

HCV ADVOCATE WEEKLY NEWS REVIEW

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

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In This Issue:

- [Testosterone Replacement For Men With Low Testosterone Improves Liver Function, Metabolic Syndrome](#)
- [Hearing to air VA explanation of hospital mistakes](#)
- [Study shows promise for new cancer-stopping therapy](#)
- [Evidence Points to Large International Network of HCV Transmission among HIV Positive Men Who Have Sex with Men](#)
- [FibroTest attributes to generate decision trees in hepatitis C](#)
- [Three Rivers Announces Positive Results from Phase 3 DIRECT Trial of Once-Daily INFERGEN\(R\) with Ribavirin in Hepatitis C Virus Treatment Failures](#)
- [Inflammatory Molecules Promote Liver Scarring](#)
- [Get needles into prisons, says new report](#)
- [Hepatitis B vaccine prices increase](#)
- [Hydroxycut Liver Failure Lawsuit Filed Following Recall](#)
- [Hepatitis C patients tend to develop liver cancer: Taiwan researcher](#)
- [VA Blasted at Hearing on Contamination Scandal](#)
- [House panel passes food safety reform bill](#)
- [Healthcare costs for U.S. companies seen rising 9 percent: survey](#)
- [Risk Of Liver Cancer In Women With Hepatitis B Virus Infection Varies With Number Of Pregnancies](#)
- [Tainted blood: A promise delayed](#)
- [Lost Molecule Is Lethal for Liver Cancer Cells in Mice](#)
- [Lamivudine with Thymosin Better Than Lamivudine Alone against Hepatitis B](#)

- [Human Genome Sciences Announces Completion of Enrollment in Phase 2b Monthly-Dosing Trial of Albuferon\(R\)](#)

June 13, 2009

Testosterone Replacement For Men With Low Testosterone Improves Liver Function, Metabolic Syndrome

<http://www.medicalnewstoday.com>

In middle-aged and older men with low testosterone levels, long-term testosterone replacement therapy greatly improves their fatty liver disease and their risk factors for cardiovascular disease and diabetes, a new study found. The results were presented at The Endocrine Society's 91st Annual Meeting in Washington, D.C.

Testosterone deficiency, which becomes more common with age, is linked not only to decreased libido but also to a number of medical problems. These include the metabolic syndrome a cluster of metabolic risk factors that increase the chances of developing heart disease, stroke and type 2 diabetes. Nonalcoholic fatty liver disease, also called a fatty liver, commonly co-occurs with the metabolic syndrome and may aggravate the metabolic problems. To receive a diagnosis of the metabolic syndrome, patients must have three of the following five risk factors: abdominal obesity (a large waist line), low HDL ("good") cholesterol, high triglycerides (fats in the blood), high blood pressure and high blood sugar.

"Physicians often are reluctant to prescribe testosterone for conditions not related to sexual function," said the study's co-author, Farid Saad, PhD, of Berlin-headquartered Bayer Schering Pharma. "However, our study shows that testosterone has a much wider therapeutic role than just for improving sexual desire and erectile function."

The study included 122 testosterone-deficient men, ages 36 to 69 years (mean age: 59.5). Results showed that restoring testosterone to normal levels led to major and progressive improvements in many features of the metabolic syndrome over the 2 years of treatment. Specifically, the men's weight, waist line and body mass index (a measure of body fat) continued to decline over the full study period. The other metabolic risk factors also significantly improved during the first year of testosterone treatment. Of the 47 men who met the criteria for a diagnosis of the metabolic syndrome at the beginning of the study, 36 (77 percent) no longer had the diagnosis after 2 years of treatment, the authors reported.

Furthermore, liver function significantly improved during the first 12 to 18 months of therapy and stabilized for the remainder of the study period. Treatment also greatly decreased blood levels of C-reactive protein, a measure of inflammation that is linked to increased risk of cardiovascular disease.

"We conclude that testosterone therapy in men with testosterone deficiency can largely improve or even remedy the metabolic syndrome, which will most likely decrease their risk of diabetes and cardiovascular disease," Saad said.

Study participants received treatment in Bremerhaven, Germany. Treatment used a slow-release, injectable form of the male hormone (testosterone undecanoate) that is not yet available in the United States.

Saad is an employee of Bayer Schering, which makes a brand of testosterone undecanoate.

Source: Endocrine Society

June 14, 2009

Hearing to air VA explanation of hospital mistakes

<http://www.google.com>

By Bill Poovey

CHATTANOOGA, Tenn. (AP) — After months of health worries for more than 10,000 veterans, officials at the Department of Veterans Affairs are expected to face a congressional panel Tuesday and explain how mistakes at three hospitals in the Southeast may have exposed patients to HIV and other infectious diseases.

"Somebody is going to have to take responsibility," said U.S. Rep. Phil Roe of Tennessee, the ranking Republican on the House Committee on Veterans' Affairs' oversight and investigation subcommittee.

The subcommittee scheduled Tuesday's hearing in Washington to discuss the endoscopic equipment mistakes at VA hospitals in Miami, Murfreesboro, Tenn., and Augusta, Ga., with top agency officials and to receive a yet-unreleased report by the VA's inspector general.

Roe said he had not yet seen the report but was told in a briefing Friday that the VA's inspector general conducted a random check on 42 VA locations.

VA officials have said problems discovered at more than a dozen other VA facilities did not warrant follow-up blood tests for patients. Roe, who is a private physician, has questions about whether the problems were isolated to three hospitals or were more widespread.

"I think this was an institutional breakdown," Roe said.

The VA since February has been warning about 10,000 former patients, some who had colonoscopies as long ago as 2003, to get blood tests for HIV and hepatitis.

As of Friday, the VA reported that six veterans taking the follow-up blood checks tested positive for HIV, 34 tested positive for hepatitis C and 13 tested positive for hepatitis B. All but 724 affected patients have been notified of test results.

VA spokeswoman Katie Roberts did not respond to repeated requests for comment Thursday and Friday.

The initial discovery of an equipment mistake at Murfreesboro led to a nationwide safety "step-up" by the VA at its 153 medical centers. Since then, the VA says the problems have been

discussed with staff at all VA hospitals and with representatives of the equipment manufacturer, Olympus American.

The VA's chief patient safety officer, Dr. Jim Bagian, has said no one will ever know if the patients with HIV and hepatitis were infected because of improperly operated or cleaned endoscopic equipment used in colonoscopies at Murfreesboro and Miami — and to treat patients at the VA's ear, nose and throat clinic in Augusta. Bagian has also said all the mistakes were human error.

Roe said he believes the VA has been open and trying to keep former patients and the public informed since discovering the mistakes in December. "These people did not intentionally do anything wrong," he said.

That is not always the case when private-sector hospitals discover mistakes, according to Barbara Rudolph, director of The Leapfrog Group, which promotes quality health care.

She said private hospitals also have spread infectious diseases with unsterile equipment, but requirements on reporting such problems vary by state and there's no national regulation requiring disclosure.

"Some hospitals have become very open and have made a commitment to be transparent about things like that," she said. "There are a number of hospitals who would not have gone as far as the VA has gone."

