



## *Hepatitis A*

*Lori Fantry, MD, MPH*

**H**epatitis A, once called “short incubation” or “infectious” hepatitis, is a viral infection that involves the liver. Infection with hepatitis A leads to symptoms that are very similar to other types of hepatitis. Unlike hepatitis B and C, hepatitis A is rarely fatal and does not lead to chronic liver disease. Nonetheless, hepatitis A is a significant cause of illness and suffering in many parts of the world, including the USA.

### **Prevalence and Distribution**

Hepatitis A is common throughout the world. In the developing countries, the incidence of hepatitis A is very high due to overcrowding and poor sanitation. The highest rates in the USA are in Arizona, Alaska, Oregon, New Mexico, and Utah. Approximately 33% of persons living in the USA have been infected with hepatitis A.

### **Mode of Transmission**

Hepatitis A virus is spread primarily by the fecal-oral route, either through person-to-person contact or ingestion of contaminated food or water. Transmission is often facilitated by poor personal hygiene, lack of sanitation, and oral-anal sexual contact. Common sources of contaminated food include shellfish, frozen raspberries and strawberries, and milk.

Hepatitis A virus can also be directly transmitted through transfusions of blood or blood products, although this is much less common due to the brief period of time that hepatitis A virus

remains in the blood of an infected person. The increased risk for hepatitis A infection among drug users is primarily due to poor hygiene rather than transmission through blood.

Children born to mothers with past or present hepatitis A infection are not at risk for infection in utero or at birth unless the mother is jaundiced at the time of delivery. Breastfeeding is not a mode of transmission. Urine and saliva do not transmit hepatitis A virus.

About half the time, the person transmitting hepatitis A virus cannot be identified. Often the source identified is a young child with no or minimal symptoms. Stools of infected persons are infectious from approximately 2 weeks before until about 1 week after the appearance of yellow skin (jaundice). The most infectious period is before jaundice appears.

### **Symptoms and Diagnosis**

The clinical course of hepatitis A varies from person to person. Some people, especially infants

---

*BHCHP nurse practitioner Jennifer Burroughs and family advocate Jocelyn Beverly perform a well-child examination at the Milner Hotel. Photo by David Comb*

less than two years old, never develop symptoms after infection. Older people have a higher frequency of symptoms and tend to get a more severe illness. Symptoms usually develop within 28 days after exposure. This period of incubation may be as short as 15 days or as long as 50 days. Initial symptoms usually include fever, fatigue, poor appetite, nausea, and vomiting. Diarrhea occurs more commonly in children (see Table 1). Cough, sore throat, coryza (runny nose and eyes), and arthralgias (joint aches) have been reported in some outbreaks. As with other types of hepatitis, hepatitis A can alter taste and smell.

After several days to a week, the initial symptoms usually begin to diminish (see Figure 1). At this point, the infected person may develop yellow skin and eyes, dark urine, light stools, itching, and abdominal pain. Weight loss may continue throughout the illness. In most cases, symptoms of hepatitis A resolve within 1 to 2 months.

Once infected with hepatitis A virus, a person is immune from further infection with hepatitis A for life. There is still a risk, however, from other types of hepatitis.

Hepatitis A cannot be differentiated from other types of hepatitis by symptoms alone. A blood test, the immunoglobulin M antibody to hepatitis A (IgM anti-HAV), is obtained to diagnose acute hepatitis A. This test becomes positive 5-10 days before the onset of symptoms and remains positive for up to 6 months after infection. IgG anti-HAV also becomes positive early in the course of infection, but usually remains positive for life and thus cannot be used to differentiate present from past infection. However, IgG anti-HAV is useful in determining whether or not a person is a candidate for hepatitis A vaccination.

## Treatment and Complications

No specific treatment is available for hepatitis A. Certain measures can alleviate the symptoms. Bed rest may provide some comfort. If the person is having frequent vomiting, caregivers should watch for signs of dehydration.

Infected people should avoid alcohol and drugs, legal and illegal, that are metabolized or broken down by the liver. For this reason, aspirin is a safe alternative to acetaminophen (Tylenol™) for fever and muscle aches except in children less than 18 years old who are at risk for a liver-brain disorder called Reye syndrome.

Although most people with hepatitis A recover completely within 1 to 2 months, 10-15% have a prolonged or relapsing disease. In addition, about 100 persons per year in the United States die from acute liver failure due to hepatitis A. This most commonly occurs in persons over 50 years old and those with chronic liver disease.

## Prevention and Control

### Basic Precautionary Measures

All states require that each case of hepatitis A be reported to the local or state health department. The early symptoms of hepatitis A are similar to many other diseases and are hard to recognize until jaundice appears. As noted above, jaundice may never arise in some cases.

Thorough hand washing is an essential part of preventing the spread of any infection, including hepatitis A. Hand washing is especially important before preparing or serving food and after diapering and using the bathroom. Caregivers should always wear gloves when handling stools and should wash hands after removing the gloves.

