

HCV ADVOCATE WEEKLY NEWS REVIEW

Review of HCV, HBV and HIV/HCV Coinfection Related News and Highlights

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August 2, 2009

Five hepatitis C cases found at Northern Westchester Hospital

<http://lohud.com>

Five out of 1,227 former surgical patients at Northern Westchester Hospital have tested positive for hepatitis C, hospital officials announced this week.

The hospital last month alerted more than 2,700 patients to get tested after a former surgical technician was charged in Colorado for stealing painkiller-filled syringes, injecting herself and putting them back for use in surgery.

The technician, Kristen Diane Parker, 26, worked at the Mount Kisco hospital from October 2007 to February 2008. Three of the five patients contracted hepatitis before Parker worked at the Mount Kisco hospital and their infection is not related to her employment there, hospital officials said.

Hepatitis C can be acute or chronic and lead to liver disease and cancer. It is the leading cause of liver transplants.

August 3, 2009

Foodborne Hepatitis and Catastrophic Liver Failure

<http://www.foodpoisonjournal.com>

by Drew Falkenstein

The recent hepatitis A outbreak at a McDonalds in Milan, Illinois, has claimed at least 26 victims, and has caused the local health departments to inoculate 5,366 people, hopefully catching these folks in the modest window of time to prevent an infected person from becoming ill. This raises a number of questions that we plan to find answers to.

First, at what cost does this inoculation program come to the affected counties? Not good timing, likely, considering the budgeting woes around the country. Second, how many people are "out of the woods"--i.e., people who were infected at McDonalds, but who received their inoculations in time to prevent the onset of symptoms. And finally, perhaps most importantly, what is the real human toll of this outbreak.

As is the case with an illness caused by any bacteria or virus, colloquially called "food poisoning," many people pass off even hepatitis A as some diarrhea, some vomiting, maybe a little jaundice too, and the victim recovers. True for some, but those would be the lucky ones . . . the exceptions to the rule. More typically, hepatitis A causes weeks, if not months, of symptoms. Ask anybody who has been unlucky enough to fall victim. The fatigue is debilitating. The illness (vomiting, nausea, etc.) is sometimes so extreme for so long that people miss enough work to lose their jobs. And the jaundice that typically signifies that "you're on the mend" sometimes causes such embarrassment that victims won't go out in public.

But that's just the "typical" hepatitis A illness. We have represented many people who have had not-so-typical illnesses. Here is a brief medical synopsis of how the virus can cause catastrophic liver failure (fulminant hepatitis), requiring liver transplantation for survival, or potentially causing death.

Fulminant hepatitis kills nearly 100 people each year in the United States. Among reported cases for all ages, the fatality rate is approximately 0.3%. This figure, however, increases with age. For sufferers of fulminant hepatitis over 40 years old, the fatality rate is approximately 2%.

Fulminant hepatitis affects the liver. Weighing around three pounds, the liver is the body's

largest organ. It is located in the upper right-hand portion of the abdominal cavity, beneath the ribs and right lung, and situated atop the stomach, right kidney, and intestines. It is known to have over 500 functions essential to the body's health. Chief among these are (1) the production of bile, a substance that facilitates digestion in the small intestine; (2) ridding the blood of bacteria that cause infection; (3) ridding the blood of drugs and other poisonous substances; and (4) regulating blood clotting.

The hepatitis A virus (HAV) infects the liver's parenchymal cells. Once a cell has been penetrated by the viral particles, the particles release their own toxins, which cause, in essence, a hostile takeover of the host cell's system. The cell then produces new viral components that are released into the bile caniculi that run between the liver's parenchymal cells. Thereafter, the affected liver cells are no longer able to perform their function. This process—i.e. the pathologic death of liver cells—is called hepatic necrosis.

The fulminant form of hepatitis occurs when this necrotic process kills so many liver cells—upwards of three-quarters of the liver's total cell count—that the liver can no longer perform its multifaceted job.

Aside from the loss of liver function, fulminant hepatic failure can lead to encephalopathy and cerebral edema. Encephalopathy is a brain disorder that causes central nervous system depression and abnormal neuromuscular function. The several stages of encephalopathy, I through V, represent stages of ascending dysfunction—a stage III sufferer is in a stupor, incoherent and markedly confused, and stage IV and V sufferers are comatose. Cerebral edema is a swelling of the brain that can result in dangerous intracranial pressure. It is the leading cause of death in patients suffering from fulminant hepatic failure.

Treatment of those suffering from fulminant hepatic failure turns largely on the victim's status. Those who have not become encephalopathic generally undergo an intense course of supportive treatment. But for those whose liver failure is so complete that it has led to encephalopathy or cerebral edema, timely liver transplantation is often the only option. For these unlucky few, the process of necrosis has left their liver scarred and useless.

