

## HEPATITIS A PROPHYLAXIS

### I. DEFINITION OF EXPOSURE TO HEPATITIS A:

#### A. Post-Exposure Prophylaxis (PEP) for Hepatitis A

##### 1. A case of hepatitis A is defined as:

- a. Laboratory confirmed case: a person with a positive hepatitis A IgM (anti-HAV-IgM+ or HAV-Ab IgM+) and an acute illness with discrete onset of symptoms, including one or more of the clinical, hallmark symptoms of hepatitis A (dark urine, jaundice, or clay colored stool) or elevated serum aminotransferase levels and/or aspartate aminotransferase (AST) (> 100 IU/L), **OR**
- b. Epi-Link Case: a person with one or more of the clinical, hallmark symptoms of hepatitis A (dark urine, jaundice, or clay colored stool) who is a contact to a laboratory confirmed case within the appropriate period of exposure, 15–50 days prior to the onset of symptoms.

##### 2. In situations where laboratory testing cannot be obtained by the patient's primary healthcare provider or an alternative clinic (in a timely fashion or due to costs) for specific persons suspected of having hepatitis A who participate in activities that threaten the public's health, the public health nurse should immediately notify the Acute Disease Service (ADS) Epidemiologist-on-Call and discuss laboratory testing of the client through OSDH. Testing a person suspected of having acute hepatitis A should only be completed by approval after consultation with the ADS Epi-on-Call. The ADS contract for laboratory testing will then be used.

- a. Criteria for testing: An individual who:
  - 1) has one or more classic (hallmark) symptoms of hepatitis A
    - a) jaundice
    - b) light colored (light gray) stools
    - c) dark, "tea" colored urine
  - 2) is employed as a food handler, or
  - 3) is a household contact to a food handler, or
  - 4) is associated with a day care center (client attends, is an employee, or has a household member who attends).
- b. Once criteria are met, obtain blood for testing at the designated contract laboratory.
  - 1) Prepare specimen for mailing, complete requisition, and process.
  - 2) Fax a copy of the completed requisition form to ADS or notify of request as soon as possible. ADS must track all test requests for verification of public health necessity and for payment of services.
  - 3) Call laboratory for test results next morning.
  - 4) Test results will be entered into the Public Health Investigation and Disease Detection of Oklahoma (PHIDDO) System by ADS for inclusion in the client's record.
- c. Testing of individuals who do not strictly meet these criteria must be approved by the ADS Epi-on-call.

3. A contact to a case of hepatitis A is a person who is at risk for having contact with the fecal material of the case during the infectious period. Thus, generally contacts are persons who have had intimate or prolonged, direct contact to a case of hepatitis A. For purposes of hepatitis A investigations, a case's infectious period is two weeks prior to onset of symptoms through one week after onset of jaundice or through two weeks after symptom onset if jaundice is not present. A contact should receive PEP if the last exposure to the case occurred within 14 days. Since household members have continuous exposure to the case and it is not possible to determine when transmission of HAV might occur, use the last possible date of exposure during the case's infectious period (one week after onset of jaundice or two weeks after symptom onset if jaundice is not present) plus two weeks. Examples of contacts recommended to receive PEP are persons who:
  - a. have household-like contact to the case if that contact
    - 1) lives in the same household as a case
    - 2) frequently visits or plays in the house of a case or vice-versa;
  - b. have had sexual contact;
  - c. have shared illegal drugs with a case;
  - d. have eaten high-risk food prepared by a case who was determined to have poor personal hygiene. High-risk foods are those that are not cooked before eating or are handled after cooking and not reheated thoroughly before eating (examples: lettuce and tomato on sandwiches, coleslaw hand mixed, fresh fruits which are juicy and were cut up with direct hand contact by the case);
  - e. had other contact with a case that would promote fecal-oral transmission from case to contact (changing diapers, cleaning fecal soiled articles, etc.);
  - f. children in a child care setting who are in same classroom with a case of hepatitis A; or
  - g. all other restaurant food handlers who may have been exposed to a food handler within the establishment who has hepatitis A.
4. The definition of a case, a contact, and recommendations for who should receive PEP may be expanded in certain situations (e.g., a community-wide outbreak of hepatitis A, one or more cases in a child care setting, a public announcement for a foodhandler with hepatitis A). Refer to the hepatitis A chapter of the Epi Manual for specific instructions.
5. Contacts that have received at least one dose of the hepatitis A vaccination at least 1 month before exposure to HAV, the full hepatitis A vaccination series, or that have had hepatitis A previously are not considered at risk and should not receive PEP.

**B. Pre-Exposure Prophylaxis for Hepatitis A**

1. Hepatitis A vaccine and/or IG is recommended for all susceptible persons traveling to or working in countries with intermediate or high endemicity of HAV infection (refer to the Centers for Disease Control and Prevention Traveler's Health web site at <http://www.cdc.gov/travel/>).

