

Project: Ghana Emergency Medicine Collaborative

Document Title: Hepatitis

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Hepatitis A Virus (HAV)

- Hepatitis A is an acute infectious disease of the liver
- Usually spread fecal-oral route; transmitted person-to-person by ingestion of contaminated food or water or through direct contact with an infectious person
- Closely associated with poor sanitation and a lack of personal hygiene habits, such as hand-washing
- An estimated 1.4 million cases of hepatitis A occur annually (WHO)

Transmission of HAV

People almost always get hepatitis A from fecal contamination:

- Food handlers who have the disease did not wash their hands after having a BM
- Drinking water or eat raw shellfish (clams, oysters) that came from unclean water areas
- You were in a place with poor sanitary conditions (dirty) where the hepatitis A virus is common
- There other ways you may get hepatitis A, but these are much less common:
 - Day care workers who do not wash their hands after changing a diaper
 - Men who have sex with men
 - The blood of an infected person getting into your blood
 - Users of both injectable and non-injectable street drugs can get it by using dirty or used needles.

HAV Symptoms

Range from mild to severe including

- Fever
- Malaise
- Loss of appetite
- Diarrhea
- Nausea
- Abdominal discomfort
- Dark-colored urine, and light-colored BM's
- Jaundice (a yellowing of the skin and whites of the eyes)

You are most contagious in the two weeks before getting jaundiced and the first week after getting jaundice

Treatment of HAV

- There is no specific treatment for hepatitis A
- Recovery from symptoms following infection may be slow and take several weeks or months
- Therapy is aimed at maintaining comfort and adequate nutritional balance, including replacement of fluids that are lost from vomiting and diarrhea

Prevention

- Improved sanitation and Hepatitis A immunization are the most effective ways to combat the disease
- Adequate supplies of safe-drinking water and proper disposal of sewage within communities, combined with personal hygiene practices, such as regular hand-washing, reduce the spread of HAV
- Several hepatitis A vaccines are available internationally. All are similar in terms of how well they protect people from the virus and their side-effects. No vaccine is licensed for children younger than one year of age.

Patient Education

- When you have an appetite again, eat healthy foods from all of the 5 food groups: fruits, vegetables, breads, dairy products, meat and fish
- Try to avoid alcohol since it makes your liver work harder
- Drink 6 to 8 glasses of liquid each day. Limit the amount of caffeine you drink such as coffee, tea, and soda
- Your friends and family may need to get a shot to keep them from getting hepatitis A
- Do not share dishes and eating utensils. Wash dishes and utensils in boiling water or a dishwasher. You may want to use disposable (throw-away) dishes
- Do not make food or meals for other people
- Wash your hands well before eating and after using the toilet
- Wash clothing and bedding in the hottest water setting
- Clean toilets with a product that kills germs

Patient Education

CONTACT A CAREGIVER IF:

- You cannot drink liquids or keep food down
- Your skin is itchy, swollen, or has a rash. Your medicine may be causing these symptoms. This may mean you are allergic
- You are bruising easily

SEEK CARE IMMEDIATELY IF:

- You feel confused or unusually sleepy. The sleepiness may switch with feeling irritable or jittery
- You have bad abdominal pain
- You have BMs that are red or black and sticky
- Your vomit is red or looks like coffee grounds
- You are too dizzy to stand up

Hepatitis B Virus (HBV)

- Hepatitis B is irritation and swelling (inflammation) of the liver due to infection with the hepatitis B virus (HBV)
- The infection is called acute when a person first becomes infected with HBV
- The infection becomes chronic (long-term) when a person has symptoms, such as liver swelling, for six months or longer
- Acute HBV infections are more common in adults. Infants and young children have a higher risk for chronic HBV

Transmission HBV

- Contact with infected blood or body fluids, such as saliva and semen
- Once HBV is in your blood, it travels to your liver and injures your liver cells
- HBV can enter your body through a cut or scratch in your skin or through your mucous membranes
- Mucous membranes include your gums and the lining of your rectum or a woman's vagina
- HBV can live on objects and surfaces for seven or more days, with or without visible blood
- HBV can also spread from a mother to her unborn child.

