HEPATITIS D

Also known as: Viral hepatitis D, Hepatitis delta virus, Delta agent hepatitis, Delta associated hepatitis

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Responsibilities:
Hospital: Report by IDSS, facsimile, mail, or phone
Lab: Report by IDSS, facsimile, mail, or phone
Physician: Report by facsimile, mail, or phone
Local Public Health Agency (LPHA): Follow-up required

Iowa Department of Public Health
Disease Reporting Hotline: (800) 362-2736
Secure Fax: (515) 281-5698

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Agent

Hepatitis delta virus (HDV) is a small virus-like particle made up of a hepatitis B surface antigen and the delta antigen and a single strand of DNA. It cannot infect a cell itself; it can only replicate if there is a co-infection with hepatitis B virus (HBV). Infection with HDV can occur at the same time as HBV or can occur at a later date in a person with chronic hepatitis B.

B. Clinical Description

Symptoms: Signs and symptoms resemble hepatitis B and may be severe. These symptoms are fatigue, nausea, vomiting, fever, stomach pain, tea-colored urine, and jaundice. The infection may be self-limiting or it may progress to chronic infection. Children may have a very severe course of disease. Infection with HDV in a person with chronic hepatitis B may be misdiagnosed as a worsening of hepatitis B. One quarter to one half of fulminant cases of hepatitis B (those that are rapidly fatal) are associated with concurrent infection with HDV.

Onset: is usually sudden.

Complications: of hepatitis D are the same as that of hepatitis B. Infection can lead to rapid death from liver cell necrosis or the infection can become chronic, leaving the person a carrier of disease and may lead to cirrhosis of the liver or liver cancer.

C. Reservoirs

Humans are the only reservoir.

D. Modes of Transmission

Hepatitis D is usually spread though exposure to blood or serous fluids, often by contaminated needles or syringes, or by use of contaminated plasma derivatives such as clotting factor. The virus can also be spread sexually.

E. Incubation period

Approximately 2 to 8 weeks.

F. Period of Communicability or Infectious Period

Blood is potentially contagious during all phases of active HDV infection. Peak infectivity is probably just before onset of symptoms.

G. Epidemiology

The disease is present worldwide but the prevalence of HDV infection varies widely. It is estimated that 10 million people are jointly infected with HDV and HBV. It is found in populations where hepatitis B is endemic.

H. Bioterrorism Potential

None.

2) DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To identify sources and sites of transmission and to prevent spread from those sources.
- To ensure identification of infected pregnant women and to prevent perinatal transmission to their babies.

B. Laboratory and Healthcare Provider Reporting Requirements

Iowa Administrative Code 641-1.3(139) stipulates that the laboratory and the healthcare provider must report. The preferred reporting method is through the Iowa Disease Surveillance System (IDSS). The reporting phone number for IDPH Center for Acute Disease Epidemiology (CADE) is (800) 362-2736; fax number (515) 281-5698, mailing address:

IDPH, CADE
Lucas State Office Building, 5th Floor
321 E. 12th St.
Des Moines, IA 50319-0075

Postage-paid disease reporting forms are available free of charge from the IDPH clearinghouse. Call (319) 398-5133 or visit the website: healthclrhouse.drugfreeinfo.org/cart.php?target=category&category_id=295 to request a supply.

Laboratory Testing Services Available

The University of Iowa State Hygienic Laboratory (SHL) can refer serum specimens for Hepatitis D virus testing. Information about date of collection, date of onset of symptoms, travel history, vaccination and disease history are essential for test interpretation. For additional information on submitting samples or testing, contact the SHL at (319) 335-4500 or visit: www.shl.uiowa.edu/

C. Local Public Health Agency Follow-up Responsibilities

Case Investigation

1. If case has not previously been diagnosed with hepatitis B, see the description of hepatitis B for full information on case investigation.
2. Laboratory confirmation of hepatitis D infection requires anti-HepD to be positive as well as HBsAg or IgM anti-HBc positive. In most persons with HBV-HDV co-infection, both IgM antibody to HDV (anti-HDV) and IgG anti-HDV are detectable during the course of infection. However, in about 15% of patients the only evidence of HDV infection may be the detection of either IgM anti-HDV alone during the early acute period of illness or IgG anti-HDV alone during convalescence. Tests for IgM anti-HDV, HDAg and HDV RNA by PCR are only available in research laboratories
3. For all suspected or confirmed cases of hepatitis D, complete the Hepatitis B/C case investigation in IDSS.
4. If several attempts have been made to obtain case information, but have been unsuccessful (*e.g.,* the case or healthcare provider does not return calls or respond to a letter, or the case refuses to divulge information or is too ill to be interviewed), please fill out the form in IDSS with

as much information as has been gathered. Select the appropriate reason under the Event tab in the Event Exception field.

5. If access to IDSS is not possible, please FAX the form to CADE at (515) 281-5698.
6. Institution of disease control measures is an integral part of case investigation. It is the responsibility of the local public health agency to understand, and, if necessary, institute the control guidelines listed below. These are more fully outlined in the hepatitis B section.

3) CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

Same as hepatitis B: No exclusion of cases is required except for exclusion from organ and blood donation and counseling to prevent transmission.

B. Protection of Contacts of a Case

See recommendations for hepatitis B. Preventing infection with hepatitis B will prevent hepatitis D for those not infected with hepatitis B. Administration of hepatitis B immune globulin (HBIG) and hepatitis B vaccine will not protect against hepatitis D in those already infected with hepatitis B.

C. Managing Special Situations

1. Percutaneous or permucosal exposure to Hepatitis B and D virus

Follow guidelines for postexposure prophylaxis for hepatitis B in hepatitis B section.

2. Reported Incidence Is Higher than Usual/Outbreak Suspected

If the number of reported cases in your local area is higher than usual, or an outbreak is suspected, investigate clustered cases to determine source of infection. If evidence indicates a common source, appropriate control measures should be instituted. Consult with the epidemiologist on call at CADE at (800) 362-2736 for assistance in investigation and control measures.

D. Preventive Measures

The best way to prevent HDV infection is to prevent infection with hepatitis B. Immunization with hepatitis B vaccine will also prevent infection with hepatitis D if a person is not already infected with hepatitis B. The only way to prevent HDV infection for those already infected with hepatitis B is to avoid contact with blood and serous fluid, to never share needles for drug use, ear piercing, tattooing or other purpose, and to use condoms when having sex. The use of hepatitis B immune globulin, (HBIG), immune globulin (IG) or hepatitis B vaccine will not protect people against hepatitis D in those who are infected with chronic hepatitis B infection.

See hepatitis B section for information on immunization against hepatitis B.

4) ADDITIONAL INFORMATION

The Council of State and Territorial Epidemiologists (CSTE) surveillance case definitions for Hepatitis D can be found at: www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis.htm#top

CSTE case definitions should not affect the investigation or reporting of a case that fulfills the criteria in this chapter. (CSTE case definitions are used by the state health department and the CDC to maintain uniform standards for national reporting.)

References

American Academy of Pediatrics. *2006 Red Book: Report of the Committee on Infectious Diseases, 27th Edition*. Illinois, American Academy of Pediatrics, 2006.
CDC website. Hepatitis D available at: www.cdc.gov/hepatitis/hdv/index.htm
Heymann, D.L., ed. *Control of Communicable Diseases Manual, 20th Edition.* Washington, DC, American Public Health Association, 2015.

Additional Resources

www.cdc.gov/hepatitis/index.htm