Michael Sheppard, a Nashville lawyer who represents dozens of veterans among the affected VA patients, wrote in a June 3 letter to the committee that it was "hard to describe the upheaval and injury this has caused innocent veterans."

"Some no longer trust or have confidence in the VA medical facilities and feel betrayed, misled and ill-informed," Sheppard wrote, adding others may avoid colonoscopies for fear of HIV or other infections.

A spokesman for the American Society for Gastrointestinal Endoscopy, Dr. David A. Greenwald, said in a telephone interview from the Montefiore Medical Center in New York that although the VA patients recently tested positive, they could have had the viruses for years — and before the VA treated them — without showing symptoms.

Greenwald said the positive tests for HIV and hepatitis C reported by the VA are far below the frequency of positive tests reported from studies of other groups of veterans. He said the same is likely true of the hepatitis B cases.

"Probably all of the infections that are being reported are infections people already had," Greenwald said.

Megan Longenderfer, a spokeswoman for Olympus America, said from the equipment maker's vantage point the VA "has been diligent and transparent in its investigation and corrective action."

Study shows promise for new cancer-stopping therapy

<http://www.innovations-report.de>

Strategy could have implications for multiple tumor types

Researchers at Nationwide Children's Hospital and Johns Hopkins University have discovered that delivering a small molecule that is highly expressed in normal tissues but lost in diseased cells can result in tumor suppression.

MicroRNAs (miRNA) are a class of small RNA molecules that are highly expressed in normal tissues and are critical in gene expression and in maintaining normal cell development and cell balance. Dysfunction of miRNAs has been linked to multiple human diseases including schizophrenia, autism and cancer.

"The pattern of expression of miRNAs has emerged as critically useful information for understanding cancer development and could be used to establish prognosis and treatment responses," said Janaiah Kota, PhD, a postdoctoral scientist from Nationwide Children's.

In a study reported in *Cell* (June 12, 2009), the team of researchers employed a novel strategy to treat an important form of cancer. Studies targeted hepatocellular (liver) cancer (HCC), the third leading cause of cancer-related deaths. HCC is commonly associated with underlying liver abnormalities, such as hepatitis B and C infections and cirrhosis. HCC is difficult to treat since it is often diagnosed at an advanced stage and because its biologic composition makes the tumor highly resistant to current drug therapies. However, the research reported in *Cell* suggests that miRNA gene delivery may be a clinically viable therapy when delivered by a recombinant adeno-associated virus (AAV).

HCC expresses a reduced number of miRNAs, including miR-26a. By combining miRNA technology developed at Johns Hopkins University with the gene delivery expertise of Nationwide Children's Hospital, scientists were able to successfully deliver AAV carrying miR-26a to a mouse with established HCC. This gene therapy strategy inhibited growth of cancer cells and led to tumor reduction and cell death, without causing toxic side effects to the remainder of the liver. This demonstrates for the first time that therapeutic delivery of a miRNA in an animal can result in tumor suppression, without the need for specifically targeting the cancer causing oncogene.

"We are eagerly looking forward to applying this methodology to other tumor types in the laboratory and potentially bringing this approach forward for clinical testing in patients," said Jerry Mendell, MD, director, Center for Gene Therapy in The Research Institute at Nationwide Children's Hospital and a faculty member of The Ohio State University College of Medicine. "While there remains significant work to be done both in identifying such miRNAs and optimizing their delivery, our findings highlight the therapeutic promise of this approach."

The findings of therapeutic miRNA gene replacement in HCC has potential for applicability to other types of cancers, as well. The delivery and restoration of miRNA expression via AAV mediated gene transfer of the miRNA may be beneficial to a large number of cancer subtypes.

"This concept of replacing microRNAs that are expressed in high levels in normal tissues but lost in diseases hasn't been explored before," said Josh Mendell, M.D., Ph.D., an associate professor in the McKusick-Nathans Institute of Genetic Medicine, Johns Hopkins University School of Medicine. "Our work raises the possibility of a more general therapeutic approach that is based on restoring microRNAs to diseased tissues."

Mary Ellen Peacock / Quelle: EurekAlert!

Evidence Points to Large International Network of HCV Transmission among HIV Positive Men Who Have Sex with Men

<http://www.actions-traitements.org>

By Liz Highleyman

Since the early 2000s, clinicians in the U.K. and continental Europe have report clusters of apparently sexually transmitted acute hepatitis C virus (HCV) infection, mostly among HIV positive men who have sex with men (MSM). More recently, similar outbreaks have been reported in Australia and the U.S.

Acute hepatitis C is often asymptomatic and therefore never diagnosed. HIV positive individuals taking antiretroviral therapy typically receive regular monitoring to check for liver toxicity, and sudden unexplained increases in liver enzymes may signal acute HCV. It is unclear whether HIV positive men are actually more likely than HIV negative men to contract HCV via sex, or whether they are simply more likely to be diagnosed during the acute stage.

Numerous reports about the recent acute hepatitis C outbreaks have been presented at scientific conferences over the past several years. While specifics vary from study to study, these acute infections have been linked to unprotected anal intercourse, fisting, multiple sex partners, group sex, use of sex toys, nasal recreational drug use, and presence of other sexually transmitted diseases ; the men involved typically do not report traditional HCV risk factors such as injection drug use.

Now, researchers from the U.K., Netherlands, France, Germany, and Australia have published a combined analysis of these clusters in the May 2009 issue of *Gastroenterology*.

The authors conducted an international phylogenetic study to investigate the existence of a common HCV transmission network among more than 200 HIV positive gay/bisexual men. The analysis included 107 men in the U.K., 58 in the Netherlands, 25 in Germany, 24 in Australia, and 12 in France who were diagnosed with acute hepatitis C between 2000 and 2006.

The men in this analysis were relatively young, with a median age of 38 years at the time of HCV diagnosis. Nearly two-thirds were on combination antiretroviral therapy and as a group they had well-preserved immune function, with a median CD4 count of 518 cells/mm³.

The researchers used real-time polymerase chain reaction (PCR) technology to amplify, sequence, and compare the NS5B region of the HCV genome. NS5B sequences were obtained from 200 (89%) of the total reported cases.

Results

- Circulating HCV genotypes in the tested patients were as follows :
 - 1a : 59% ;
 - 1b : 5% ;
 - 2b or 2c : 3% ;
 - 3a : 11% ;
 - 4d : 23% — an otherwise uncommon type in Europe.
- Phylogenetic analysis revealed 156 sequences, or 78%, that formed 11 clusters (bootstrap value > 70%).
- These clusters included 86% of the European cases and 42% of the Australian cases studied.
- Each cluster contained between 4 and 37 individual sequences.
- Country mixing was associated with larger cluster size (average 17 sequences) relative to single-country clusters (4.5 sequences).
- A "molecular clock" analysis indicated that the majority of HCV transmissions (85%) occurred after 1996.

Based on these findings, the study authors wrote, "Phylogenetic analysis revealed a large international network of HCV transmission among HIV positive MSM."

"The rapid spread of HCV among neighboring countries is supported by the large proportion (74%) of European MSM infected with an HCV strain co-circulating in multiple European countries, the low evolutionary distances among HCV isolates from different countries, and the trend toward increased country mixing with increasing cluster size," they added.

