



Bulletin No. 30
November 6, 1991
Serologic Tests for Viral Hepatitis, Part 1

Recently, two persons in a residential institution in Alaska were exposed to a person who was ill with laboratory-confirmed hepatitis A. Several weeks later, and approximately 10 days after one of them became ill with nausea and diarrhea, blood was drawn from each. Testing was conducted for hepatitis A antibody (total anti-HAV; i.e., IgM and IgG anti-HAV *combined*), hepatitis B surface antigen (HBsAg), hepatitis B core antibody (anti-HBc), and hepatitis B surface antibody (anti-HBs). When results returned (Table 1), health care providers at the institution diagnosed each patient (incorrectly) as having acute hepatitis A. Since one of the patients was a food handler, staff made the decision to begin drawing blood from contacts of these two persons for hepatitis testing.

When the Section of Epidemiology was informed, approximately 30 contacts had already had blood drawn. We recommended that blood drawing be stopped and that patients #1 and #2 immediately be tested for anti-HAV IgM. Both were anti-HAV IgM negative, anti-HAV IgG positive--indicating that neither had acute hepatitis A and that both were immune to hepatitis A due to past infection. The institution informed contacts who already had blood drawn that they had not been exposed to hepatitis A.

Marker	Result	
	Patient #1	Patient #2
Total anti-HAV	positive	positive
HBsAg	negative	negative
anti-HBc	positive	negative
anti-HBs	positive	negative

The Section of Epidemiology routinely receives reports and conducts follow-up of patients diagnosed with acute viral hepatitis. Physicians and other health care providers who infrequently obtain serologic tests for viral hepatitis or who are not familiar with interpretation of test results may misunderstand results and misdiagnose their patients. The above example illustrates the unnecessary activities which were initiated when two patients were incorrectly diagnosed as having acute hepatitis A. The following guidelines have been prepared to assist clinicians in interpreting serologic tests for viral hepatitis. In addition, a simplified diagnostic approach to acute hepatitis is presented in Table 2 in the Nov. 7, 1991 Epidemiology Bulletin Part 2.

1. If acute viral hepatitis is suspected, liver function tests should **precede** hepatitis serology. An increase in AST and ALT (previously designated SGOT and SGPT) is detectable during the prodromal phase of acute viral hepatitis and precedes the rise in bilirubin levels. Peak levels vary from 400 to 4000 IU or more and are usually reached at the time the patient is jaundiced and diminish during the recovery phase of acute hepatitis.
2. **Hepatitis A:** IgM and IgG antibodies are detectable in serum by the onset of jaundice. The presence of IgM antibody indicates acute infection. After 3-12 months IgM antibody disappears. The presence of IgG antibody alone indicates past infection and lifelong immunity to hepatitis A virus.
3. **Hepatitis B:** See "Serologic Tests for Viral Hepatitis, Part 2"; Nov. 7, 1991 [Epidemiology Bulletin](#).
4. **Hepatitis C:** This is a parenterally transmitted type of non-A, non-B hepatitis (NANB) (there is also an enterically transmitted type of NANB hepatitis). Approximately 50-70% of persons with acute hepatitis C (diagnosed by below criteria) will develop chronic hepatitis. Chronic hepatitis C is associated with persistent liver enzyme abnormalities and may progress to cirrhosis and liver failure.

Diagnosis of *acute* hepatitis C is based on the following criteria:

- . elevated liver function tests
- . negative tests for acute hepatitis A and hepatitis B
- . lack of evidence of nonviral causes of hepatitis
- . positive test for anti-HCV antibody (5-6 months later)

The test for antibody to hepatitis C (anti-HCV) is positive in the majority of patients with chronic hepatitis C, but is **not a reliable indicator of acute infection** since 5-6 months may elapse between exposure to the virus or the onset of illness and detection of anti-HCV.

Serologic testing for hepatitis A and B is available free-of-charge from the State Public Health Laboratory, Fairbanks (474-7017). **All cases of acute hepatitis should be reported to the Section of Epidemiology.**

(Contributed by Mindy Schloss, RN, MPH, and Michael Beller, MD, MPH, Section of Epidemiology.)