August 4, 2009

Surveyed Physicians Will Treat Over 50 Percent of Hepatitis C Genotype 1-Infected Patients with the Protease Inhibitor Telaprevir

www.earthtimes.org

Forty Percent of Surveyed MCOs Will Place Only One Protease Inhibitor on Their Formularies, According to a New Report from Decision Resources

WALTHAM, Mass., Aug. 4 WALTHAM, Mass., Aug. 4 /PRNewswire/ -- Decision Resources, one of the world's leading research and advisory firms for pharmaceutical and healthcare issues, finds that, based on profiles provided to them of emerging protease inhibitors, surveyed physicians indicate that they will prescribe Vertex/Johnson & Johnson/Mitsubishi Tanabe's telaprevir to more than 50 percent of their hepatitis C virus genotype 1-infected patients and will prescribe Schering-Plough's boceprevir to less than 30 percent of these patients. Although surveyed physicians perceive both telaprevir and boceprevir as efficacious drugs, they value

(among other factors) telaprevir's shorter duration of treatment as compared to treatment duration using boceprevir.

The new Physician & Payer Forum report entitled *Hepatitis C: Impact of and Receptivity to Novel Antivirals Among Payers and Prescribers* finds that, among the surveyed physicians who indicate they will use both telaprevir and boceprevir for the treatment of hepatitis C virus genotype 1-infected treatment-naive patients, over 60 percent expect to start treatment for most or all of their patients with telaprevir. Surveyed physicians cite improved efficacy as the most important attribute influencing their prescribing decisions for hepatitis C virus.

"Eighty percent of the physicians we surveyed indicate that long-term efficacy is the most important attribute of novel therapies for hepatitis C virus," said Decision Resources Analyst Alexandra Makarova, M.D., Ph.D. "Nearly all surveyed physicians said that improvements in sustained virologic response in genotype 1-infected patients is the most important endpoint that will persuade them to use a novel treatment in place of currently-available therapies."

The report also finds that 40 percent of surveyed managed care organization's (MCOs) pharmacy directors indicate that they will place only one of the protease inhibitors on their formularies. Of these pharmacy directors, 10 percent expect to choose telaprevir while 30 percent say that they do not have a preference regarding telaprevir or boceprevir based on clinical data provided to them but will use cost as the basis for their selection.

Hepatitis C: Impact of and Receptivity to Novel Antivirals Among Payers and Prescribers is based on a U.S. survey of 84 gastroenterologists, 16 hepatologists and 20 MCO pharmacy directors. Their responses were compared to assess similarities and differences of opinion regarding clinical, economic and scientific factors.

Webinar

Members of the media are welcome to attend our upcoming webinar entitled *On the Verge of a Paradigm Shift in the Hepatitis C Virus Market: Physician and Payer Perceptions of Telaprevir, Boceprevir and Other Key Novel Antivirals*. This webinar will be held on Thursday, September 3, 2009 at 10 a.m. U.S. Eastern Time. For more information, contact Christopher Comfort at 781-296-2597.

About Decision Resources

Decision Resources (www.decisionresources.com) is a world leader in market research publications, advisory services, and consulting designed to help clients shape strategy, allocate resources, and master their chosen markets. Decision Resources is a Decision Resources, Inc. company.

New Hanover Community Health Center Latest Facility to Expose Patients to Risk of Blood-Borne Illness

<http://wilmington.injuryboard.com>

Jean Martin, Attorney

Headlines about unsanitary hospital practices causing disease outbreaks in places like China, Bulgaria, and even Ireland cause most of us to shake our heads and turn the page.

After all, American hospitals in the 21st Century couldn't possibly transmit fatal diseases by reusing syringes or equipment. Right?

Think again.

Hospitals and clinics in Nebraska, Oklahoma, Nevada, New Jersey, and Texas are just some of the health-care settings in which hundreds of patients have contracted Hepatitis C because workers failed to take proper precautions or outright violated safety protocols.

And now a health clinic in New Hanover county has followed this deadly trend. The New Hanover Community Health Center recently announced that it had sent letters to almost 300 patients who may have been exposed to blood borne illnesses, which can include hepatitis and HIV, due to a machine malfunction. The center recently discovered that a glucose meter used to monitor blood sugar levels in diabetic patients may have malfunctioned so that more than one patient was pricked with the same needle. The patients that were sent warning letters were patients who had been seen since January of this year when this new machine started to be used. It took 6 months for someone to notice that the needles in the meter were not rotating properly? Was this user error instead of a machine malfunction? The patients are being asked to come in for free blood tests. Fortunately, those patients that have been tested to date have tested negatively, but this story is a perfect example of why proper training and proper maintenance of equipment is vitally important.

Not counting hospital outbreaks, the CDC reported earlier this year that 33 outbreaks of hepatitis B and C in settings such as nursing homes and outpatient clinics over the last 10 years put an estimated 60,000 people at risk of bloodborn infections. In those cases, 173 people were diagnosed with hepatitis B and 275 were diagnosed with hepatitis C.

