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Hepatitis C Infections in Prisons

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Due to the epidemiology of hepatitis C (HCV), a higher percentage of inmates are HCV infected than in the general population. Depending on the prison system, 13 to 54% of inmates have hepatitis C. Recent Centers for Disease Control and Prevention (CDC) recommendations are that all incoming inmates be screened for HCV and those infected be evaluated for the presence of liver damage and the need for treatment.

This presents opportunities and challenges. Opportunities in that: 1) expensive treatment which requires close follow up is available for a group of people who quite likely would be uninsured if they were not incarcerated; 2) that those with a history of alcoholism and drug abuse are under enforced sobriety which may improve treatment outcomes; 3) and that these patients can be exposed to educational programs on how to decrease the risk of progressive liver disease and transmission of the infection. The challenges are that: 1) prisons have restricted budgets and treating HCV is expensive; 2) the ability to address side effects of interferon may be limited because of the expense of hematologic growth factors, restrictions upon the use of sedatives and security issues inherent in the correctional setting.

Most prison systems are treating at least some HCV infected inmates. To standardize management, many prison systems have developed standardized protocols. Different systems take different approaches. Texas and Pennsylvania treat without performing liver biopsies. If a patient is infected, does not have a contraindication and desires treatment, he is treated. Other systems such as Louisiana, Georgia and the Federal Bureau of Corrections require a biopsy prior to treatment and only treat those with significant fibrosis. This approach is based upon the variability of the natural history of HCV.

To understand this approach, it is important to realize that when chronic HCV infection causes death, it does so by first causing cirrhosis (i.e., severe scarring of the liver). Technically, it is not HCV which causes death, it is the cirrhosis which HCV causes. This may seem to be splitting hairs but the importance of the distinction is apparent when it is realized that as many as 80% of HCV infected patients will **not** develop cirrhosis and therefore ultimately die **with** their infection but **not** die **because** of HCV. Ideally, therefore, those HCV infected patients treated first would be those at greatest risk of developing cirrhosis.

The question, then, is, are all HCV patients equally at risk for developing cirrhosis? The simple answer is no. Concomitant alcoholism, obesity, and hepatitis B or human immunodeficiency co-infections increase the risk for cirrhosis. Even if these factors are not present, some HCV patients will develop cirrhosis and some will not. There are 3 major subgroups of HCV patients as regards risk for cirrhosis. These groups are called slow, intermediate and rapid fibrosers and are related to the amount of scarring in a patient's liver biopsy compared to how long he or she has been infected.

The amount of scar tissue is quantified or "staged" on a scale of 0-4. Stage 0 is no scar tissue, stage 1 is minimal, stage 2 is moderate, stage 3 is moderate-to-severe and stage 4 is severe scarring of the liver. Stage 4 is also called cirrhosis.

Another term used is the "fibrosis index." The fibrosis index is the stage of liver scarring divided by the number of years the patient has presumably been infected.

For example, if someone had a blood transfusion in 1968, and is diagnosed with HCV in 2003, it is presumed that they have been infected for 35 years. If they have a liver biopsy revealing stage 1 fibrosis, their Fibrosis Index is calculated as: stage 1/35 years or 0.029 stages of fibrosis per year infected. This suggests that it will take another 35 years to progress to stage 2. This person is clearly at low risk of developing cirrhosis.

Since at this rate he will not develop cirrhosis for at least 70 years, even if cured of HCV, his life is not prolonged.

In another example, assume that the patient shared needles with a known HCV infected drug user 10 years prior to his liver biopsy. If the patient has stage 2 fibrosis now, his Fibrosis Index is 0.2 (stage 2/10 years = 0.2) suggesting that he will progress 2 stages every 10 years. This patient is at high risk for developing cirrhosis in most treatment protocols; treating him would be a priority.

These concepts of the variable progression of HCV and the Fibrosis Index apply to all HCV infected patients whether they are incarcerated or not. They are more important in correctional treatment protocols, however, due to the higher percentage of the inmate population who are HCV infected. The sheer numbers infected can overwhelm the resources available to treat infected inmates in even the most generous prison system. Using the Fibrosis Index allows triage of HCV infected inmates as to their relative risk of death from cirrhosis and prioritizing treatment to those at greatest risk.

If treatment is given, it may be with peg interferon, which is given once weekly, and ribavirin. For cost reasons, some systems are still using thrice weekly interferon and ribavirin. Most systems follow the National Institutes of Health Consensus Conference recommendations that therapy can be stopped at week 12 if there has not been either a 2 log decrease in HCV RNA relative to the baseline HCV RNA or a negative HCV RNA if the initial viral load was too low to fall 2 logs. Additionally, these treatment protocols stop treatment after 24 weeks for patients infected with genotypes 2 and 3.

In addition to treatment, the incarcerated HCV infected individual is ideally given information about reducing risk of disease progression and of infecting others. This includes information about abstaining from alcohol after discharge, avoidance of blood exposure and maintenance of ideal body weight. The CDC also has recently recommended that all HCV inmates be vaccinated for hepatitis A and B if not already protected.

The future of HCV management in prisons will see increasing standardization of protocols. Liver biopsies will be required by most for scientific and financial reasons and also because the Federal Bureau of Prisons' recently published guidelines incorporates liver biopsy. Although the Federal Bureau does not dictate what states do, it is influential is establishing what the standard of care is.

There will hopefully be more research protocols made available for inmates to enroll in. Because of past abuses, it was made practically impossible to enroll inmates into drug treatment research protocols. This has been relaxed somewhat but is still extremely difficult and rarely done. Although these restrictions were originally instituted to protect inmates from exploitation, they now have the effect of denying access to cutting edge treatments. With the advent of informed consents, institutional research boards, prisoner advocacy groups and other entities, it is reasonable to assume that the past abuses could now be avoided.

In summary, HCV infection disproportionately affects inmates. Recent CDC recommendations are that incoming inmates be screened for infection and treated where indicated. This presents opportunities and challenges to the prison system. Understanding the natural history of HCV infection allows treatment to be focused upon those at highest risk of dying from HCV induced cirrhosis. The CDC also recommends education efforts directed towards minimizing disease progression and the infection of others with HCV. CDC also recommends HAV and HBV vaccination for HCV infected inmates.

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A publication of the Hepatitis C Support Project

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The Mission of the Hepatitis C Support Project is to offer support to those who are affected by the hepatitis C Virus (HCV) and HIV/HCV coinfection.

Support is provided broadly, through information and education, as well as access to support groups. The (Project) seeks to serve the HCV community as well as the general public.

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