Symptoms of HBV

- It can take from 1 to 6 months before symptoms occur
- Some people will have no signs and symptoms and may not know they have been infected. When signs and symptoms do occur, they may last from a few days to months:
 - Dark-colored urine or light-colored or gray bowel movements (BMs).
 - Fatigue (feeling more tired than usual) and weakness.
 - Fever (high body temperature).
 - Loss of appetite for food, nausea (upset stomach), and vomiting (throwing up).
 - Jaundice (yellowing of the skin or the whites of the eyes). You may also get skin rashes.
 - Joint pain and body aches.
 - Pain in the right upper side of the abdomen (stomach)

Complications of HBV

- **Liver cirrhosis:** scarring of the liver caused by infection and inflammation. Increased risk for cirrhosis if you drink alcohol or smoke. Increased risk if you have human immunodeficiency virus (HIV), hepatitis C; or hepatitis D
- **Liver failure:** Liver failure occurs when the liver can no longer function as it should. Risk for liver failure increases if you have cirrhosis.
- **Liver cancer:** Chronic HBV may lead to liver cancer. The risk for liver cancer increases if you are male and if you have other family members with liver cancer. Your risk also increases if you have liver cirrhosis or if you are also infected with hepatitis C.
- **Kidney problems:** HBV can lead to inflammation and problems with your kidney function. Your kidneys are organs that remove waste from your body as urine

Diagnosis

- **Blood tests:** to give information about how the patients body is working
- **Abdominal ultrasound:** pictures of the liver may be done to check for signs of HBV and to look for other liver problems
- **Liver biopsy:** a small sample of the liver is removed and sent to a lab to check for swelling, scarring, and other damage. A liver biopsy may help caregivers learn if you need treatment for HBV

HBV prevention

Getting vaccinated against HBV is the best way to decrease your risk and prevent the disease

- The HBV vaccine is given in three doses over a period of months
- Some people may not respond to the vaccine as well as others
- After being vaccinated, some may need a blood test to check his/her response



Treatment of HBV

- The goal of treatment is to prevent the disease from getting worse and leading to more serious liver problems
- Treatment may help improve the function of your liver and decrease your symptoms of liver disease
- HBV may last a short time and go away on its own without treatment
- HBV may become chronic, leading to liver damage and disease

Treatment of HBV

Medicines:

- **Antiviral medicines:** Antiviral medicine may be given to help stop the virus from spreading in your body
- **Immune globulin:** Hepatitis B immune globulin (HBIG) is medicine given if you have been exposed to HBV. Immune globulin helps your body fight the HBV infection. HBIG is also given to newborn babies who were exposed to HBV while in the womb.
- **Liver transplant:** Some patients may need a liver transplant if they have severe liver disease or liver failure.
- **Hepatitis A vaccination:** If you are diagnosed with HBV, your caregiver may vaccinate you against hepatitis A.

HBV prevention

The following people should be vaccinated against HBV:

- Any person not already vaccinated against HBV
- Healthcare workers and workers in other care facilities
- Newborn babies born to women with HBV - All newborn babies should be vaccinated shortly after birth and have additional doses as directed by a caregiver
- People living in care facilities and inmates of correctional facilities

HBV prevention

- People who have decreased liver function or who are infected with hepatitis C, hepatitis D, or HIV
- People who inject illegal drugs
- People with kidney failure receiving hemodialysis treatments. More or higher doses of the vaccine may be needed for people with kidney failure
- People with more than one sex partner or men having sex with other men
- People who have had a sexually transmitted disease (STD) before should also be vaccinated

HBV Prevention

Those who are HBV+:

- Cover any open cuts or scratches. If blood from a wound gets on a surface, clean the surface with bleach right away
- Dispose of any items with blood or body fluids on them properly
- Do not donate blood, sperm, or organs to others
- Do not share items that may have infected blood or body fluids on them (includes toothbrushes, razors, or personal injection items, such as needles)
- Tell household and sexual contacts that you have HBV. All close contacts should be vaccinated. If contacts have not had the vaccination, they may need to start treatment to help prevent infection.
- Also tell medical or dental caregivers you have HBV when getting any kind of treatment
- When having sex, always use a condom, even if you have acute HBV and your infection goes away, you can still spread the virus for up to six months

Patient education

Call your caregiver if:

- The palms of your hands are red
- You have a fever
- You have new or increased swelling in your legs, ankles, or feet
- Your muscles are getting smaller and weaker
- You have questions about your condition, medicines, or care

Patient education

Seek help immediately or call 911 if:

- You have a sudden, severe headache and head pressure
- You have new or increased bruising or red or purple dots on your skin. You may also have bleeding that does not stop easily
- Your abdomen is swollen
- You have severe nausea or cannot stop vomiting
- You see blood in your urine or bowel movements, or you vomit blood
- You have new or increased yellowing of your skin or the whites of your eyes
- You have severe (very bad) pain in your upper abdomen