Hepatitis is a virus that comes in six varieties: A, B, C, D, E and G. All of them attack the liver, but hepatitis C is usually considered the most serious. Hepatitis C can be fatal. It can cause liver cancer, liver failure, or cirrhosis. It is usually transmitted by infected blood, often through shared or reused needles.

How can something so dangerous yet so preventable happen in modern American health care facilities?

In little Laurinburg, N.C., last year a technician infected seven patients with Hepatitis C during cardiac stress tests conducted at an outpatient clinic. The tests involve injecting a dye into a patient's vein.

Nearly 100 patients at a cancer clinic inside a Nebraska hospital were infected with hepatitis C from 2000 through 2001 because the clinic reused syringes. In Las Vegas last year, two endoscopy clinics spread the virus to 114 patients by reusing syringes and medicine vials.

In Texas, a nurse at a military hospital injected himself with a patient's drugs and then injected the patient with the same needle, giving him hepatitis C. In Atlantic City this year, 15 people were infected after starting dialysis at an Atlantic City hospital.

In Colorado, 5,700 patients may have been exposed during surgeries at the Rose and Audubon

Surgery Center in Colorado Springs by a technician accused of using their syringes full of painkillers and then refilling them with saline for use on the patients. In that instance, the hospital and the technician may have known the technician needed testing to determine if she was positive for the virus after signs turned up in a pre-employment exam.

These events not only threaten the lives of the patients that health care facilities are supposed to treat; they cast a cloud of fear over thousands of patients notified that they may have been exposed to a dread disease.

It would be easy to blame the technicians performing the seemingly mundane tasks that often result in hepatitis C transmission. But taking blood, injecting dyes, and administering pain medication are medical procedures. Doctors, hospitals and nursing homes should be held responsible for their safe performance.

Thanks to Cory Reiss, summer law clerk and 3L at Wake Forest University School of Law, who was the major contributor to this blog post

August 5, 2009

Underweight and Very Severely Obese Patients at Risk Following Liver Transplantation

<http://www.medicalnewstoday.com>

A recent study by doctors at the University of Washington explained that patients who are significantly underweight or very severely obese prior to liver transplantation are at increased risk of death following transplantation surgery. These findings, from the largest known observation of liver transplantation at the extremes of BMI, are published in the August issue of *Liver Transplantation*, a journal published by John Wiley & Sons on behalf of the American Association for the Study of Liver Diseases.

The research team led by André A. S. Dick, M.D., Department of Surgery, Division of Transplantation, University of Washington investigated the impact of pre-transplantation Body Mass Index (BMI) on post-liver transplantation patient survival. The doctors hypothesized that individuals at the extremes of BMI were at increased risk of death following liver transplantation. In this study, patients with BMI < 18.5 kg/m² were in the underweight group, with 1,827 transplanted, while those with BMI ≥ 40 kg/m² were designated very severely obese, with 1,447 transplanted. Patients with BMI between 18.5 - 40 kg/m² were assigned to a control group (68,172 patients) because they had similar survival rates.

When compared with the control group, the underweight patients had a higher retransplantation rate due to graft failure and were more likely to die from hemorrhagic complications or cerebrovascular accidents. Previous studies in Japan and Korea have shown a relationship between low BMI (< 18.5kg/m²) and increased risk of fatal strokes in the study populations. The authors of this study stated, "These patients should either be screened in the evaluation phase or be given special vigilance in the posttransplantation period to prevent strokes."

After transplantation, the very severely obese patients experienced higher rates of death due to infectious complications and cancer. The authors propose that one mechanism for this apparent

immune deficiency is the presence of diabetes in patients with BMI > 40 kg/m². Previous studies show that diabetic patients are at increased risk of infectious complications after surgical procedures, and supplemental immunosuppressive medication may further exacerbate this process. "An appropriate weight-based immunosuppressive regimen, careful management of severely obese patients' co-morbidities (diabetes, hypertension) and aggressive facilitation of weight reduction can optimize the health of these patients and potentially improve patient outcomes," suggest the researchers.

For patients who are severely obese, past protocol was to resolve their co-morbidities and help them achieve weight loss prior to transplantation. "A better approach might be to transplant these patients sooner by not requiring weight loss or working with the United Network for Organ Sharing (UNOS) for a policy change to assign additional Model for End-Stage Liver Disease (MELD) points for severe obesity, as is done for patients with hepatocellular carcinoma," concluded the authors. "Aggressive management of the patients' co-morbid factors and posttransplantation weight loss is a must." The researchers also recommend a posttransplantation immunosuppressive regimen favoring less immunosuppressive medications without steroids and low dose tacrolimus based on the ideal body weight.