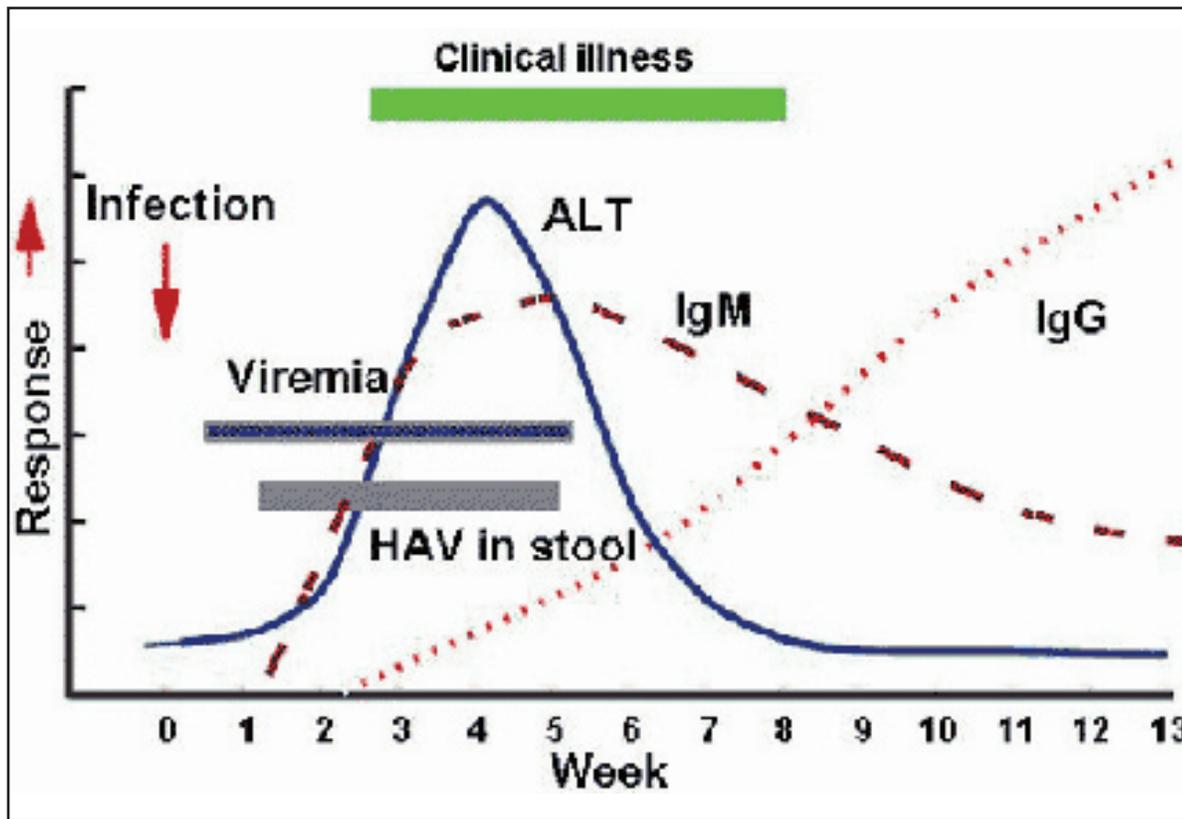
Persons with hepatitis A do not require any

Symptoms of Hepatitis A in Children and Adults. Modified from Lemon, SM. Type A viral hepatitis. New developments in an old disease. *New England Journal of Medicine*, 1985.

**Table 1: Symptoms of Hepatitis A in Children and Adults**

Symptom	Children 2-5 years old (day-care center outbreak)	Adults 18-26 years old (U.S. Army soldiers)
Nausea/vomiting	11(65%)	5(26%)
Jaundice/yellow eyes	11(65%)	16(88%)
Diarrhea	10(58%)	3(18%)
Dark urine	10(58%)	12(68%)
Light-colored stools	10(58%)	10(58%)
Abdominal pain	8(48%)	7(37%)
Malaise/fatigue	8(48%)	11(63%)
Fever/chills	7(41%)	6(32%)
Decreased appetite	7(41%)	8(42%)

Figure 1:



The Clinical Signs and Serology of Hepatitis A Infection. Viral shedding of hepatitis A virus is present in the stool about two weeks after initial exposure. The timing of clinical symptoms and various serological markers are shown here. Courtesy of the CDC

special type of isolation unless they are incontinent of stool. Infected people who regularly handle food should avoid tasks that require direct contact with food until 1 week after the appearance of jaundice.

**Post-Exposure Immunization**

An immunization containing antibodies, called immunoglobulin or IG, against the hepatitis A virus can limit the spread of the virus. When given within 2 weeks of exposure, the immunization will lessen the severity of illness and totally prevent clinical signs and symptoms in some cases.