Patient education

- **Limit or avoid alcohol:** Alcohol can increase your liver damage and can damage your brain and heart
- **Quit smoking:** Smoking harms your lungs, blood, and heart. You are more likely to have a heart attack, lung disease, and cancer if you smoke. You will help yourself and those around you by not smoking
- **Pregnant and have viral hepatitis B?**
 - Avoid close or intimate contact with others as directed by your caregiver
 - Avoid injury to your upper abdomen
 - Make sure you eat a healthy diet
 - You may need to limit your daily activities and rest more
 - After your child is born, you should be able to breastfeed your infant



Patient education

- **Take your medicine as directed:** Call your primary healthcare provider if you think your medicine is not working as expected
- **Follow-up visit:** tell the patient to ask the caregiver when to return for a follow-up visit. He/she may need to have blood tests to check the function of your liver. Keep all appointments. Write down any questions he/she may have

Hepatitis C Virus (HCV)

- Hepatitis C is also called non-A or non-B hepatitis
- Inflammation of the liver due to infection caused by a virus
- Similar to Hep A & Hep B, Hepatitis C virus (HCV) attacks and damages your liver
- CDC estimates worldwide there are 3-4 million people infected with HCV each year

Symptoms HCV

The most common symptom of hepatitis C is fatigue (feeling more tired than usual) The patient may present with one or more of the following:

- Dark orange-colored urine or clay-colored stool
- Fever
- Itchy skin
- Jaundice (yellowing of the skin or the whites of the eyes)
- Joint pain, body aches, or weakness
- Loss of appetite, nausea or vomiting
- Pain in the right side of the abdomen

Complications HVC

Hepatitis C may lead to the following problems:

- Liver cirrhosis
- Liver cancer
- Liver failure
- Kidney disease

Transmission

Hepatitis C virus is carried in the blood and other body fluids, such as semen or vaginal fluids. Hepatitis C virus may spread by any of the following:

- Childbirth: passed from a pregnant woman to her baby during delivery
- Needle stick injury
- Long-term dialysis
- Blood transfusion or an organ transplant before July 1992
- Sharing items that may have infected blood on them, such as razors, toothbrushes, or nail clippers
- Sharing infected needles to use illegal or street drugs
- Using dirty needles or instruments for tattooing, body piercing, or other procedures
- **Sex:** Some people may not know they have hepatitis C and could pass the virus to their sex partner.

Diagnosis

- **Enzyme immunoassay test:** EIA checks for hepatitis C antibodies (proteins made by the immune system that attack viruses or bacteria)
- **Genotyping:** blood test that tests the genotype of the hepatitis C virus that you have
- **Hepatitis C profile serological test:** checks the activity and number of hepatitis C viruses present in your blood.
- **Liver biopsy:** small piece of the liver is removed and sent to a lab for tests
- **Liver function tests:** to check the enzymes and other substances made in the liver

Treatment

- **Anti-viral medicines:** These medicines work by keeping the virus from spreading. This may prevent or decrease more swelling and damage to the liver.
- **Surgery:** A liver transplant may be done if your liver stops working. Your diseased liver is removed and replaced with a healthy and donated liver. You may also have a part of your liver removed.

Prevention

There is no available vaccine to prevent hepatitis C. Following are ways to prevent the spread of hepatitis C:

- Caregivers should wear gloves, masks, gowns, or safety goggles when handling blood products and instruments
- Consider the risks of getting hepatitis C before having tattoos or body piercing
- If patients use illegal or street drugs, **never** reuse or share needles or syringes
- Do **not** share toothbrushes, razors, or other personal care items
- Mothers infected with hepatitis C should stop breastfeeding if their nipples are cracked or bleeding
- Use latex condoms when having sex

Nursing management

- Universal Precautions – Gloves are worn when there is to be contact with blood and body fluid
- Goggles/masks are worn when there is a danger of splashing or aerosol of blood-contaminated secretions
- Water repellent gown, if there is a danger of splashing
- Always hand washing before and after contact with blood and body fluid
- Specimens are treated as biohazard. Linen & used material are treated as infectious.
- Establish if the patient is in the acute phase, a carrier, or not

Patient assessment

ACTIVITY/REST

May report:

- Fatigue, weakness, general malaise

CIRCULATION

May exhibit:

- Bradycardia (severe hyperbilirubinemia)
- Jaundiced sclera, skin, mucous membranes

ELIMINATION

May report:

- Dark urine
- Diarrhea/constipation; clay-colored stools
- Current/recent hemodialysis

FOOD/FLUID

May report:

- Loss of appetite (anorexia), weight loss or gain (edema) Nausea/vomiting

May exhibit:

