ADVANCES IN HEPATOLOGY

Current Developments in the Treatment of Hepatitis and Hepatobiliary Disease

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Vaccinating Patients with Chronic Liver Disease



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G&H What is the benefit of vaccinating patients with chronic liver disease?

MJA Anyone with a chronic underlying condition has the potential to develop more severe disease if he or she develops an infection. People who have chronic underlying diseases usually have some suppression of their immune system; therefore, if they are exposed to and become infected with influenza, for example, they might have a more severe case and would be more likely to die due to complications such as pneumonia. Similarly, people with chronic liver disease who develop acute hepatitis A become sicker than otherwise healthy individuals, and chronic liver disease patients are also more likely to die due to hepatitis A. When hepatologists talk about vaccinating patients with chronic liver disease, they are typically referring to vaccination against hepatitis A virus (HAV) and/or hepatitis B virus (HBV), but other vaccines may also be indicated in this population.

G&H Which specific vaccinations should be given to patients with chronic liver disease?

MJA For starters, patients with chronic liver disease should receive any immunization that is recommended for a healthy individual of their age. For example, adults should have either a tetanus and diphtheria booster or a tetanus, diphtheria, and pertussis booster every 10 years, most people should be vaccinated against influenza on a yearly basis, and all people 60 years of age and older should receive a Zoster (shingles) vaccine. Although all individuals 65 years of age and older should receive a pneumococcal vaccine, adults with chronic liver disease should receive this vaccine regardless of their age.

In addition, HAV and HBV vaccinations are specifically recommended for individuals with chronic liver disease. As stated earlier, individuals with chronic liver disease who develop superimposed hepatitis A have a higher likelihood of developing more severe disease, and they also have a higher probability of dying. For this reason, HAV vaccination of patients with chronic liver disease is well supported.

The rationale for HBV vaccination in patients with chronic liver disease is less clear. Some experts feel that chronic liver disease patients who develop an HBV infection are more likely to have a severe infection and, possibly, to die from this infection. However, I do not think there are sufficient data to support this conclusion. Rather, the data indicate that patients will have more severe disease if they have *chronic* HBV infection on top of another chronic liver disease—for example, chronic HBV and chronic hepatitis C virus co-infection. Likewise, patients with chronic HBV infection and alcoholic liver disease will have more severe disease than patients with only one of these conditions. Thus, I believe the increased risk comes from having 2 types of *chronic* liver disease, not becoming infected with HBV.

While HBV vaccination could certainly be beneficial, as it would prevent HBV infection and thus prevent any chronic infection that might subsequently develop, the likelihood of HBV infection developing in patients without risk factors is very low. Given that public health resources are limited and physicians must choose which patients to vaccinate, focusing on HBV vaccination in patients with chronic liver disease who are otherwise not at risk for hepatitis B might not be the best use of resources.

G&H Do patients with chronic liver disease respond well to vaccination?

MJA Most studies addressing this question have evaluated responses to HAV and/or HBV vaccines. The key finding in these studies is that patients with milder chronic liver disease respond to these vaccines at a rate similar to that of healthy controls, whereas patients with advanced chronic liver disease (ie, cirrhosis or liver failure) have lower response rates. These results emphasize the importance of vaccinating patients with chronic liver disease as early in the course of their disease as possible.

There are also multiple other factors that can affect a patient's response to vaccination, including age, weight, smoking status, and sex.

G&H How can clinicians improve response rates in patients with chronic liver disease?

MJA I only have data regarding HBV vaccination, but that is the vaccine about which clinicians are usually most concerned. If a patient does not respond to the first primary series of HBV vaccine, the recommendation is to revaccinate the patient with an additional series. Approximately half of the original nonresponders will respond to the second series, even among individuals who have underlying diseases that compromise their immune systems.

G&H What are some of the obstacles to vaccination among patients with chronic liver disease?

MJA Unfortunately, vaccination rates for adults are low, even among patients who are regularly seen in a clinical setting. Patients with chronic liver disease are almost always under the care of a gastroenterologist or hepatologist, but these patients remain undervaccinated. Similarly, HIV-positive patients receive ongoing medical care for their condition, yet they often fail to receive all their recommended vaccinations.

One reason for these low rates may be that physicians are unaware of the need for vaccination, or physicians may have only a short period of time during which to see the patient and treat his or her condition. If a practice is not set up to deliver preventive services in a routine manner, then the decision to vaccinate patients would need to be made on a case-by-case basis, which is extremely difficult to do in today's healthcare settings. I think that improving vaccination rates among patients with chronic liver disease (as well as other at-risk groups) will depend on developing delivery systems that can implement these preventive measures in a manner that does not negatively impact the clinician's time with the patient.

Another obstacle to vaccination is that adults do not like to receive injections. Many studies show that if physicians tell patients that they should get vaccinated against a particular disease, patients accept this advice. However, patients are often reluctant to follow through on it, although they do not always admit that fear of injections is their reason for noncompliance.

Finally, some individuals do not receive vaccinations because they lack access to care and do not have the opportunity to receive their recommended vaccinations.

G&H What further research is needed in this area?

MJA From a public health point of view, research is most needed in the area of health services delivery. Specifically, researchers need to address the question of how to improve the delivery of preventive services to adults without individualizing these services for each patient. In today's environment, the individual patient visit is short, so clinicians cannot realistically include preventive services as a separate part of each patient's visit. Instead, research is needed to develop systems that can facilitate delivery of preventive services in a broad range of settings. Preventive services, such as vaccination or screening, need to be provided in such a way that these services can be recommended and administered to appropriate individuals without negatively impacting the time that patients spend with clinicians. Undervaccination is a problem in the general adult population, not just among patients with chronic liver disease, and I think this problem needs to be solved through changes in the healthcare delivery system, not necessarily by increasing education or knowledge.

G&H What are key points for clinicians to keep in mind when vaccinating patients with chronic liver disease?

MJA Clinicians should aim to prevent as many comorbidities as possible in every adult patient, whether the patient has chronic liver disease or not. One way to prevent comorbidities is to vaccinate patients against certain infections, including influenza, pneumococcal disease,

HAV, and/or HBV. In many cases of chronic liver disease, vaccination can prevent patients from developing higher rates of illness or more severe disease, which can often lead to better overall outcomes.

Suggested Reading

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