*Those who should receive IG include:*

- household contacts of the infected person (see Special Considerations for Homeless Populations);
- sexual contacts of the infected person;
- persons who have shared illegal drugs with the infected person;
- staff or day care centers with at least one infected child;
- other food handlers at the same establishment of a food handler known to be infected.

**Table 2: States with ≥ 20 Cases per 100,000 Population of Hepatitis A**

State	Rate (per 100,000)
Arizona	48
Alaska	45
Oregon	40
New Mexico	40
Utah	33
Washington	30
Oklahoma	24
South Dakota	24
Idaho	21
Nevada	21
California	20

Prevalence of Hepatitis A. These states have ≥ 20 cases of hepatitis A per 100,000 population. Modified from Prevention of hepatitis A through active or passive immunization. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999;48 (RR-12):1-37.

The recommended dose of IG for postexposure prophylaxis is 0.02 mL/kg. Side effects from IG other than pain and tenderness at the injection site are extremely rare. IG has never been reported to transmit other viruses, including human immunodeficiency virus (HIV), hepatitis B, or hepatitis C.

### **Pre-Exposure Immunization**

Persons who are at increased risk for developing infection or have increased risk of severe disease should receive hepatitis A vaccination. These include:

- sexually active men who have sex with men;
- drug users (injection and non-injection);
- persons with chronic liver disease;
- children living in states, counties, or communities where the average annual hepatitis A rate during 1987-1997 was greater than or equal to 20 cases per 100,000 population (see Table 2);
- persons who have clotting factor disorders;
- persons traveling to or working in countries with high or intermediate rates of hepatitis A;
- persons who work with HAV-infected primates or with HAV in a research laboratory setting.

The two vaccines approved for active immunization against hepatitis A virus (HAVRIX™ and VAQT™) are both inactivated vaccines. Both vaccines are given in two doses at least 6 months apart. The doses differ depending on the age of the patient and which product is used. Present data suggest that immunity may be lifelong and repeat vaccination after the initial series is not recommended. About 50% of persons receiving the hepatitis A vaccine experience soreness at the injection site, but other side effects are extremely rare.

### **Special Considerations for Homeless Populations**

Homeless people are often at high risk for hepatitis A due to overcrowded and unsanitary living conditions. In addition, homeless persons may use illegal drugs or have chronic liver disease. Homeless persons with these risk factors should receive active immunization against hepatitis A.

Hepatitis A can spread rapidly through a shelter if certain precautions are not followed. The local or state public health department should be informed of any cases of hepatitis A as soon as possible. They can evaluate the situation and determine who should

be immunized with IG. Whenever a child still in diapers develops hepatitis A in a family shelter, all children, parents, and staff should receive IG.

### **Summary**

Hepatitis A is a viral infection of the liver that may cause a short-term sickness but generally does not cause prolonged liver disease. Both children and adults are affected. Adults tend to have a more severe course of illness. In fact, many children are infected but never show signs of hepatitis. A person can only become infected once in his or her lifetime. An infected person may develop cold- or flu-like symptoms from 15-50 days after exposure to the virus. The typical signs of hepatitis appear a few days later: yellowing of the skin and eyes, dark urine, itching, and abdominal pain. The illness usually lasts 4 to 8 weeks.

Hepatitis A usually spreads by direct contact with an infected person and less commonly through fecal contamination of food or water. Those at highest risk include travelers or persons from developing countries, children (and secondarily staff and parents) in day-care centers, men who have sex with men, injection drug users, hemophiliacs who have received pooled blood products, and persons in institutions.

Persons at risk for hepatitis A can receive active immunization with a formalin-inactivated vaccine to prevent infection. In addition, persons who have recently been exposed to hepatitis A and have not been vaccinated can receive IG. This will provide passive immunization that can lessen or completely abort the symptoms and manifestations of the disease.

No specific treatment exists for hepatitis A, but certain measures can ameliorate the symptoms. Bed rest, high calorie foods, and aspirin can help with the symptoms of muscle aches, abdominal pain, and fevers. Remember that aspirin should be avoided in children under the age of 18 because of the risk of Reye syndrome. Prescription medications can relieve itching. ■■

## **References**

- Centers for Disease Control and Prevention. Prevention of hepatitis A through active or passive immunization. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999;48(RR-12): 1-37.
- Dienstag JL, Isselbacher KJ. Acute viral hepatitis. In: Braunwald E, Fauci AS, Kasper DL, et al., eds. *Harrison's Principles of Internal Medicine*. New York: McGraw-Hill; 2001:1721-1737.
- Hoofnagle JH, Lindsay KL. Acute viral hepatitis. In: Goldman L, Bennett JC, eds. *Cecil Textbook of Medicine*. Philadelphia: WB Saunders Company; 2000:783-790.
- Lemon S. Type A viral hepatitis. New developments in an old disease. *New England Journal of Medicine* 1985;313(17): 1059-1067.



---

*Several street folks seek refuge each night in this South Boston junkyard for abandoned or demolished trucks and buses. The city's skyline is in the background.*  
*Photo by James O'Connell MD*