In patients who are underweight the authors recommend "close follow-up with a nutritionist. If the patients are unable to meet their caloric intake prior to transplantation, they should then be admitted to the hospital for aggressive nutritional supplementation such as tube feedings. This aggressive regimen is continued after transplantation." The doctors also suggest a more aggressive immunosuppressive regimen with higher doses of tacrolimus and mycophenolate mofetil.

"Liver Transplantation at the Extremes of Body Mass Index," André Dick, Austin Spitzer, Catherine Seifert, Alysun Deckert, R.L. Carithers, Jorge Reyes, James Perkins, Liver Transplantation, August 2009.

Source: Dawn Peters, Wiley-Blackwell

Dietary Supplements With Steroids Pose Health Danger: Case Studies

<http://www.medicalnewstoday.com>

Three cases of patients suffering from the adverse affects of steroid-enriched dietary supplements have been reported by researchers at Henry Ford Hospital.

The cases, which include patients with liver injury and renal failure, are discussed in the current issue of *The Journal of Clinical Gastroenterology*.

The U.S. Food and Drug Administration last week issued a warning regarding the use of over-the-counter body-building supplements that are illegally enriched with anabolic steroids.

"To date, reports of any deleterious health consequences of purportedly low doses of steroids in dietary supplements are scant but our published cases highlight the potential health consequences of using these supplements, with unwitting subjects becoming the victims," says lead author Stuart C. Gordon, M.D., Division of Gastroenterology and Hepatology at Henry Ford Hospital.

The cases of three otherwise healthy adult males, ages 21 to 38, were reported with symptoms including nausea, anorexia, jaundice, severe itching and renal failure.

- A 21-year-old previously healthy white male presented with nausea, anorexia, jaundice, and severe itching. He denied alcohol consumption or illicit drug use and took no prescription medications on a regular basis but did acknowledge use of the over-the-counter supplement Superdrol, a bodybuilding agent containing methasteron, for several months before his presentation. He had purchased this compound over the internet, and he discontinued taking the supplement at the onset of his symptoms.
- A previously healthy 30-year-old white businessman initially presented to a hospital with a 5-week history of jaundice and severe itching. His medications included omeprazole and herbal supplements including chondroitin sulfate, glucosamine, glutamine, and creatine. He also acknowledged the use of a bodybuilding supplement that contained dehydroepiandrosterone. Concerned about his symptoms, he stopped consuming this supplement just before his hospitalization.
- A 38-year-old previously healthy white man initially presented for evaluation of jaundice. He first noticed the onset of scleral icterus 6 weeks previously. His symptoms included intense and worsening itching, generalized fatigue, nausea, decreased energy, and weight loss. His past history was unremarkable. He denied alcohol or illicit drug use and used no prescription medications. Owing to worsening of his symptoms and renal failure, he was admitted to the hospital.

The three cases outlined in the article now bring the total of cases reported in the last year to six.

"Anabolic steroids have long been known to cause liver damage, but what is not widely known is that over-the-counter health food supplements may actually contain these compounds," says Dr. Gordon. "The buyer of these compounds likely has no idea that he is ingesting these agents, even after reading the small print on the label."

Stuart C. Gordon, Division of Gastroenterology and Hepatology, Henry Ford Hospital, is available for interviews.

Prolonged intrahepatic cholestasis and renal failure secondary to anabolic androgenic steroid-enriched dietary supplements. Krishnan PV, Feng ZZ, Gordon SC. J Clin Gastroenterol. 2009 Aug;43(7):672-5.

Source: Maria Seyrig, Henry Ford Health System

Eiger BioPharmaceuticals Acquires Exclusive License To Novel Hepatitis C Virus (HCV) Technology From Stanford University

<http://www.medicalnewstoday.com>

Eiger BioPharmaceuticals, Inc., a biotechnology company developing antiviral therapies, announced today that it has licensed the exclusive worldwide rights to novel Hepatitis C Virus (HCV) technology from Stanford University. This technology, discovered in the lab of Stanford scientist and Eiger founder Dr. Jeffrey Glenn, M.D., Ph.D., is focused on a variety of novel targets, including key features of NS4B, a non-structural protein in the HCV genome, which



binds to HCV-RNA and is required for viral replication.

"We are delighted to have licensed the rights to this exciting new technology from Stanford University," said David Cory, President and CEO of Eiger. "Disrupting the interaction between NS4B and HCV-RNA may be a promising new method to treat HCV infection and help combat drug resistance to HCV polymerase and protease inhibitors. We are rapidly advancing novel small molecule inhibitors of NS4B-RNA binding into the clinic for the benefit of clinicians and HCV patients."

"The unique two component nature of the NS4B-RNA target appears to decrease the virus' ability to escape inhibition by the small molecule inhibitors in development at Eiger, and that should decrease HCV resistance to this type of antiviral therapy," said Jeffrey Glenn. "These virus specific agents in development at Eiger possess the promise of more effective, oral drugs that can be essential components of all future cocktails for HCV therapy."