In their discussion, the researchers explained that such clustering "is typical of multiple independent, parallel chains of transmission, each seeded by a single source of infection." They added that the observed evolutionary pattern "would imply occasional introduction and transmission of HCV in the MSM population between 1975 and 1996, followed by a more rapid expansion of HCV transmission among HIV positive MSM since 1996."

"The reason for a change in HCV transmission pattern since the late 1990s remains unclear, but it probably relates to biologic and behavioral factors," they wrote. "Temporally, this epidemic coincides with the introduction of highly active antiretroviral therapy and associated increases in sexual risk behaviors."

"It is striking that permucosal transmission of HCV is almost exclusively described in HIV positive MSM," the authors continued. "HIV coinfection might facilitate HCV transmission by increasing both viral infectiousness because of higher HCV viral loads in serum and semen and viral susceptibility through impaired immunologic control of HCV," they suggested, though the men involved generally had relatively high CD4 counts.

On the other hand, they pointed out that several cases of apparently sexually transmitted HCV were recently reported among HIV negative gay/bisexual men in Brighton, UK, thus "raising the possibility of the infection bridging between HIV positive and HIV negative MSM populations." (In 2006, French researchers reported 2 similar acute HCV cases in HIV positive woman, suggesting that heterosexual transmission may also be occurring.)

The investigators recommended that "International collaborative public health efforts are needed

to mitigate HCV transmission among this population."

"Annual HCV antibody screening should become part of the routine care of all HIV positive MSM and should be considered for MSM with negative or unknown HIV status who report high-risk behaviors," they elaborated. "Early detection of HCV will allow early effective treatment and identification of risk factors, which may mitigate ongoing transmission."

Reference

T van de Laar, O Pybus, S Bruisten, and others. Evidence of a Large, International Network of HCV Transmission in HIV-Positive Men Who Have Sex with Men. *Gastroenterology* 136(5) : 1609-1617. May 2009

FibroTest attributes to generate decision trees in hepatitis C

<http://www.physorg.com>

In recent years the use of non-invasive biomarkers to assess liver fibrosis has become widely accepted. Although the combination of surrogate markers, such as those employed by the FibroTest, have a high predictive value for the assessment of significant fibrosis, it is important to find tools that can improve its accuracy, particularly in intermediate stages and to reinforce its reliability by ensuring that the classification results are independent of contingent features of the classification technique.

A research article to be published in the *World Journal of Gastroenterology* explored the automatic generation of decision trees to simplify a classification process and to provide additional information to support the classification rationale. The research group, led by Dr. Kershenovich from México's National University (UNAM), used the C4.5 classification algorithm to construct decision trees with data from 261 patients with chronic hepatitis C without a liver biopsy. The FibroTest attributes (age, gender, bilirubin, apolipoprotein, haptoglobin, 2 macroglobulin, and glutamyl transpeptidase) were used as predictors, and the FibroTest score as the target.

The construction of decision trees using the FibroTest attributes provided explicit rules to relate the range of values of the biomarkers with fibrosis scores, and they might help in gaining a better grasp of the importance and significance of the test.

Analysis, such as the one performed in the present work, could help to further classify preclinical subgroups and identify subclasses of rapid or slower fibrosers. This classification should enhance our ability to assess differences in fibrosis scores in clinical studies and improve our understanding of fibrosis progression.

The present work is the result of a group effort between members of the Department of Experimental Medicine of the Faculty of Medicine and the Institute of Applied Mathematics at the Universidad Nacional Autónoma de México (UNAM), which provided a grant to support the investigation.

Source: World Journal of Gastroenterology

Three Rivers Announces Positive Results from Phase 3 DIRECT Trial of Once-Daily INFERGEN(R) with Ribavirin in Hepatitis C Virus Treatment Failures

<http://news.prnewswire.com>

WARRENDALE, Pa., June 16 /PRNewswire/ -- Three Rivers Pharmaceuticals announced today positive results of the U.S.-based, randomized Daily-Dose Consensus Interferon and Ribavirin: Efficacy of Combined Therapy (DIRECT) clinical trial authored by Bruce R. Bacon, M.D., of Saint Louis University, and colleagues at 44 centers in the United States. The primary endpoint of increased sustained virological response (SVR), was achieved demonstrating that INFERGEN provides a second chance to those HCV patients failing to respond to standard, first-line therapy of pegylated interferon (PEG-IFN) plus ribavirin (RBV). "The retreatment of PEG-IFN/RBV nonresponders with INFERGEN and RBV is safe and efficacious and can be considered a retreatment strategy for patients failing previous therapy with PEG-IFN/RBV, especially in interferon-sensitive patients with lower baseline fibrosis scores," stated Dr. Bruce Bacon the lead Investigator for the study.

Among participants who failed initial treatment with PEG-IFN/RBV, retreatment with INFERGEN in combination with RBV yielded SVR rates as high as 31.6 % in interferon-sensitive patients with low baseline liver fibrosis scores, the researchers reported in the June 2009 issue of *Hepatology*. Overall intent to treat analysis was 6.9% among the 9 mcg/day group and 10.7% in the 15 mcg/day group.

Defining viral response at Weeks 12 and 24 with INFERGEN and RBV in patients who were prior non-responders to PEG-IFN/RBV therapy can help predict SVR rates in this difficult-to-treat group of patients. All patients attaining SVR demonstrated > 2-log drop at Week 12 of INFERGEN/RBV therapy. Of significant note for these patients was the analysis regarding viral response at 12 weeks. In the DIRECT trial, 81.3% and 63.6% of patients achieving viral negativity at Week 12 went on to have an SVR in the 9 mcg and 15 mcg arms, respectively. In addition, slow responders achieved SVR rates of 11.7% and 35.4% in the 9 mcg and 15 mcg arms. Regardless of treatment dose used, attaining viral negativity at Week 12 or at Week 24 while on therapy with INFERGEN and RBV leads to a high sustained virological response rate.

"These results represent a significant step forward for HCV patients who deserve a second chance at a potential cure for this chronic viral infection" stated Donald Kerrish, President and CEO of Three Rivers Pharmaceuticals.

Approximately 50% of patients with chronic hepatitis C fail to respond to their initial course of PEG-IFN/RBV therapy. No standard has yet emerged for second-line therapy, since simply repeating the same treatment, in well controlled trials, has yielded low response rates around 2-6%.

The DIRECT trial was a phase 3, randomized, open-label, multicenter, U.S.-based trial conducted to investigate the efficacy, tolerability, and safety of daily INFERGEN at dosages of 9 and 15 mcg/day administered with daily weight-based RBV. The study tested 2 dosages of

INFERGEN in 487 documented non-responders, of which 80% did not achieve a 2-log drop on prior pegylated-interferon plus ribavirin therapy. The best SVR rates were seen in:

- Patients achieving the greatest reduction in baseline viral load with peg-IFN/RBV therapy, especially in patients demonstrating > 1-log drop with initial therapy
- Patients with fibrosis scores of F0 to F3 at baseline demonstrated SVRs of 7.8% in the 9 mcg arm and 13.1% in the 15 mcg arm
- Patients maintaining full dose of INFERGEN/RBV therapy had SVRs of 7% and 17% for the 9 mcg and 15 mcg arms respectively
- Patients demonstrating partial response (>2-log drop) with previous treatment and low fibrosis scores F0-F3 had SVRs of 10.7% and 31.6% for the 9 mcg and 15 mcg arms

Patients with cirrhosis were less likely to benefit from retreatment with INFERGEN and RBV unless they displayed previous interferon sensitivity of at least 1-log drop in viral levels on prior therapy.

