LESSON ASSIGNMENT

LESSON 7
Hepatitis.

LESSON ASSIGNMENT
Paragraphs 7-1 through 7-11.

LESSON OBJECTIVES
After completing this lesson, you should be able to:

7-1. Identify the common types of hepatitis.

7-2. Identify the causes of different types of hepatitis.

7-3. Identify the modes of transmission for various types of hepatitis.

7-4. Identify the signs/symptoms for specific types of hepatitis.

7-5. Identify measures for preventing hepatitis.

7-6. Identify the characteristics of variants of acute viral hepatitis.

7-7. Determine the difference between chronic persistent hepatitis and chronic active hepatitis.

SUGGESTION
After completing the assignment, complete the exercises of this lesson. These exercises will help you to achieve the lesson objectives.
LESSON 7

HEPATITIS

7-1. INTRODUCTION

Hepatitis is an inflammation of the liver. From a public health point of view, the concern is that the disease is easily transmitted, and the death rate can be high. From a socioeconomic point of view, hepatitis can cause soldiers to lose time from work or training. Causes of hepatitis include viruses, drugs, and chemicals including alcohol. A primary concern of the Medical NCO should be prevention of hepatitis transmission and loss of personnel due to the disease. Your goal must be to educate soldiers about how to prevent getting the disease, but you must also know how to treat hepatitis.

7-2. COMMON TYPES OF HEPATITIS

There are four common types of hepatitis: type A hepatitis, type B hepatitis, non-A, non-B (NANB) hepatitis, and chronic hepatitis. Type A hepatitis was formerly called infectious hepatitis and short-incubation hepatitis. In the past, type B hepatitis was known as serum hepatitis, post-transfusion hepatitis, or long-incubation hepatitis. Non-A, non-B (NANB) hepatitis cannot be traced to either type A hepatitis or type B hepatitis. Little is known about the virus which causes NANB. Biologically and clinically, this virus appears similar to type B hepatitis. Chronic hepatitis is made up of a number of liver disorders that seem to be acute hepatitis on one hand but also cirrhosis on the other hand. See paragraph 7-10 for more information on chronic hepatitis.

7-3. CAUSE OF HEPATITIS

At least three distinct viruses are responsible for hepatitis: hepatitis A virus, hepatitis B virus, and hepatitis NANB. Actually, NANB hepatitis may be caused by more than one virus.

NOTE: Liver infections caused by other specific viruses, viruses such as the cytomegalovirus and the yellow fever virus, will not be discussed here.

7-4. METHODS OF TRANSMISSION OF HEPATITIS

a. Type A Hepatitis. The agent which causes this type of hepatitis is a filtrable virus; that is, a virus which is small enough to pass through a porcelain filter. There are several modes of transmission: the fecal-oral route; contaminated food (particularly milk or shellfish); polluted water; and, in a few sporadic cases, person-to-person contact.
b. **Type B Hepatitis.** The causative agents of this type of hepatitis are a filtrable virus and the Australia antigen (1963-Blumberg). The mode of transmission is both parenteral (intravenously here) and nonparenteral. **Parenterally,** the patient can become infected by a blood transfusion from an infected person, a contaminated needle, or a contaminated syringe. Another method of parenteral transmission is through skin puncture caused, for instance, by an infected medical or dental instrument. **Nonparenteral** transmission can occur between sexual partners. The infection rate for type B hepatitis is far lower than for type A hepatitis; however, type B hepatitis is more dangerous than type A because type B can result in massive liver destruction, chronic hepatitis, coma, and even death.

c. **Non-A/Non-B (NANB) Hepatitis.** Very little is known about the agents which cause NANB hepatitis. These agents may be transmitted parenterally. The viruses may be transmitted by individuals who are chronic carriers; that is, persons who carry the infection but are not actively ill themselves. Those countries where human waste is used as fertilizer have a high rate of carriers of NANB hepatitis. Generally, NANB hepatitis is very much like type B hepatitis.

7-5. **SIGNS/SYMPTOMS OF HEPATITIS**

a. **General Information.** Signs and symptoms vary from a minor flu-like illness to a sudden, fatal liver failure. Much depends on the patient's immune response.

b. **Prodromal Phase.** The early phase of the disease may begin suddenly with the following:

(1) Anorexia.
(2) Malaise.
(3) Nausea and vomiting.
(4) Fever.
(5) Urticarial eruptions (itchy hives) and arthralgias (pain in joints) may occur, especially in Type B hepatitis infection.

c. **Icteric Phase.** This phase begins three to ten days after the initial symptoms. Signs and symptoms include:

(1) Dark urine.
(2) Jaundice.
(3) Symptoms which have occurred throughout the patient's body become less severe causing the patient to feel better in spite of the jaundice.
7-6. PROGNOSIS

Hepatitis is a self-limiting disease, and the majority of patients recover spontaneously. The total illness usually lasts four to eight weeks. A favorable prognosis in hepatitis B is less certain than in hepatitis A.

7-7. TREATMENT

If you suspect that a soldier has hepatitis, refer him to a higher medical treatment facility. Hepatitis patients are normally hospitalized and become a loss to the unit. They are usually not confined to bed and normally not given special treatment. Since these patients become fatigued easily, a high carbohydrate diet is recommended for them.