About Eiger BioPharmaceuticals, Inc.

Eiger is a biopharmaceutical company focused on the discovery and development of new antiviral agents against novel targets for the treatment of hepatitis virus infections. Eiger's pipeline includes repurposed clinical stage therapeutic agents as well as preclinical NCEs from discovery that exhibit antiviral activity against Hepatitis C, Hepatitis D, and other viruses.

Source: Eiger BioPharmaceuticals, Inc

Lower-Dose Therapy Controls HCV

<http://www.medpagetoday.com>

By Charles Bankhead, Staff Writer, MedPage Today

Reviewed by Zalman S. Agus, MD; Emeritus Professor

University of Pennsylvania School of Medicine and

Dorothy Caputo, MA, RN, BC-ADM, CDE, Nurse Planner Earn CME/CE credit for reading medical news

In this study a low-dose antiviral therapy for hepatitis C infection proved as effective as standard-dose therapy.

Hepatitis C (HCV) therapy based on low-dose peginterferon alpha-2b (Peg-Intron) achieved a sustained virologic response rate and tolerability comparable to a higher dose of alpha-2b and peginterferon alpha-2a (Pegasys), a multicenter clinical trial found.

Rates of sustained virologic response ranged from 38% to 41% among the three regimens. Relapse rates were similar among the three treatment groups, and serious adverse events occurred in 9% to 12% of patients in each group.

The findings came as a surprise, given evidence of a higher rate of sustained response in patients treated with standard-dose peginterferon alpha-2b.

"We aimed to test the hypothesis that use of standard-dose peginterferon alpha-2b with ribavirin would result in a higher rate of sustained virologic response than with the low-dose regimen,"

John G. McHutchison, MD, of Duke University in Durham, N.C., and colleagues reported in the Aug. 6 *New England Journal of Medicine*.

"Although our data do not support this hypothesis, a significant interaction between treatment group and sex suggests that women may have higher rates of sustained virologic response with standard-dose than with low-dose peginterferon alpha-2b."

Treatment guidelines for hepatitis C infection recommend peginterferon alpha-2a or alpha-2b in combination with ribavirin. However, comparative data on the two therapies have been scant.

In an effort to clarify their relative effectiveness and safety, investigators at 118 sites in the U.S. randomized 3,070 patients with HCV genotype 1 to one of three treatment groups:

- peginterferon alpha-2b at a standard dose of 1.5mcg/kg/week plus ribavirin 800 to 1400 mg/d
- peginterferon alpha-2b at a low dose of 1.0 mcg/kg/week plus ribavirin 800 to 1400 mg/d
- peginterferon alpha-2a at a dose of 180 mcg/week plus ribavirin 1000 to 1200 mg/d

Randomized treatment continued for a maximum of 48 weeks, and patients were followed for an additional 24 weeks.

The primary endpoint was sustained virologic response, defined as undetectable HCV RNA 24 weeks after completion of therapy.

When the study ended, rates of sustained virologic response were 38% with low-dose peginterferon alpha-2b, 39.8% with standard-dose alpha-2b, and 40.9% with peginterferon alpha-2a.

Relapse rates were 20% with low-dose peginterferon alpha-2b, 23.5% with standard-dose alpha-2b, and 31.5% for peginterferon alfa-2a.

Overall, patients who had undetectable HCV RNA levels after four and 12 weeks of treatment had sustained virologic response rates of 86.2% and 78.7%, respectively.

Higher ribavirin doses were associated with an increased likelihood of sustained virologic response in all three treatment groups, the authors said.

Patients who weighed 75 to 85 kg received 1000 mg of ribavirin if they were randomized to peginterferon alpha-2b and 1200 mg if they received peginterferon alpha-2a.

In these heavier patients, the sustained response rate was about 10 percentage points higher in the peginterferon alpha-2a group, suggesting that larger patients treated with peginterferon alpha-2b also should receive the higher dose of ribavirin.

Although the overall results did not support the superiority of standard-dose peginterferon alpha-2b, female patients in the standard-dose group had a sustained virologic response rate of 44.3% compared with 35.9% in the low-dose alpha-2b group.

The authors found a significant interaction between treatment group and sex (P=0.01),

suggesting that women may do better with standard-dose peginterferon alpha-2b.

The study was supported by Schering-Plough.

One or more authors disclosed relationships with Schering-Plough, Roche, Vertex Pharmaceuticals, GlobeImmune, Bristol-Myers Squibb, Conatus Pharmaceuticals, Pharmasset, Johnson and Johnson and Tibotec, ZymoGenetics, Biolex, Idenix, GlaxoSmithKline, Coley Pharmaceuticals, Gilead, Pfizer, Wyeth, Valeant, Romark Laboratories, Beckman, Bayer Corp., FibroScan, Kendle Phynova, LabCorp, Merck, Orasure Technologies, Ortho Diagnostics, Siemens, Debio Pharmaceuticals, Peregrine Pharmaceuticals, Intarcia, Intecept, Genentech, Human Genome Sciences, Isis Pharmaceuticals, and Three Rivers Pharmaceuticals. Co-authors included employees of Schering-Plough.