About Consensus Interferon (INFERGEN(R))

Consensus Interferon or INFERGEN(R) is a unique, bio-optimized, selective and highly potent type 1 interferon alpha. INFERGEN is indicated for the treatment of chronic HCV infection in patients 18 years of age or older with compensated liver disease who have anti-HCV serum antibodies and /or the presence of HCV RNA. INFERGEN is currently FDA approved for TIW monotherapy dosing in naive and previous treatment failure patients.

About Three Rivers Pharmaceuticals

Three Rivers Pharmaceuticals is a privately held company headquartered in Warrendale, Pennsylvania that focuses on specialized therapies including hepatitis C therapies. More information about the company can be found at www.3riverspharma.com.

SOURCE Three Rivers Pharmaceuticals, LLC

June 17, 2009

Inflammatory Molecules Promote Liver Scarring

<http://www.medicalnewstoday.com>

Scarring of the liver, which can progress to cirrhosis and/or cancer of the liver, is caused by persistent liver damage, such as occurs in those with untreated hepatitis C or alcoholism. Although such scarring (fibrosis) develops in an inflammatory environment, the role of inflammatory molecules has not been well defined. However, a team of researchers at Columbia University, New York, and UCSD, La Jolla, has established that the proteins CCR1 and CCR5 and the soluble inflammatory molecules that bind to them promote the development of liver fibrosis in mice.

The team, led by Robert Schwabe and Ekihiro Seki, observed that expression of the inflammatory molecules MIP-1-alpha, MIP-1-beta, and RANTES, and the proteins to which they bind (CCR1 and CCR5), was increased in 2 mouse models of liver fibrosis. Consistent with a role for these molecules in the development of liver fibrosis, preventing the inflammatory molecules binding CCR1 and CCR5 reduced liver fibrosis, as did eliminating expression of either CCR1 or CCR5. The latter experiments also identified the cells on which CCR1 and CCR5

expression is important for promoting liver fibrosis. As expression of RANTES, CCR1, and CCR5 was detected in the livers of patients with cirrhosis, the authors suggest that targeting CCR1 and CCR5 (for which there are already small molecule inhibitors in clinical development) might be a viable approach to prevent liver fibrosis.

TITLE: CCR1 and CCR5 promote hepatic fibrosis in mice

View the PDF of this article at: <https://www.the-jci.org/article.php?id=37444>

Source: Karen Honey, *Journal of Clinical Investigation*
JCI online early table of contents: June 15, 2009

June 17, 2009

Get needles into prisons, says new report

<http://www.xtra.ca>

Neil McKinnon

Each syringe used up to 200 times in prison

Armed with startling information about HIV and hepatitis C infection rates in prison, a leading Canadian AIDS organization is calling for a clean needle program to curb transmissions in Canada's jails.

A report by Canadian HIV/AIDS Legal Network argues that access to sterile injecting equipment for Canada's prisoners would reduce the risks associated with injection drug use, including the transmission of HIV and hepatitis C virus (HCV).

Clean Switch: The Case for Prison Needle and Syringe Programs in Canada was released June 4.

Currently, there are no prison-based needle and syringe programs (PNSPs) in any of the country's 53 federal prisons. In Canadian prisons, the HIV transmission rate is seven to 10 times higher than in the general population. Rates of hepatitis transmission are 30 times higher among prisons than in the general population. According to recent research cited in the Clean Switch report, 29.9 per cent of Canadian inmates tested for hep C were positive.

Ralph Chernenko, a 47-year-old former inmate, was diagnosed with HIV 28 years ago. He's unsure if he was infected while in prison. His drug use began when his father gave him Ritalin and Valium at the age of five. He continues to use morphine and cocaine intravenously.

"I had access to more drugs inside than what was on street. Before the province cut out smoking, it was fun to go to jail. Injecting drugs is a common thing inside," says Chernenko.

Chernenko says getting drugs in prison was easier than getting drug paraphernalia, such as syringes. He says that, in prison, one new syringe costs approximately \$100. That same syringe would then be used up to 200 times by about 100 people. When the syringe's needle gets dull, it is sharpened. If it breaks, prisoners continue to use it, often leading to infected abscesses. He says PNSPs would definitely slow down HIV and HCV transmission in Canadian prisons.

Canada's queer communities pioneered this kind of harm reduction approach to public health during the early days of the AIDS epidemic. They have long argued that health policies have to meet people where they're at. Early harm reduction programs suggested, for example, that preaching condom use is more effective than abstinence in fighting sexually transmitted infections.

Sandra Chu is the lead author of *Clean Switch* and a senior policy analyst at the Canadian HIV/AIDS Legal Network. Chu says the Canadian government needs to work on pilot projects to implement PNSPs to reduce new infections in prison. But in order to make this program work, she says, people need to be reassured of their anonymity.

"There are different ways to implement (PNSPs). People who have been incarcerated told us that's its really important to have confidentiality. They don't want to get caught getting a clean needle."

Chu points out PNSPs are working successfully in other countries throughout Europe and Central Asia. In 1992, Switzerland became the first country to offer PNSPs. Since then, studies have shown a strong reduction in the prevalence of HIV and HCV infections in prisons that offer PNSPs.

"In countries where they offer PNSPs, they have machines where you put in your old needle and get a new needle. In theory, prison staff won't know if you're getting a clean needle," says Chu.

Under the Correctional and Conditional Release Act — which governs the Correctional Service of Canada and all federal prisons — CSC is required "to take all reasonable steps to ensure that penitentiaries, the penitentiary environment, the living and working conditions of inmates and the working conditions of staff members are safe, healthful and free of practices that undermine a person's sense of personal dignity."

"People in the community have the tools to prevent themselves from contracting hep C and HIV. We shouldn't deny those same tools to people inside prison. The majority of people in prison come out to the community — if they come out infected, that affects all of us," says Chu.

Anne Marie Dicenco is the executive director of Prisoner's HIV/AIDS Support Action Network.

She works with people in prison and people who have been released from prison who are HIV- and/or HCV-positive.

"There are needle exchange programs in the community, even though drugs are illegal. This isn't a moral issue. This is a health issue. It's a HCV/HIV issue. The reality is, people use drugs. That's why a lot of people go to prison. If we know we're locking up a lot of people who use drugs, then we need to think about the health consequences if they're going to continue using drugs," says Dicenco.

Heather, 33, prefers not to give her last name. She says she contracted HCV in prison, sharing needles for drug use. Before she went to prison, she shared needles and sold her body hundreds of times for money without any health problems. She is now five years sober, in remission from HCV, and lives with her wife and two children.

"Most prisoners have gone through life disobeying rules. Putting a Gideon Bible on their bed and telling them to pray and behave doesn't work. They're going to continue using drugs until they're ready to stop."

Heather says when she was in jail, she used drugs more often than when she was on the streets. She says injecting drugs inside was easier to get away with because there was no smell, as opposed to smoking marijuana or crack.