- Ascites

Patient assessment

NEUROSENSORY

May exhibit:

- Irritability, drowsiness, lethargy, asterixi

PAIN/DISCOMFORT

May report:

- Abdominal cramping, right upper quadrant (RUQ) tenderness
- Myalgias, arthralgias; headache
- Itching (pruritus)

May exhibit:

- Muscle guarding, restlessness

RESPIRATION

May report:

- Distaste for/aversion to cigarettes (smokers)
- Recent flulike URI

SEXUALITY

May report:

- Lifestyle/behaviors increasing risk of exposure (e.g., sexual promiscuity, sexually active homosexual/bisexual male)

Patient assessment

SAFETY

May report:

- Transfusion of blood/blood products in the past

May exhibit:

- Fever
- Urticaria, maculopapular lesions, irregular patches of erythema
- Spider angiomas, palmar erythema, gynecomastia in men (sometimes present in alcoholic hepatitis)
- Splenomegaly, posterior cervical node enlargement

TEACHING/LEARNING

May report:

- History of known/possible exposure to virus, bacteria, or toxins (contaminated food, water, needles, surgical equipment or blood); recent surgical procedure with halothane anesthesia; exposure to toxic chemicals; prescription drug use (e.g., sulfonamides, phenothiazines, isoniazid)
- Travel to/immigration from China, Africa, Southeast Asia, Middle East (hepatitis B [HB] is endemic in these areas)
- Street injection drug or alcohol use
- Concurrent diabetes, HF, malignancy, or renal disease

Diagnostic studies for hepatitis

Liver enzymes:

- Abnormal (4–10 times normal values)

AST/ALT:

- Initially elevated. May rise 1–2 wk before jaundice is apparent, then decline.
- Alkaline phosphatase

Hepatitis A, B, C, D, E panels (antibody/antigen tests):

- Specify type and stage of disease and determine possible carriers.

CBC:

- Red blood cells (RBCs) decreased because of shortened life of RBCs (liver enzyme alterations) or hemorrhage.

WBC count and differential:

- Leukopenia, leukocytosis, monocytosis, atypical lymphocytes, and plasma cells may be present.

Diagnostic studies

Serum albumin:

- Decreased.

Blood glucose:

- Transient hyperglycemia/hypoglycemia (altered liver function).\

Prothrombin time:

- May be prolonged (liver dysfunction).

Serum bilirubin:

- Above 2.5 mg/100 mL. (If above 200 mg/100 mL, poor prognosis is probable because of increased cellular
- necrosis.)

Liver biopsy:

- Usually not needed, but should be considered if diagnosis is uncertain, or if clinical course is atypical or unduly
- prolonged

Urinalysis:

- Elevated bilirubin levels; protein/hematuria may occur

Hepatitis Nursing management

NURSING PRIORITIES

- 1.Reduce demands on liver while promoting physical well-being.
- 2.Prevent complications.
- 3.Enhance self-concept, acceptance of situation.
- 4.Provide information about disease process, prognosis, and treatment needs.

DISCHARGE GOALS

- 1.Meeting basic self-care needs.
- 2.Complications prevented/minimized.
- 3.Dealing with reality of current situation.
- 4.Disease process, prognosis, and therapeutic regimen understood.
- 5.Plan in place to meet needs after discharge

Self care at home

The goals of self-care are to relieve symptoms and prevent worsening of the disease

- Drink plenty of fluids to prevent dehydration
- Avoid medicines and substances that can cause harm to the liver, such as acetaminophen (Tylenol)
- Avoid drinking alcohol until your health care provider OKs it. If your infection becomes chronic, you should avoid alcohol for the rest of your life
- Avoid using drugs, even legal drugs, without consulting your doctor. Hepatitis can change the way drugs affect you. Do not start any new medication without first talking to your health care provider
- Try to eat enough for adequate nutrition. Try to maintain a balanced diet. Many people with hepatitis have the greatest urge to eat early in the day
- Take it easy. Your activity level should match your energy level

Patient education

CONTACT A CAREGIVER IF:

- You have a fever.
- You are vomiting (throwing up) and cannot keep food or liquids down
- You have a rash, an itch, or swelling of your abdomen (stomach) or legs
- You are bruising easily
- You have bad abdominal pain
- You have questions or concerns about your disease, medicine, or care

SEEK CARE IMMEDIATELY IF:

- You are too dizzy to stand up
- You feel confused or are very sleepy
- Your stools are red, black, or clay-colored
- Your symptoms are getting worse
- Your vomit (throw up) has blood in it or looks like coffee grounds

Case study

45 year old female, who presented to the ER