Primary source:

New England Journal of Medicine

Source reference:

McHutchison JG, et al "Peginterferon alfa-2b or alfa-2a with ribavirin for treatment of hepatitis C infection" *N Engl J Med* 2009; 361: 580-93.

Helping America's Least Wanted

<http://www.washingtonpost.com>

By Michael Gerson

WASHINGTON -- The RV arrived at a corner near Marvin Gaye Park, also known to locals as "Needle Park." A steady procession of addicts came to the door, mounted a few steps and sat down. One by one, they dropped used needles into a container and received new needles in return, along with alcohol wipes and the small, bottle cap-like "cookers" in which heroin is heated.

Reggie Jackson, Teefari Mallory and Hazel Smith -- staff members at PreventionWorks!, Washington's largest needle exchange program -- are at the park twice a week, offering clean needles to prevent disease transmission, condoms, drug treatment referrals, AIDS testing and a few kind words. "You still play the guitar?" "You'll have a swollen hand if you keep going there." "Love you, baby."

It is the eyes and arms of addicts that draw your attention. Eyes that are glassy, or unnaturally bright, or tired beyond exhaustion. Arms that are ulcerated sticks or purpled parchment; with repeated use, needles become blunt and tear the skin. Some addicts adopt a defensive politeness - "yes, sir" -- and quickly leave. Others want to talk -- "I love plants and I love kids" -- trying to provide hints of their humanity. They are America's least wanted.

They are also at the center of a controversy. Needle exchange programs have always been politically controversial, with opponents arguing they send a mixed moral message about drug use. The U.S. House recently passed an amendment banning exchanges in the District of Columbia within 1,000 feet of sites where children gather -- which, if approved by the Senate, would effectively put programs like PreventionWorks! out of business. Staffers joke that they

could only work in graveyards and the middle of the Potomac.

This restriction might make sense if needle exchange programs increased the number of addicts. But they don't. Dr. Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases at the National Institutes of Health, has comprehensively reviewed the scientific studies on needle exchange. "It does not," he says, "result in an increase in drug abuse, and it does decrease the incidence of HIV. ... The idea that kids are going to walk out of school and start using drugs because clean needles are available is ridiculous."

My experience in Washington was consistent with Fauci's view. Addicts who came for needles were generally in their 40s and 50s. The availability of clean needles no more caused their addiction than the provision of clean shot glasses would cause alcoholism.

The main purpose of needle exchange, according to Reggie, the supervisor of the mobile unit, is to keep people alive until they can get clean -- a process that can take years, if it happens at all. Needle-sharing is the third-leading cause of HIV infection in our nation's capital. It is also a major contributor to the spread of hepatitis C, the main cause of liver transplants in the United States. Reggie is well acquainted with these facts because, while an addict, he contracted both diseases. "If they had a truck like this in the '60s, '70s and '80s," he told me, "maybe I wouldn't have gotten infected."

The staff of PreventionWorks! builds long-term relationships with people no one else knows by name. Because of this, they have a good feel for when addicts are ready for treatment. While I was in the RV, Reggie signed up two addicts for detox. Teefari used her own car to drive one addict, with whom she had been working for eight years, to treatment. "He's ready, ready to go," she said, fighting tears.

Critics claim that needle exchange programs create a moral hazard by legitimizing drug abuse. But it does not legitimate drug abuse to help people with the clinical disease of addiction avoid other deadly diseases until they are ready for help. Sacrificing the lives of addicts to send an "unmixed" moral message actually sends a troubling moral message: that the unwanted have no worth.

As each addict leaves the RV, Hazel -- who was an addict on the street herself four years ago -- tells them, "I love you." When I asked her why, she said: "If someone years ago had told me they loved me, it might not have been so long."

Street addicts are connected to the rest of us by only a few invisible strands -- people such as Hazel, Reggie and Teefari -- and those strands should not be severed.

August 6, 2009

First human gets new antibody aimed at hepatitis C virus

<http://www.eurekalert.org>

Boston, Mass. — Building upon a series of successful preclinical studies, researchers at MassBiologics of the University of Massachusetts Medical School (UMMS) today announced the beginning of a Phase 1 clinical trial, testing the safety and activity of a human monoclonal

antibody they developed that can neutralize the Hepatitis C virus (HCV).