"And as long as you're not making their job harder, the guards don't care if you do drugs in jail."

Caroline McNicoll, a communications advisor with CSC, declined to be interviewed.

To read the *Clean Switch* report, go to www.aidslaw.ca/publications.

Hepatitis B vaccine prices increase

<http://www2.hernandotoday.com/>

Tony Holt

BROOKSVILLE - The county pays the bill whenever its field and maintenance workers opt to take a hepatitis B shot.

The school district wants to pay for everyone's vaccinations, even after the price increases three-fold next year.

The school board learned during a workshop Wednesday that all district employees, including substitute teachers, would be allowed to receive their shots if they so desired.

"I know everyone works with children on a day-to-day basis, but how do you justify (this)?" asked board member Pat Fagan, who pointed out that only those workers at risk for hepatitis B exposure were eligible to get the shot.

Heather Martin, executive director for business services for the district, said it would be difficult to leave out anyone.

"We had a difficult time saying only these people can get it," she said.

Bus drivers, custodians, teachers and many other employees come in contact with sick students and often must clean up after them, Martin said.

Last year, the district budgeted \$5,000 for the shots. For the upcoming year, it will be \$15,000, or \$65 per shot.

"That's not a large sum of money," said Fagan.

In other school district news:

Sonya Jackson, the executive director of school services, outlined the athletic handbook for the

2009-10 school year.

There were few changes to the manual, but Jackson said she wanted to make sure middle school students were only eligible to play sports for three years.

In other words, if a football player repeated the sixth grade, he would only have two years of eligibility remaining while in middle school, even though he has three academic years remaining.

The handbook also specifies that all physicals be performed and submitted prior to the season and that parents are responsible for transportation following practices. School buses would not be available, Jackson said.

Hydroxycut Liver Failure Lawsuit Filed Following Recall

<http://www.aboutlawsuits.com>

A Wisconsin man has filed a product liability lawsuit alleging that the recently recalled Hydroxycut dietary supplement caused him to suffer jaundice and necrosis of the liver after just over three weeks use.

The Hydroxycut lawsuit was filed on June 8 in the U.S. District Court in the Western District of Wisconsin by 28-year-old Marques Parke and his wife, Dawn. The complaint names both Iovate Health Sciences, the manufacturer of the supplement, and Wal-Mart, which sold the Plaintiff Hydroxycut at their Sam's Club Stores.

Parke alleges that he suffered serious Hydroxycut liver damage side effects after normal, short-term use of the supplement, which was marketed as a weight-loss aid, fat burner and energy enhancer.

Iovate issued a Hydroxycut recall on May 1, 2009, after the FDA identified at least 23 reports of liver damage and one death among users of the product. Although the risk of liver injury was cited as the primary reason for the recall, the FDA also indicated that Hydroxycut was linked to reports of seizures, heart problems and a rare muscle damaging condition known as rhabdomyolysis.

After taking Hydroxycut rapid release tablets between March 5, 2008 and March 29, 2008, Parke became ill and went to the emergency room, where he was diagnosed with hepatitis and jaundice. Less than two weeks later he returned to the hospital with worsening symptoms and doctors discovered he had acute hepatitis with necrosis of the liver. He was hospitalized for 11 days.

According to the Hydroxycut lawsuit complaint, a liver specialist said the plaintiff "developed hepatotoxicity due to the dietary supplement Hydroxycut."

The case joins a handful of other lawsuits over Hydroxycut filed since the recall last month. More complaints are expected over the coming months as Hydroxycut recall lawyers are investigating potential cases throughout the United States on behalf of individuals who have suffered liver damage or other injuries that may be linked to the dietary supplement.

Hepatitis C patients tend to develop liver cancer: Taiwan researcher

<http://www.etaiwannews.com>

Central News Agency

People infected with hepatitis C have an approximately five times greater risk of developing liver cancer than those with hepatitis B, and have a 10 times risk of liver cancer if they also drink alcohol, Michael Ming-Chiao Lai, an Academia Sinica academician specializing in life sciences, said yesterday.

He made the remarks in a keynote speech at the 12th Society of Chinese Bioscientists in America International Symposium held by Academia Sinica.

Lai, who is also president of National Cheng Kung University, said there are five types of hepatitis viruses -- A, B, C, D and E. The hepatitis viruses A and E can cause acute hepatitis, while the hepatitis B, C, and D viruses can cause chronic hepatitis.

Before a hepatitis B vaccine was developed, up to 90 percent of liver cancer was caused by hepatitis B. At present, as no vaccine is yet available against hepatitis C, half of the liver cancer cases in southern Taiwan are associated with hepatitis C, according to Lai.

There is an urgent need to develop hepatitis C vaccine as medications for hepatitis C treatment have been found ineffective for most patients and could cause side effects, Lai went on.

Patients with hepatitis B have 100 times higher risk of liver cancer than people who don't have hepatitis infection. Most people are infected with hepatitis C virus when they grow up and the duration of infection of the virus is normally shorter than that of people with hepatitis B virus, so under the circumstance, hepatitis C patients should have relatively low risk of liver cancer, Lai said.

However, if people who infected with hepatitis B and hepatitis C at the same time, hepatitis C patients have five times higher risk of liver cancer than hepatitis B patients, according to Lai.

The prevalence of hepatitis C virus infection in Taiwan is 2 percent, with the highest prevalence seen in a village in southern Taiwan, where 60 percent of the residents are infected with the virus, Lai noted.

Between 50 percent and 80 percent of those infected with hepatitis C have a tendency to develop chronic hepatitis, liver cirrhosis and carcinoma of the liver, Lai went on, adding that if hepatitis C patients drink alcohol or eat fatty food, their risk of developing liver cancer will be 10 times higher than that if they do not.

Lai suggested that hepatitis C patients refrain from drinking alcohol, eating fatty foods and taking uncertified medicines. He also advised them to undergo ultrasound examinations every four months for timely treatment.

VA Blasted at Hearing on Contamination Scandal

<http://www.newsinferno.com>

At yesterday's hearing before a House Veterans Affairs (VA) committee, the VA was roundly criticized for not increasing safeguards and improving procedures at VA health facilities after shoddy colonoscopies and endoscopies were potentially linked to the spread of dangerous, deadly pathogens.

Officials with the VA offered apologies and promised to make changes, and House Veterans Affairs Committee Chairman Bob Filner (Democrat-California), said that VA Secretary Eric Shinseki would take disciplinary action, reported the AP. Regardless, the fact remains that despite a nationwide scare, media attention, and suspected links to HIV, hepatitis B, and hepatitis C, less than half of all VA facilities were operating under appropriate procedures based on surprise investigations spurred by the scandal, which broke months earlier, noted the Associated Press (AP).

According to the VA, six veterans have tested positive for HIV, the virus that causes AIDS; 34 have tested positive for hepatitis C, and 13 have tested positive for hepatitis B, said the AP.

The surprise inspections were conducted last month reported the AP yesterday, adding that less than half of the facilities were found to have had proper training and guidelines in effect for endoscopic procedures, which include colonoscopies; of serious concern, given that inspections were conducted after the mistakes were made public and it was widely reported that the VA might be responsible for the transmission of the deadly pathogens.