2. Vaccination of children  $\geq 1$  year of age, adolescents and adults with age appropriate dose is **preferred** for persons who plan to travel repeatedly or reside for long periods in high-risk areas.
  - a. For healthy persons 40 years of age or younger, one dose of single-antigen hepatitis A vaccine administered at any time before departure can provide adequate protection.
  - b. For unvaccinated adults  $>40$  years of age, immunocompromised persons, and persons with chronic liver disease or other chronic medical conditions planning to depart to a high-risk area in  $\leq 2$  weeks should receive the initial dose of vaccine and also simultaneously can be administered IG at a separate anatomic injection site.

II. MANAGEMENT PLAN:

- A. Perform Hepatitis A IgM testing for clients who meet criteria for OSDH funded testing.
- B. Hepatitis A Vaccine
  1. Hepatitis A vaccine is an inactivated, whole virus vaccine with pediatric and adult formulations licensed for persons  $\geq 12$  months of age. ACIP recommends a single dose of hepatitis A vaccine as the preferred form of PEP in healthy individuals age  $\geq 12$  months – 40 years of age. Persons receiving vaccine as PEP should receive the second dose according to the licensed schedule to complete the series.
  2. PEP is **NOT** recommended for persons who have received one dose of hepatitis A vaccine at least 1 month before the exposure to hepatitis A virus.
  3. Guidelines for vaccine and dosage per age are as follows:

AGE	Vaccine Name	Injection Site	Dose/ Volume
Children $<1$ year	<b>Not approved for use</b>		
Children 1–18 years	Havrix <sup>®</sup>	IM Deltoid	0.5 mL
	VAQTA <sup>®</sup>	IM Deltoid	0.5 mL
Adults $>18$ years	Havrix <sup>®</sup>	IM Deltoid	1.0 mL
	VAQTA <sup>®</sup>	IM Deltoid	1.0 mL
Adults $\geq 18$ years	Twinrix <sup>®</sup>	IM Deltoid	1.0 mL

4. Contraindications:
  - a. Hepatitis A vaccine should not be administered to persons with a history of severe allergic reaction to a vaccine component.

- b. Hepatitis A vaccine should be deferred if a person has moderate or severe acute illness until the person's condition has improved.

C. Immune globulin (IG)

1. IG is a sterile solution of antibodies prepared from human plasma.
  - a. IG provides protection against hepatitis A through passive transfer of antibody.
  - b. Intramuscular IG, which is commercially available in the United States, has not been associated with the transmission of hepatitis B virus (HBV), HIV, HCV or other viral infections.
2. For persons <12 months old or >40 years, IG is recommended; vaccine can be used for persons >40 years if IG cannot be obtained.
3. For immunocompromised persons, persons who have had chronic liver disease diagnosed, and for persons for whom vaccine is contraindicated, IG should be used.
4. The recommended dosage for IG is 0.02 ml/kg or 0.01 ml/lb., given IM.
5. The deltoid muscle is an appropriate site for giving 1 cc or less of IG; however, the development of the deltoid and the age of client must be taken into consideration before the clinical judgment of administering IG into the deltoid is made.
6. Persons administered IG for whom hepatitis A vaccine is also recommended should receive a dose of vaccine simultaneously with IG administered at a separate injection site.
7. Administer according to age and preferred IG administration site guidelines as follows:

AGE	SITE	DOSAGE*
Children less than 18 months	Vastus Lateralis	0 - 49 lbs = ½ cc
Children 18 months and older	Deltoid Vastus lateralis	1 - 49 lbs = ½ cc 50 - 99 lbs = 1 cc
Adolescents – Adults	Deltoid Vastus lateralis Ventrogluteal Posterior gluteal	100 - 149 lbs = 1 ½ cc 150 - 199 lbs = 2 cc 200 - 249 lbs = 2 ½cc 250 - 299 lbs = 3 cc 300 - 349 lbs = 3 ½ cc 350 – 399 lbs = 4 cc ≥ 400 **

\* Exact weight need not be known. Client or responsible party (parent or guardian) may give approximate weight of client for the administration of IG. It is acceptable to use approximate weight with the above dosage schedule.

\*\* Calculate dosage using above recommended dosage per kilogram or pound. Confer with DNM or designee before administration.

8.     Contraindications:
  - a.     Immune globulin should not be given to individuals with isolated immunoglobulin A (IgA) deficiency.
  - b.     Immune globulin should not be given to individuals with severe thrombocytopenia or any coagulation disorder that would contraindicate intramuscular injections.
  - c.     Immune globulin is contraindicated in individuals who are known to have had an allergic response to thimerosal. Check product label for presence of thimerosal.
  - d.     The Public Health Nurse must ensure that a competent adult other than a client family member is present before any medication is administered. This individual should be CPR certified, if at all possible.
  
9.     Client Education:
  - a.     Side Effects
    - 1)     Other than local pain from injection, side effects from immune globulin are exceedingly rare.
    - 2)     Anaphylaxis has rarely been reported after intramuscular administration.
  