The first volunteer received the antibody known as **MBL-HCV1** on July 28, 2009, and the study is now proceeding and will eventually involve 30 healthy subjects in a dose-escalation trial expected to conclude later this year. "We are pleased that this program has now entered the clinical trial phase," said Donna Ambrosino, MD, executive director of MassBiologics and a professor of pediatrics at the Medical School. "This trial will test the safety of the antibody and measure its activity in the subjects. This will help us determine the useful dose and other parameters as we plan for the next step in this program, which will be a Phase 2 study in liver transplant patients."

HCV attacks the liver and can eventually lead to liver failure. According to the U.S. Centers for Disease Control and Prevention, 3.2 million Americans are chronically infected with HCV and some 10,000 die annually of the disease. Globally, as many as 170 million people are estimated to suffer from HCV infection. For the most serious cases of HCV that do not respond to antiviral drugs, liver transplantation is the only option.

HCV is the leading indication for liver transplantation, diagnosed in about half of the 6,000 liver transplants done each year in the United States. Transplantation can be a life-saving treatment; however, in nearly all cases the patient's new liver is eventually infected by HCV because the virus remains in the patient's bloodstream during surgery. The powerful antiviral drugs now used to attack HCV prior to end-stage liver failure are not routinely used during surgery due to the patients' weakened condition and because of the strong medication that must be used to prevent the body from rejecting the new liver. After re-infection with HCV, nearly 40 percent of patients suffer rapid liver failure, with markedly reduced survival rates.

To close that clinical gap, the new antibody developed at MassBiologics is designed to be a therapy shortly before and after transplant surgery. By giving a patient the new antibody before and during the time when the donor liver is implanted, researchers hope the HCV virus left in the bloodstream will be neutralized and rendered unable to infect the new liver. Then, because monoclonal antibodies are highly specific and typically have little or no side-effects, additional dosages of the new antibody could, theoretically, be given immediately after transplant surgery to continue neutralizing any remaining virus.

It is also possible, researchers theorize, that the antibody could be used in combination with new antiviral drugs for treatment in patients with newly diagnosed HCV infection. "There is still more work to be done, but we are encouraged by the progress of this program to date," Dr. Ambrosino noted. "And we are grateful to the people who have volunteered to participate in this Phase 1 study. These subjects' participation will help others and advance the cause of human health."

About MassBiologics

MassBiologics, also known as the Massachusetts Biologic Laboratories, is the only non-profit FDA- licensed manufacturer of vaccines and other biologic products in the United States. MassBiologics produces 30 percent of the US tetanus/diphtheria vaccine supply. In addition to the HCV program, MassBiologics has discovered and developed human monoclonal antibodies to severe acute respiratory syndrome (SARS), and to *Clostridium difficile* (*C. difficile*), which have shown efficacy in Phase 2, and to rabies which will be starting Phase 1 soon in

collaboration with the Serum Institute of India. MassBiologics traces its roots to 1894, and since then has maintained a mission to improve public health through applied research, development and production of biologic products. MassBiologics has been a part of the University of Massachusetts Medical School since 1997.

CureTech to begin hepatitis vaccine trial

<http://www.globes.co.il>

Yael Gruntman

The trial is part of CureTech's collaboration with Teva.

Biotechnology drug developer CureTech Ltd. has obtained approval to begin its Phase I/II clinical trial of its CT-1011, a humanized monoclonal antibody, for the treatment of hepatitis C. The trial will include 20 patients and will begin toward the end of the year.

The trial is part of CureTech's collaboration with Teva Pharmaceutical Industries Ltd. (Nasdaq: TEVA; TASE: TEVA). As part of this collaboration, CureTech is also conducting a Phase II clinical trial of CT-1011 for the treatment of liver and bowel cancer.

Hepatitis B Vaccine Development

<http://www.drugs.com>

BERKELEY, Calif.--(BUSINESS WIRE)--Aug 4, 2009 - Dynavax Technologies Corporation (Nasdaq:DVAX) today announced it has met with the U.S. Food and Drug Administration (FDA) to discuss its plans to resume development of HEPLISAVTM, the Company's Phase 3 investigational hepatitis B vaccine.

Dynavax proposed the continued clinical development of HEPLISAV in populations that are less responsive to current licensed hepatitis B vaccines, including adults over 40 years of age, individuals with chronic kidney disease, and other groups such as individuals infected with HIV or diagnosed with chronic liver disease. The FDA expressed a general agreement that these populations are appropriate for further clinical development, pending the review of the study protocols and additional supportive data.

Dynavax plans to submit this information to the FDA in August 2009 with a goal of having the agency remove the clinical hold in September 2009. The Company is prepared to restart clinical trials in individuals with chronic kidney disease upon removal of the clinical hold.

Hepatitis B Vaccines and Market Opportunity

Hepatitis B is a chronic disease which can lead to cirrhosis of the liver and hepatocellular carcinoma. There is no cure for hepatitis B and disease prevention through effective vaccination is critical to reducing the spread of the disease. The total worldwide market for adult hepatitis B vaccines is estimated at over \$500 million annually.