HIV and hepatitis B and C are spread by contact with infected body fluids, especially blood. HIV—the human immunodeficiency virus—is the virus that causes AIDS (acquired immunodeficiency syndrome); AIDS is the final stage of HIV infection. Hepatitis B and C are liver diseases that can lead to cirrhosis or cancer of the liver. Vaccines exist only for hepatitis B. HIV/AIDS and hepatitis B and C can all be fatal.

The VA has admitted to the mistakes, which, it said, were caused by human error, reported the AP, but says that it is unable to prove if the infections are directly linked to VA procedures. The VA did warn nearly 11,000 veterans who received care at three of its hospitals to undergo blood testing. Many believe dirty equipment is to blame and, last month, the AP reported that other VA patients were not warned about similar mistakes with the same equipment at more than 12 other VA centers.

The shoddy tests were conducted as far back as five years ago and put VA patients at risk because they were treated with equipment that was not appropriately sterilized, thus exposing them to the bodily fluids of other patients, noted the AP in a prior report. The VA acknowledged in its warnings letters that the invasive procedures potentially exposed them to other patients' bodily fluids. Also, the VA admitted in late March that water tubes and reservoirs it used in colonoscopies and endoscopies were rinsed—not disinfected—between procedures, which could expose subsequent patients to contamination.

VA assistant inspector general and review lead, John Daigh, said the findings “troubled me greatly We think there are systemic issues,” quoted the AP. “You certainly would think that after the initial discoveries and the directive from the VA that medical directors would make sure that all of their equipment and procedures were brought into line and yet this investigation shows that many, many did not ... There will be a public accounting of this situation,” the AP quoted.

House panel passes food safety reform bill

www.reuters.com

By Jasmin Melvin

WASHINGTON (Reuters) - A U.S. House Committee on Wednesday passed legislation that would increase government oversight of the U.S. food supply, which has been tarnished by a series of high-profile outbreaks since 2006.

The measure, cleared by a voice vote in the House Energy and Commerce committee, would be the most sweeping reform of the food safety system in close to 50 years.

Efforts to overhaul the antiquated food safety system and give the U.S. Food and Drug Administration -- which regulates 80 percent of the country's food supply -- more authority and funding have surged following outbreaks tied to lettuce, peppers, spinach, peanuts and peanut butter in recent years.

The bill broadens FDA's regulatory authority by requiring all facilities to have a food safety plan in place, giving FDA mandatory recall authority and allowing FDA greater access to company records.

"But FDA will not be the only cop on the beat," said the committee chair, Rep. Henry Waxman.

"One of the most important changes that will occur under this bill is a new focus on prevention, and a shared responsibility between FDA and food manufacturers to keep the food supply safe," he said.

The legislation would require the industry to pay \$500 per facility each year as part of a registration fee, generating an estimated \$189 million. Lawmakers said the funding would go toward increasing plant inspections and other food safety activities. A cap would be set so no single company would pay more than \$175,000.

Inspections would take place every six to 12 months at high-risk facilities and between 18 months and three years for those deemed to be at lower risk. Currently, many facilities can go several years without being inspected.

The food industry, though still concerned by some provisions of the bill, has shown support for the new legislation.

"Because consumer confidence is the foundation of everything we do, manufacturers take food safety very seriously," said Pamela Bailey, president and chief executive of the Grocery Manufacturers Association.

"We look forward to working with Congress to swiftly enact food safety legislation," she added.

Similar food safety legislation also has been introduced in the Senate, but there is no timetable when the bipartisan measure will be taken up.

Waxman said he wanted the strong vote out of committee to "send a loud message about the need to move this legislation quickly."

"I am hopeful that before too long, we can have a comprehensive food safety bill on President Obama's desk," he said.

An estimated 76 million people in the United States get sick every year with foodborne illness and 5,000 die, according to the U.S. Centers for Disease Control and Prevention.

(Reporting by Jasmin Melvin; additional reporting by Christopher Doering; Editing by Lisa Shumaker)

Healthcare costs for U.S. companies seen rising 9 percent: survey

www.reuters.com

By I-Ching Ng

NEW YORK (Reuters) - Healthcare costs for U.S. businesses are seen rising by 9 percent in 2010, according to a PricewaterhouseCoopers survey, which showed that employers will expect workers to pay more of the bill.

PwC's annual "Behind the Numbers: Medical Costs Trends for 2010," released on Thursday, showed that one of the factors driving costs was more workers using health insurance plans if they expected to be laid off.

And, it showed that as unemployment rises in the United States, leaving more people uninsured or underinsured, there will be a decline in membership in commercial plans and greater dependence on public programs, such as Medicaid.

Mike Thompson at PwC's global human resource solutions group said that as more Americans turned to public healthcare programs, healthcare providers would look to private patients to make up lost revenue.

According to PricewaterhouseCoopers, costs for healthcare products and services have risen by 9.2 percent in 2009 after rising 9.9 percent in 2008.

More than 500 employers and numerous provider-based health plans were surveyed for common themes and trends expected to influence costs, PricewaterhouseCoopers said.

The survey showed that:

- 42 percent of employers would increase workers' share of healthcare costs
- 41 percent of employers would increase medical cost sharing through changes to plans
- More than two-thirds of employers offer wellness and disease management programs, but few said they were very effective at lowering costs.

"The recession is creating a tug of war between upward and downward pressures on medical costs," said Jack Rodgers, managing director in the health policy economics group of PricewaterhouseCoopers.

"With most prices holding steady or falling, health plans will put pressure on providers to hold the line on medical costs."

PricewaterhouseCoopers said that in addition to the prospects of healthcare reform, some trends deflating spending on healthcare were increased use of generic drugs and wellness and disease management programs. It noted that patent protection on five blockbuster drugs is due to expire in 2010, with more in the next two years.

It said that 40 percent of employees of businesses surveyed were enrolled in wellness programs such as for diabetes, asthma and cancer prevention, and 15 percent were in disease management programs for things like quitting smoking or losing weight.

The survey showed that a growing number of Americans were in high deductible health plans, which are expected to lower use of health services, partly because people cannot afford medical procedures.

One-fifth of employers said they would add a high deductible health plan over the next two years, according to the survey, and an increase in high-deductible plans is expected to discourage workers from using medical care.

(Reporting by I-Ching Ng; Editing by Brian Moss, Toni Reinhold)

Risk Of Liver Cancer In Women With Hepatitis B Virus Infection Varies With Number Of Pregnancies

<http://www.sciencedaily.com>

ScienceDaily (June 17, 2009) — Risk for hepatocellular carcinoma, a primary malignancy of the liver, was statistically significantly higher among women with hepatitis B virus (HBV) infection than among women without the virus, according to a new study.

Because hepatocellular carcinoma mostly occurs in men, few women have been included in long-term studies of the association between HBV infection and this carcinoma.

In this study, Chien-Jen Chen, Sc.D., of the Genomics Research Center in Taipei, Taiwan, and colleagues used a nationwide cohort of more than 1.5 million pregnant Taiwanese women tested from 1983 to 2000 to study relationships of HBV infection and parity with hepatocellular risk.

