ADVANCES IN HEPATOLOGY

Current Developments in the Treatment of Hepatitis and Hepatobiliary Disease

Section Editor: Eugene R. Schiff, MD

Hepatitis C Virus Detection and Treatment in Rural Communities

Stuart C. Gordon, MD
Director of Hepatology, Henry Ford Health System
Professor of Medicine, Wayne State University School of Medicine
Detroit, Michigan

G&H What explains the increase in hepatitis C virus infection in rural communities?

SG Over the past decade, an epidemic of hepatitis C virus (HCV) infection in the United States has occurred in at least 30 states. An increase in acute HCV infection in individuals 30 years of age or younger over the past decade has occurred in both nonurban and urban counties, but the incidence of infection has been twice as high in rural areas than urban ones. Multiple studies have supported the emergence of an HCV epidemic in the United States in young, nonurban, predominantly white individuals, who are as likely to be female as male.

In general, early marijuana use is followed by opioid addiction, which is then followed by injection drug use. This results in a rise in HCV infection in young individuals, particularly in rural communities. The highest rates of opioid prescriptions occurred in states with the highest increase in acute HCV infection. Thus, there is a correlation among opioid abuse, drug injection, and the emergence of HCV infection. Surveillance data from one study revealed an increase of over 300% in acute HCV cases in individuals 30 years of age or younger, and the most common source was injection drug use.

G&H What strategies have been proposed or implemented to reduce barriers to HCV detection in rural communities?

SG The detection of asymptomatic HCV infection is a challenge in all populations, including rural ones. Acute infection may be undetected and underestimated, particularly in younger and otherwise healthy rural individuals. One study on the use of screening for HCV infection at the time of visits to primary care providers in a rural setting found that, within 2 years, the screening of unique patients rose dramatically. The authors concluded that screening of HCV infection can be increased by primary care clinics relatively quickly.

It is important to note that HCV infection in rural communities has a bimodal age distribution. In addition to the aforementioned young individuals, Baby Boomers remain at increased risk of this disease. In 2012, the Centers for Disease Control and Prevention recommended that all individuals born between 1945 and 1965 be screened for HCV infection. Such screening is likely the best way of identifying infected members of this older cohort in rural communities, but it does not address the current epidemic in younger individuals. More recently, some groups proposed that universal HCV screening of all adults, with rapid treatment, might be the most cost-effective model to curb the emerging epidemic.

G&H Can the use of electronic medical records help improve HCV detection in rural communities?

SG Electronic medical record (EMR) prompts can be very helpful, with pop-up reminders to alert providers whenever they see a patient who was born between 1945 and 1965 that HCV screening should be performed. An example of the use of these reminders can be seen in the Cherokee Nation. In 2012, the Cherokee Nation Health Services enacted several changes with the goal of improving the testing and management of HCV infection in American Indians and Alaska natives in northeastern Oklahoma. For instance, an EMR reminder was created

for the testing of Baby Boomers, and clinicians received in-person HCV training by an infectious disease specialist. Over the next few years, there was a considerable increase in the screening of HCV infection, particularly in Baby Boomers. Over half of the individuals found to have chronic HCV infection started treatment, and nearly all finished it and attained sustained virologic response. These promising findings have implications for public health practice.

Telemedicine clinics improve access to HCV management, are associated with high patient satisfaction, and reduce the time associated with health visits.

G&H What are the most significant barriers to the treatment of HCV infection in rural communities?

SG The low number of HCV-treating physicians and midlevel providers in rural communities is the most significant barrier to what has now become fairly straightforward antiviral treatment for HCV infection. Of 35,000 HCV-infected patients in Wisconsin who were identified in one study, only 22% were living in large metropolitan areas. Five thousand people with HCV infection lived in a rural county without a qualified provider who had prescribed HCV therapy that year. Clearly, the number of qualified providers for HCV treatment in rural areas should be increased, but this will require appropriate education, training, and support for primary care providers. Although the Wisconsin study occurred before the emergence of the all-oral, direct-acting antiviral (DAA) agents currently being used for HCV treatment, these findings likely reflect the current treatment era as well.

G&H Can telemedicine help improve access to HCV treatment in rural communities?

SG Telemedicine may be highly beneficial in this setting. Patient management in rural communities can be hindered by geographical barriers (eg, distance and lack of adequate transportation) to specialists. Telemedicine clinics improve access to HCV management, are associated with high patient satisfaction, and reduce the time associated with health visits. Video teleconferencing, which is used in telemedicine, may be a cost-effective method of increasing service to rural areas. Given that DAA therapy now consists of simple and short treatment courses, the widespread use of telemedicine would greatly help increase access to treatment in rural areas.

Nevertheless, there is a potential caution to the use of this service in the management of certain HCV-infected patients. With telemedicine, it may be challenging to evaluate subtle signs of hepatic decompensation that might impact treatment. Telemedicine should likely be used with caution in select patients with cirrhosis.

G&H Have other attempts been made to increase access to treatment?

SG Arora and colleagues conducted a landmark study on the still very active and successful Extension for Community Healthcare Outcomes (ECHO) program, which can link HCV patients in rural communities to treaters. The study compared HCV treatment at an HCV clinic with HCV treatment administered by primary care providers at ECHO sites in rural communities and prisons in New Mexico. The authors concluded that the ECHO model provided effective treatment of HCV-infected patients in underserved communities.

Another program, funded by the Centers for Disease Control and Prevention that followed the ECHO model in Utah and Arizona, utilized teleconferencing and case-based learning. In total, 66 primary care providers, mainly from rural areas, were trained. Most did not have any experience treating patients with HCV infection. Nevertheless, treatment was given to almost half of the HCV-infected patients in both states combined who visited teleECHO clinics, which is more than twice the number of patients who were expected to receive treatment based upon previous research. These findings show the utility of increasing the capacity of primary care providers to treat patients with HCV infection, particularly in underserved areas.

G&H Are any mechanisms available to help reduce the cost of HCV medications in rural communities?

SG Economic roadblocks to treatment can be a barrier to any viral elimination effort. Fortunately, the cost of HCV treatment has fallen with the newer, shorter-duration DAA therapies. In addition, industry patient assistance programs have been established for patients infected with HCV, including those in rural communities, although these programs may be cumbersome. There have also been

HCV elimination projects established in various areas that have received some assistance from the government and/or drug manufacturers. For example, the University of Kentucky recently announced a project with the goal of eradicating HCV infection in a county in Kentucky with the use of a federal grant and a donation from Gilead Sciences (900 doses of 12-week HCV therapy). The project will also provide assistance for the county's needle exchange program, opioid addiction management, and case management (including housing).

In addition, state Medicaid programs have been changing their criteria for granting access to HCV treatment. Many state programs are loosening their restrictions, which frequently focused on noninvasive fibrosis markers as well as sobriety and prescriber requirements. The Center for Health Law and Policy Innovation of Harvard Law School and the National Viral Hepatitis Roundtable have released a national report, as well as report cards according to state, evaluating DAA access for Medicaid patients in the United States and noting successes and challenges involving access (available at https://stateofhepc.org).

Dr Gordon receives research support from Gilead and AbbVie.

Suggested Reading

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