Pos ☐ Neg</td>
<td>/ /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCV Antibody</td>
<td>☐ Pos ☐ Neg</td>
<td>/ /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCV RNA Confirmation</td>
<td>☐ Pos ☐ Neg</td>
<td>/ /</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SERUM AMINOTRANSFERASE LEVELS

<table>
<thead>
<tr>
<th>Patient</th>
<th>Reference</th>
<th>Date of test</th>
<th>Name of Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>AST (SGOT)</td>
<td>U/L</td>
<td>U/L</td>
<td>/ /</td>
</tr>
<tr>
<td>ALT (SGPT)</td>
<td>U/L</td>
<td>U/L</td>
<td>/ /</td>
</tr>
</tbody>
</table>

### Hepatitis A vaccination history: ☐ Yes ☐ No ☐ Refused Dates Given: / /

### Hepatitis B vaccination history: ☐ Yes ☐ No ☐ Refused

- If yes, how many doses ☐ 1 ☐ 2 ☐ 3 Year completed: / /

### Mother:  Hepatitis Risk Factors

- ☐ IDU  ☐ Multiple Sexual Partners ☐ Tattoos ☐ STD
- ☐ HIV ☐ Foreign Born/Country

### Child:  Hepatitis Risk Factors

- ☐ Mother HBV Pos ☐ Household member exposure HBV Pos
- ☐ Mother HCV Pos ☐ Household member exposure HCV Pos
- ☐ Foreign Born / Country

### Exposure to known HBV/HCV Pos contact

### Mother:  Hepatitis A vaccination history: ☐ Yes ☐ No ☐ Refused Dates Given: / /

### Hepatitis B Vaccination history: ☐ Yes ☐ No ☐ Refused

- If yes, how many doses ☐ 1 ☐ 2 ☐ 3 Year completed: / /

### Child:  Hepatitis A vaccination history: ☐ Yes ☐ No ☐ Refused Dates Given: / /

### Hepatitis B Vaccination history: ☐ Yes ☐ No ☐ Refused Dates Given: / /

### Was PEP Infant of Positive HBV mother given at birth? ☐ Yes ☐ No