The researchers found that risk for hepatocellular carcinoma during follow-up was statistically significantly higher among pregnant women who had chronic, active, or persistent HBV infections (and even in those who had seroclearance for hepatitis B surface antigen during follow-up) than among women who were not carriers of hepatitis B surface antigen at study entry.

The more children a woman had, the lower her risk appeared to be. This inverse relationship between parity and the risk of hepatocellular carcinoma was statistically significant. "Underlying biological mechanisms responsible for this...merit further investigation," the authors write.

This research was published in the *Journal of the National Cancer Institute* on June 17, 2009.

Tainted blood: A promise delayed

<http://www.cbc.ca>

David Gutnick

'People are dying waiting for this money'

A couple of weeks ago my phone rang. Renée Daurio was on the line, sobbing.

"I'm running out of money," she told me. She was worried about losing her home. She kept expecting a big cheque from the government, compensation for a wrong that had been dealt her.

But it never came and she couldn't figure out why. I hadn't heard from Renée since I went to visit her in St.-Nicholas, a suburb of Quebec City, almost three years ago.

For years, she and thousands of others like her had been told they were ineligible for government help because they had become infected outside the years 1986 to 1990.

That was the only period in which the government and the Red Cross acknowledged that bad blood had been distributed.

But Renée had refused being excluded and fought back. Though it wasn't easy.

Hepatitis C was destroying her liver and ravaging her body. The chemotherapy was making her even sicker and she was in constant pain and could hardly walk.

From her bed she fought on, using the internet to organize and counsel other hep C victims. But, in the meantime, her family was crumbling.

'Wall of blood'

In my 2006 documentary, "Wall of Blood", Renée and her husband Patrice were remarkably open about the terrible price of living with this disease

"It is like she doesn't exist anymore," said Patrice. "Everything you hope for, everything you wish for, everything you dream for, it is all nothing. It is like she is there but she is not really there."

Renée could feel her marriage falling apart day-by-day and blamed her disease.

"It is a blood wall between my husband and I," she told me. "I hear my husband say things that I knew all along. But sometimes I did not want to believe that he really felt like that.

"I am mad at the government, I am mad at the Red Cross. Someone has to be held accountable."

A promise made

In July 2006, Renée Daurio finally received some good news.

With much fanfare, Prime Minister Stephen Harper announced that \$1 billion was being set aside to compensate people like her.

A company named Crawford Class Action Services would handle the extremely rigorous assessments demanded by the government and the distribution of money. The cheques would go out in 2007, it was reported at the time. That was three years ago. Back to the phone call at the beginning of May.

Renée told me that over the past three years she had filled out every form and sent in every bit of information that Crawford asked her to provide.

Her file is a foot thick with doctors' letters and medical records, going back decades. The bits that are missing are covered by affidavits. She sent all the documentation to the right place and still she had not received a penny.

"The last three years have been difficult, my health is deteriorating, and I have been very depressed because I have been wondering what am I going to do?"

"My husband left. He couldn't live with a sick woman anymore. And I have my children, my mother, my grandmother in my charge and I kept phoning Crawford saying 'You have to hurry or we are all going to be on the street' and I would phone them every week crying saying, 'Please, what else do you need?'"

"'Ah, we need one more thing,' they would say. Then I would get it and that just exhausts you. And when you are sick — I am at a level six, the next level is death — so I really find it cruel and I am not the only one."

"People that are dying are dying waiting for this money."

At last

Renée asked me if I could find out why she hadn't yet received her money.

I phoned Crawford and told a manager that I was following up on Renée Daurio's file. The very next morning Renée got a call from Crawford. They had looked at her file again and decided she would be getting \$366,782.55.

According to the Crawford Class Action Service website, more than 10,000 people in this group have filed claims.

Sixty-five per cent have been approved.

Six per cent have been rejected. The rest, more than 3,000 claims of people sick with hepatitis C, are still being evaluated.

As for Renée, her battle — at least this one — is finally over. Her money will arrive in a couple of weeks.

These days when she sits with her mom there are plans to make.

"It is not like winning the lotto," she says. "Money can't bring your life back or your health back.

"I will never be able to spend all this money. But my kids will have a good life.

"They missed out having a real mother. Other mothers would take them to the movies and go on outings, on picnics and things and I couldn't move.

"I just feel that after all these years justice has been served, we are being taken care of.

"OK, we won't have money worries for the rest of our lives. But at the same time, money will not bring back the last 13 years of my life. "

At this point, it is hard to feel really happy for Renée, given all that she has been through.

Her story, though, makes you wonder why it takes so long to compensate someone like her, and why are there so many hoops to jump through when the Harper government clearly promised these people would be treated with dignity and respect.

And how many other Renées are still out there, suffering from both the disease and the injustice at the same time.

David Gutnick is a Montreal-based documentary producer with CBC Radio's Sunday Edition. Over the past 20 years he's worked for many CBC and Radio-Canada programs. Last summer he reported from the Beijing Olympics. In 2007, he was in Mauritania, Togo and Ghana reporting on slavery.

His initial report 'Wall of Blood' can be heard [here](#). (Runs 21 minutes)

His update on Renée Daurio is [here](#). (Runs 9 minutes)

June 19, 2009

Lost Molecule Is Lethal For Liver Cancer Cells In Mice

<http://www.medicalnewstoday.com>

Scientists at Johns Hopkins have discovered a potential strategy for cancer therapy by focusing on what's missing in tumors.

Noticing the conspicuous absence of single-stranded genetic snippets called microRNAs in cancer cells, a team of researchers from Johns Hopkins and Nationwide Children's Hospital delivered these tiny regulators of genes to mice with liver cancer and found that tumor cells rapidly died while healthy cells remained unaffected.

Publishing results of the study June 12 in *Cell*, the researchers say they have provided one of the first demonstrations that microRNA replacement provides an effective therapy in an animal model of human disease.

"This work suggests that microRNA replacement may be a highly effective and nontoxic

treatment strategy for some cancers or even other diseases," says Josh Mendell, M.D., Ph.D., an associate professor in the McKusick-Nathans Institute of Genetic Medicine, Johns Hopkins University School of Medicine. "We set out to learn whether tumors in a mouse model of liver cancer had reduced levels of specific microRNAs and to determine the effects of restoring normal levels of these microRNAs to these cancer cells. We were very excited to see that the tumors were, in fact, very vulnerable to microRNA replacement."

His team had considered the possibility that the replacement of a single small RNA might have little if any effect, especially in the setting of all the complex changes that drive the aberrant behavior of a cancer cell. But the tumor cells in the mouse were indeed sensitive to the restoration of the microRNA – "so much so that they died, rapidly.

"This concept of replacing microRNAs that are expressed in high levels in normal tissues but lost in diseases hasn't been explored before," Mendell says. "Our work raises the possibility of a more general therapeutic approach that is based on restoring microRNAs to diseased tissues."

The Hopkins team was building on precedent-setting research (published January 2008 in *Nature Genetics*) showing that in a Petri dish, replacing microRNAs in lymphoma cells stopped the formation of tumors when the cells were injected into mice.

The new study involves animals that develop liver tumors closely resembling the human disease. Researchers chose to target the liver because, according to Mendell, it is a large organ whose function is detoxification and therefore, is a relatively accessible target for the delivery of small molecules, compared to other tissues.

