Hepatitis A

The word ‘hepatitis’ is a general term derived from hepat = liver and itis = inflammation. Five of the unrelated viruses that cause hepatitis are confusingly named with letters, A through G.

Background

The virus causing hepatitis A was probably responsible for historical jaundice outbreaks affecting armies and crowded institutions. In the early 20th century its transmission was recognized as fecal-oral, distinct from jaundice with serum transmission. The causative virus for “infectious hepatitis” was isolated in 1973.

Hepatitis A virus has fecal-oral spread from acute human cases either directly or through contaminated food and water. Communicability before onset of symptoms, a low infectious dose, and environmental survival contribute to the ease of transmission. Although hepatitis A has a viremic phase, bloodborne transmission is negligible. Universal pediatric vaccination is the best way to control hepatitis A. Vaccination is recommended for persons who are homeless, have multiple sexual partners, or use street drugs.

The incubation period ranges 15 to 50 days, typically around 30 days. Infection may be asymptomatic in younger children, rarely so in an adult, but is still communicable. The asymptomatic pediatric cases may result in four-fold underreporting. Care is supportive.

When symptomatic, hepatitis A virus infection causes an acute onset of fever, loss of appetite, diarrhea, abdominal pain, and usually jaundice (disrupted bilirubin excretion) causing yellow eyes and skin, dark urine, and pale stool. Only rarely are infections severe or fatal, generally when the person has liver disease (another viral hepatitis or cirrhosis) or other chronic disease.
**Public Health Response**

Hepatitis A cases are diagnosed and reported based on consistent symptoms with either detection of IgM or epidemiologic link to a laboratory-confirmed case. Testing for hepatitis A is commercially available. During outbreaks, the Centers for Disease Control and Prevention conduct genomic testing. Public health interventions focus on preventing additional cases: finding the exposure source, setting work or school exclusions, and investigating contacts of the case patient (close contacts, food handling, and work in sensitive settings).

Exposed persons should receive prompt prophylaxis within two weeks of the last exposure, either vaccine or immune globulin depend on age and health status. Recommendations for immune globulin dosing were updated in 2017 due to decreased hepatitis A infections and therefore decreased HAV antibody potency in the plasma donors.

<table>
<thead>
<tr>
<th>TABLE. Indications and updated dosage recommendations for GamaSTAN S/D human immune globulin for preexposure and postexposure prophylaxis against hepatitis A infection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indication</strong></td>
</tr>
<tr>
<td>Preexposure prophylaxis</td>
</tr>
<tr>
<td>Up to 1 month of travel</td>
</tr>
<tr>
<td>Up to 2 months of travel</td>
</tr>
<tr>
<td>2 months of travel or longer</td>
</tr>
<tr>
<td>Postexposure prophylaxis</td>
</tr>
</tbody>
</table>

https://www.cdc.gov/mmwr/volumes/66/wr/pdfs/mm6636a5.pdf

**Epidemiology**

Globally, the risk of hepatitis A reflects the safety of the food and water supplies and the availability of hepatitis A vaccination. Many counties in Central America, South America, Africa, the Middle East, and Asia have elevated rates. U.S. residents travelling to or adopting children from affected areas should have documented immunity to hepatitis A.

In the United States, there were high levels of hepatitis A cases until 20th century sanitation followed by vaccine licensure in 1995. Daycare outbreaks, common in 1980s, are almost eliminated with childhood vaccination. From almost 14,000 cases reported nationally in 2000, during 2010-2015 there were around 2,000 cases reported per year. Washington had a peak of 3,273 cases in 1989. Outbreaks are now rare, reflecting early adoption of hepatitis A vaccine for children and a state food code requiring glove use. Recently there have been about 30 cases yearly in our state with an occasional related death. Many cases are travel-associated, particularly involving family visits to India or Mexico.

Imported products caused recent large foodborne hepatitis A outbreaks in the United States including green onions (Mexico 2003, 565 cases), pomegranate seeds (Turkey 2013, 165 cases), frozen strawberries (Egypt 2016, 143 cases), and frozen scallops (Philippines 2016, 292 cases).
**U.S. Outbreaks in 2017**

Multiple states had hepatitis A outbreak during 2017 including parts of California, Colorado, Kentucky, Utah and Michigan. In the first four states, the outbreaks reflected poor sanitation associated with homeless street life or with illicit drug use. The Michigan outbreak was more generalized, including sex trade and multiple sexual partners. Almost 1,500 cases were reported among four locations of the outbreaks. For comparison, recent national and Washington hepatitis A rates are under 1/100,000. There were high case fatality rates, which may reflect patient co-morbidities such as cirrhosis or other viral hepatitis.

<table>
<thead>
<tr>
<th>Location</th>
<th>Cases</th>
<th>Rate/100,000</th>
<th>Hospitalized</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego</td>
<td>577</td>
<td>43</td>
<td>396</td>
<td>20</td>
</tr>
<tr>
<td>Santa Cruz County</td>
<td>76</td>
<td>29</td>
<td>33</td>
<td>1</td>
</tr>
<tr>
<td>Utah</td>
<td>161</td>
<td>2</td>
<td>83</td>
<td>0</td>
</tr>
<tr>
<td>Michigan</td>
<td>715</td>
<td>7</td>
<td>582</td>
<td>24</td>
</tr>
</tbody>
</table>

Various control measures for hepatitis A were taken by the involved public health agencies:

- Hepatitis A vaccination expanded to homeless and those providing them services (shelters, sanitation, public safety, healthcare)
- Vaccination outreach including teams vaccinating on site (sidewalks) and mass clinics
- Hepatitis B vaccination for persons who inject drugs to reduce severe disease
- Bleach spray for fecally-contaminated streets and sidewalks
- Sanitary kits, toilets and hand wash stations
- Hospitalizations extended in duration to prevent transmission

The outbreaks have caused large demands on public health agencies and staff. Prompt identification of cases, their removal from sensitive settings, prophylaxis of exposed contacts, and universal vaccination of children and those at risk for infection can reduce the impact of hepatitis A on communities and individuals.

**Resources**

San Diego: [https://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs/community_epidemiology/dc/Hepatitis_A.html](https://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs/community_epidemiology/dc/Hepatitis_A.html)

Santa Cruz: [http://www.santacruzhealth.org/HSAHome/HSADivisions/PublicHealth/CommunicableDiseaseControl/HepatitisA.aspx](http://www.santacruzhealth.org/HSAHome/HSADivisions/PublicHealth/CommunicableDiseaseControl/HepatitisA.aspx)


Michigan: [http://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2976_82305_82310-447907--,00.html](http://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2976_82305_82310-447907--,00.html)