  - b.     Immunization Schedule
    - 1)     Immune globulin given for hepatitis A prophylaxis may interfere with live, attenuated vaccinations, such as measles, mumps, and rubella (MMR), and varicella.
      - a)     MMR vaccine should not be given for three months after receiving immune globulin.
      - b)     If MMR was given in the two weeks prior to receiving IG, the vaccine should be repeated three months later.
      - c)     IG does not interfere with oral poliovirus vaccine or inactivated vaccines, such as yellow fever, influenza, DTaP, rabies, hepatitis B, etc.
    - 2)     Varicella vaccination should be deferred for five months after receiving IG. Following administration of varicella vaccine, IG should not be administered for three weeks unless its use outweighs the benefit of vaccination.
  
  - c.     Effectiveness
    - 1)     If given within 14 days of exposure, immune globulin is approximately >85% effective in preventing hepatitis A.
    - 2)     Persons who develop hepatitis A after receiving immune globulin may have a modified course of illness.
    - 3)     Educate client about the disease, signs and symptoms, transmission, and prevention and control (just in case IG was not effective).

- D. Only persons defined as contacts under Sections I.A.3 and 4 who have had exposure to a confirmed or epi-link case being followed by the local health department may receive IG or vaccine.
- E. EXCEPTION: IG or vaccine may be provided by the local health department prior to actual confirmation of exposure to hepatitis A when, in the opinion of the medical director, the state epidemiologist, or a communicable disease epidemiologist:
1. The probability exists that the exposure is to type A (i.e., there are no definite risk factors for other types of viral hepatitis).
  2. The exposed person presents a definite risk of transmission to the general public (i.e., persons who work at or attend day care, food handler, etc.) should he or she become infected, and will be followed for symptoms of hepatitis A until six weeks have passed since their exposure.
  3. Confirmation of the type of hepatitis exposure cannot be determined within 14 days of exposure.

F. Travelers:

1. Refer to private physician or call the Immunization Service for a current list of International Travel Clinics in Oklahoma, which includes Tulsa City-County Health Department and Oklahoma City-County Health Department clinics.
2. Healthy persons between ages 12 months and 40 years are recommended to receive one dose of single-antigen hepatitis A vaccine at any time prior to departure.
3. Persons travelling to an area where hepatitis A risk is high, and who receive the vaccine < 4 weeks prior to travel may not have developed complete protection. For optimal protection, these persons also may be administered IG (0.02 ml/kg), but at a different anatomic injection site.
4. Travelers who elect not to receive the vaccine, or are aged < 12 months, or are allergic to a vaccine component should receive a single dose of IG (0.02 ml/kg) if travel is less than two months. If such travelers expect a travel period >3 months, the dose 0.06 ml/kg should be administered (approximate dosages - see table below). This dose must be repeated if the travel period is > 5 months.
5. For persons who require repeated IG prophylaxis, referral for screening for total anti-HAV before travel is useful to define susceptibility and eliminate unnecessary doses of IG for those who are immune.
6. **Recommended doses of immune globulin (IG) for hepatitis A pre-exposure prophylaxis**

Duration of coverage	Dose (mL/kg)*
Short-term (1–2 mos)	0.02
Long-term (3–5 mos)	0.06†

\* IG should be administered by intramuscular injection into either the deltoid or gluteal muscle. For children aged <24 months, IG can be administered in the anterolateral thigh muscle.

† Repeat every 5 months if continued exposure to hepatitis A virus occurs.

G. Consultation/Referral:

1. Clients with history of prior systemic allergic reactions following the administration of immune globulin should be referred to a physician for administration.
2. Contacts who develop symptoms of hepatitis should be referred to a physician.
3. Any pregnant client who has laboratory confirmed or suspected hepatitis A should be referred to a physician.
4. IG is safe to give to pregnant and breastfeeding women; however, consult with a physician or if applicable, maternity clinic medical consultant. The safety of hepatitis A vaccination during pregnancy has not been determined. However, because it is an inactivated vaccine, the theoretical risk to the fetus is low. The risk associated with vaccination should be weighed against the risk for HAV infection. Consult with a physician or if applicable, maternity clinic medical consultant.

H. Education and Follow-up:

Instruct contacts who are employed as food handlers, who are associated with a day care center, or who are determined to pose a high-risk of transmission to the public to immediately report symptoms of hepatitis A until six weeks have passed since their exposure. Refer to the Epi Manual for further information.

REFERENCES:

- Health Information for International Travel, 2014, U.S. Department of Health and Human Services, Public Health Service.
- Center for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Atkinson W, Wolfe S, Hamborsky J, eds. 12<sup>th</sup> ed. Washington DC: Public Health Foundation, 2011. <http://www.cdc.gov/vaccines/pubs/pinkbook/index.html>
- CDC. Prevention of Hepatitis A through Active or Passive Immunizations. MMWR, May 19, 2006, Vol. 55,RR-7. <http://www.cdc.gov/mmwr/PDF/rr/rr5507.pdf>
- CDC. Update: Prevention of Hepatitis A After Exposure to Hepatitis A Virus and in International Travelers. Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR, October 19, 2007, Vol. 56(41):1080-84. <http://www.cdc.gov/mmwr/PDF/wk/mm5641.pdf>