Using a "special delivery" virus that can deliver genes to tissues without causing them any disease or harm, the researchers intravenously injected a fluorescent microRNA-containing virus into one group of mice with aggressive liver cancer, and injected a control virus containing no microRNA into another group. The viral delivery system was developed by Mendell's father, Jerry Mendell, M.D., director of the Center for Gene Therapy at The Research Institute at Nationwide Children's Hospital in Columbus, and K. Reed Clark, Ph.D., associate professor and director of the Viral Vector Core Facility at Nationwide Children's Hospital.

After three weeks, six of eight mice treated with the control virus experienced aggressive disease progression with the majority of their livers replaced by cancerous tissue. In contrast, eight of 10 of animals treated with the microRNA were dramatically protected, exhibiting only small tumors or a complete absence of tumors. Liver body weight ratios were significantly lower in the treated mice, further documenting cancer suppression.

"The livers of the mice that received the microRNA virus glowed fluorescent green, showing that the microRNA ended up where it was supposed to go, and the cancer was largely suppressed," Mendell said.

Equally intriguing, he reported, "The tumor cells that received the microRNA were rapidly dying while the normal liver cells were completely spared. These findings, as well as the results of specific tests for liver damage, demonstrated that the microRNA selectively kills the cancer cells without causing any detectable toxic effects on the normal liver or other tissues."

Mendell points out that the microRNA is normally present at high levels in non-diseased tissues, and especially in the liver. Mendell speculates that this is why healthy cells are very tolerant to therapeutic delivery of even higher levels of this microRNA. However, the sensitivity of tumor cells to this microRNA suggests that loss of this molecule is a critical step as normal cells become cancer cells.

"Since we were able to demonstrate such dramatic therapeutic benefit in this extremely aggressive model of human liver cancer, we are hopeful that similar strategies will be effective for patients with this disease," says Mendell.

In addition to Joshua Mendell, authors of the paper are Jerry Mendell, K. Reed Clark, Janaiah Kota and Chrystal L. Montgomery, of The Research Institute at Nationwide Children's Hospital, Columbus, Ohio; and Raghu R. Chivukula, Kathryn A. O'Donnell, Erik A. Wentzel, Hun-Way Hwang, Tsung-Cheng Chang, Perumal Vivekanandan, and Michael Torbenson, all of Johns Hopkins University School of Medicine.

The research was supported by the National Institutes of Health, the Sol Goldman Center for Pancreatic Cancer Research and the Research Institute at Nationwide Children's Hospital.

Source: Johns Hopkins Medicine

Lamivudine with Thymosin Better Than Lamivudine Alone against Hepatitis B

www.medscape.com

By David Douglas

NEW YORK (Reuters Health) Jun 18 - Pooled data from clinical trials indicates that combination treatment with lamivudine and thymosin alpha-1 is significantly more effective than lamivudine alone in patients with e antigen-positive chronic hepatitis B (HBeAg).

"The combination of these two agents provides us a strategy of antiviral therapy for e antigen-positive chronic hepatitis B patients, which may lead to a superior biochemical, virological and immunologic response," senior investigator Dr. Hong Tang told Reuters Health.

In a May 26th paper in *Virology Journal*, Dr. Tang and colleagues at Sichuan University, Chengdu note that the prevalence of hepatitis B virus is increasing worldwide, especially in Asia, where the virus is often transmitted from mother to child at birth.

Although thymosin alpha-1 has shown promise as monotherapy, little is known about combination therapy with lamivudine, or how it compares with lamivudine monotherapy.

To investigate further, the researchers identified 8 randomized open-label trials involving 583 patients. About half of the patients received lamivudine monotherapy and the remainder received combination therapy. In 4 of the studies, patients were followed for 1 year.

At the end of treatment, ALT normalization was significantly superior in patients given combination therapy compared to those with monotherapy (80.2 versus 68.8%). For virological

response, the corresponding proportions were 84.7 and 74.9%. For HBeAg seroconversion, they were 45.1 and 15.2%.

No serious adverse events were reported in either group, and no biochemical abnormalities were reported.

The researchers conclude that the combination approach is superior, but point out that "more high-quality, well-designed, randomized controlled trials that are adequately powered are clearly needed to guide evolving standards of care for chronic hepatitis B."

Virology 2009.

Human Genome Sciences Announces Completion of Enrollment in Phase 2b Monthly-Dosing Trial of Albuferon(R)

<http://news.prnewswire.com>

- Trial conducted by Novartis evaluating safety and efficacy of Albuferon administered every four weeks in combination with ribavirin in patients with genotypes 2 and 3 hepatitis C -

ROCKVILLE, Md., June 19 /PRNewswire-FirstCall/ -- Human Genome Sciences, Inc. (Nasdaq: HGSI) today announced that Novartis has completed enrollment and initial dosing in a Phase 2b clinical trial to evaluate the safety and efficacy of Albuferon(R) (albinterferon alfa-2b) administered monthly in combination with ribavirin in treatment-naïve patients with genotypes 2 and 3 chronic hepatitis C. Albuferon is being developed by HGS and Novartis under an exclusive worldwide co-development and commercialization agreement entered into in June 2006.

"It is estimated that approximately 170 million people worldwide are infected with hepatitis C virus, including nearly four million in the United States," said Stephen Pianko, M.D., F.R.A.C.P., Ph.D., Monash University, Melbourne, Australia. "Even in developed countries, fewer than half of those who have been diagnosed with chronic hepatitis C have undertaken treatment - in part due to the side effects associated with interferon injections, which are currently required on a weekly basis. A monthly dosing schedule with Albuferon may well result in more patients choosing to be treated."

Mani Subramanian, M.D., Ph.D., Executive Director, Clinical Research - Infectious Diseases, HGS, said, "Novartis has made excellent progress in advancing the study of albinterferon alfa-2b dosed every four weeks. This dosing regimen of albinterferon alfa-2b, with a total of six injections, could offer an important treatment option if it demonstrates safety and efficacy comparable to peginterferon alfa-2a dosed once every week with a total of 24 injections."

About the Design of the Phase 2b Monthly Dosing Trial

This Phase 2b trial is a randomized, open-label, multi-center, active-controlled, dose-ranging study to evaluate the safety and efficacy of albinterferon alfa-2b administered every four weeks plus daily ribavirin in treatment-naïve patients with genotypes 2 and 3 chronic hepatitis C. 391 patients were randomized in a 4:4:4:3 ratio into four treatment groups, including three that will receive albinterferon alfa-2b administered once every four weeks (900 mcg, 1200 mcg or 1500 mcg), in addition to the active-control group, which will receive peginterferon alfa-2a at the

standard 180-mcg dose once every week. All patients in the study will receive 800-mg daily oral ribavirin. The total duration of treatment will be 24 weeks. The primary efficacy endpoint is sustained virologic response (SVR) at Week 48 (24 weeks following the end of treatment).

For more information about HGS, please visit the Company's web site at www.hgsi.com . Health professionals and patients interested in clinical trials of HGS products may inquire via e-mail to clinical_trials@hgsi.com or by calling HGS at (301) 610-5790, extension 3550.