ESRD Market - The ESRD market is large and growing rapidly. In the United States alone, there are approximately 500,000 ESRD patients and 100,000 new patients annually, with similar

numbers in Europe. CDC recommends universal vaccination of ESRD patients. Since ESRD patients are less responsive to current vaccines, hepatitis B vaccination regimens for ESRD consist of 8 doses of Engerix-B® over six months (versus 3 doses for the general population). Many ESRD patients do not respond to vaccination and boosters or revaccination is recommended. As ESRD patients are vaccinated regularly at dialysis centers, this is a highly concentrated, renewable market that can be served by cost-effective, targeted sales distribution networks.

About HEPLISAV

HEPLISAV is a Phase 3 investigational hepatitis B vaccine targeted for adults who are less responsive to current licensed hepatitis B vaccines, including adults over 40 years of age, individuals with chronic kidney disease (including end-stage renal disease, or ESRD, patients), and individuals infected with HIV or diagnosed with chronic liver disease (including hepatitis C virus).

Phase 3 data from the PHAST clinical trial demonstrate subjects over 40 years of age receiving two doses of HEPLISAV over one month achieved a seroprotection rate of 92%, compared to 75% of subjects receiving 3 doses of a licensed vaccine over six months. Over 2,500 individuals have been vaccinated with HEPLISAV to date.

Dynavax has worldwide commercial rights to HEPLISAV, which combines hepatitis B surface antigen (HBsAg) with a proprietary Toll-like Receptor 9 agonist to enhance the immune response.

About Dynavax

Dynavax Technologies Corporation, a clinical-stage biopharmaceutical company, discovers and develops novel products to prevent and treat infectious diseases. The Company's lead product candidate is HEPLISAV, a Phase 3 vaccine targeted for individuals who are less responsive to current licensed hepatitis B vaccines. For more information visit www.dynavax.com.

NJ Oncologist Sued by Patient for Spreading Hepatitis B

<http://www.attorneyatlaw.com>

A New Jersey oncologist has been sued by a former patient who says he contracted hepatitis B after being treated for prostate cancer at the physician's office.

Patient Roland Jacobsen sued Dr. Parvez Dara last month and said he only tested positive for hepatitis B after visiting the doctor for cancer treatments in 2008 and 2009. Dara's office is located in Toms River and treated thousands of patients over a period of 23 years.

"He goes in for treatment and bam, there it is," said his attorney, Andrew McDonald said. "It not only affects him, but his wife and everyone he's surrounded by."

In March, New Jersey state health officials warned about 3,000 of Dara's patients to get blood tests to find out if they were infected with hepatitis B, hepatitis C, and for HIV, the virus that causes AIDS. Hepatitis B is a serious liver disease that is passed by exposure to infected blood and can result in severe liver damage and other health consequences.

Dara's state medical license was suspended in April after authorities cited evidence showing he may have spread hepatitis B to patients. State inspectors who went through Dara's office said they found patients' blood on the floor and in a plastic bin where patient blood vials were stored, as well as other sanitary problems that could have led to a spread of hepatitis B.

Dara has racked up a string of health code violations since 2002 and paid nearly \$56,000 in fines for the violations, state officials said.

But Dara's attorney said the doctor is not responsible for Jacobsen's case of hepatitis B or other infections state health officials have indicated may have been contracted at his office.

"There are a number of possible medical reasons that explain why hepatitis B may have developed among patients — particularly those being treated for cancer with chemotherapy," said attorney Timothy White said. "To publicly link a medical practice to these occurrences before or during an ongoing investigation is irresponsible."

Blueberry leaves can halt hepatitis C virus

www.prokerala.com

A chemical in blueberry leaves halts reproduction of the hepatitis C virus (HCV), which infects 200 million people worldwide and can eventually lead to cirrhosis and liver cancer.

Currently, there is no vaccine for HCV, and though a combination drug regimen can clear HCV infection, this treatment is only about 60 percent effective and poses risks of severe side effects.

Hiroaki Kataoka and colleagues at the University of Miyazaki (U-M) in Japan believed that since HCV is localised in the liver and can take 20 years or more to develop into disease, a dietary supplement might help slow or stop disease progression.

So they screened nearly 300 different agricultural products for potential compounds that suppress HCV replication and uncovered a strong candidate in the leaves of rabbit-eye blueberry (native to the southeastern US).

They purified the compound and identified it as proanthocyanidin (a polyphenol similar to the beneficial chemicals found in grapes and wine).

While proanthocyanidin can be harmful, Kataoka and colleagues noted its effective concentration against HCV was 100 times less than the toxic threshold, said an U-M statement.

Similar chemicals are found in many edible plants, suggesting it should be safe as a dietary supplement. Researchers now hope to explore the detailed mechanisms of how this chemical stops HCV replication.

These findings appeared in Friday's edition of the *Journal of Biological Chemistry*.