7-8. PREVENTIVE MEASURES

There are a variety of measures that can be taken to prevent the spread of hepatitis. Note the following:

a. **Personal Hygiene.** Good personal hygiene helps prevent the spread of hepatitis A. Medics should be sure that field sanitation standards are adhered to in a field environment. Good standards for latrines, mess facilities, and personal hygiene should be adhered to.

b. **Field-Standard References.** Use FM 21-10 and TM 8-9 as references for field standards.

c. **Hepatitis Patients' Blood.** Blood of patients with acute hepatitis must be handled with care. Use gloves when drawing such blood from a known or suspected hepatitis carrier. Label any specimen collected as "hepatitis." Use disposable equipment and discard it properly.

d. **Secretion Contact.** Avoid contact with body secretions from known or suspected hepatitis carriers.

e. **Infectious Stools.** Stools from patients with type A hepatitis are considered infectious. Normally, the infectious period ends when the patient's liver function tests are normal and he is discharged from the hospital. During the infectious period, however, the hepatitis patient must have separate latrine facilities. Instruct him to wash his hands after each use of the latrine.

f. **Isolation of Patient.** Isolating the hepatitis patient has been overemphasized. Isolation does little to prevent the spread of type A hepatitis and is of no value in preventing the spread of type B or NANB hepatitis.
g. **Transfusions.** Avoid unnecessary transfusions for the hepatitis patient. Post-transfusion infections are possible and should be avoided.

h. **Blood Donors.** Use volunteer rather than paid blood donors. Screen prospective donors for hepatitis B surface antigen and Australia antigen (HBsAg).

i. **Vaccinations.** There is a vaccine to protect against type B hepatitis. Immune globulins offer some protection against type A hepatitis. The protection in both instances is usually less than three months.

### 7-9. VARIANTS OF ACUTE VIRAL HEPATITIS

a. **Anicteric Hepatitis.** This is a minor flu-like illness without jaundice. It may be only a clinical manifestation of acute hepatitis, especially in children.

b. **Recrudescent Hepatitis.** This type of hepatitis occurs in a small number of hepatitis patients during the recovery phase of their illness. Generally, patients recover well from recrudescent hepatitis. Rarely, the patient develops chronic hepatitis afterward.

c. **Fulminant Hepatitis.** This type of hepatitis is a rare syndrome usually seen in type B hepatitis, NANB hepatitis, or drug injury hepatitis. The patient experiences rapid clinical deterioration. Adults do not usually survive despite heroic measures. Children have a better chance for survival. Meticulous nursing care and careful management of specific complications provide the best hope for recovery. Remarkably, those who do survive this disease recover completely. Cases of fulminant hepatitis have been documented in Korea.

### 7-10. CHRONIC HEPATITIS

Chronic hepatitis is the term for a spectrum of disorders which merge into acute hepatitis or cirrhosis of the liver. Acute hepatitis includes chronic persistent hepatitis and chronic active (aggressive) hepatitis.

a. **Chronic Persistent Hepatitis.** This form of hepatitis is a benign disorder which a patient may get after having had typical acute hepatitis. The disease may last for at least six months. Most patients recover. The disease is often detected in young drug abusers. Treatment is not necessary. Neither diet nor activity needs to be restricted.
b. **Chronic Active (Aggressive) Hepatitis.**

   (1) **Etiology.** This is a serious disorder which can be thought of as a group of closely related conditions rather than one disease. This form of hepatitis frequently results in cirrhosis of the liver and/or liver failure. In most patients, the cause is unknown. It is known, however, that type B hepatitis virus causes a small number of chronic active hepatitis cases. Drugs such as methyldopa and isoniazid (INH) are occasionally responsible for this type of hepatitis.

   (2) **Clinical features.** About one-third of the cases of chronic active hepatitis follow the patient having had acute hepatitis. The disease usually develops gradually. The patient may have a kind of nonspecific feeling of not being well. He may be anorexic and fatigued. Sometimes jaundice is present but not always. Signs of chronic liver disease usually develop and include the following:

   (a) Splenomegaly (spleen enlargement).

   (b) Spider nevi (an enlarged arteriole in the skin spreading out like the legs of a spider).

   (c) Fluid retention.

   (3) **Treatment.** Included are the following:

   (a) Stop the patient taking any drugs which could cause the disease.

   (b) Manage any complications which the patient is experiencing.

   (c) Corticosterioids may be given.

   (4) **Prognosis.** The prognosis varies. When the disease is caused by drugs, signs and symptoms of this type of hepatitis may become less severe. With adequate therapy, the patient usually lives several years.

**7-11. CLOSING**

This lesson has addressed the various types of hepatitis. It is important to identify hepatitis, but it is of greater importance to know the measures which can be taken to prevent the spread of this disease.
INSTRUCTIONS. Answer the following exercises by writing the answer in the space provided.

After you have completed all of these exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers. For each exercise answered incorrectly, reread the material referenced with the solution.

1. Hepatitis may be defined as __________________________________________
   ____________________________________________

2. List the four common types of hepatitis.
   a. _____________________________________
   b. _______________ ______________________
   c. _______________ ______________________
   d. _______________ ______________________

3. Which of the types of hepatitis you listed in exercise 2 may be caused by more than one virus? ____________________________

4. List three ways type A hepatitis can be transmitted.
   a. ____________________________
   b. ____________________________
   c. ____________________________

5. A contaminated needle/syringe or skin puncture by an infected medical or dental instrument are parenteral methods of transmitting _________________ hepatitis.
   a. ____________________________________.
   b. ____________________________________.
   c. ____________________________________.

7. Signs/symptoms of the icteric phase of hepatitis include dark u__________ and i______________________.

8. Hepatitis, a self-limiting disease, usually lasts _____________ (length of time).

9. What do you do if you suspect a soldier has hepatitis? ____________________
   ____________________ ________________________________________

10. Encouraging the practice of good personal hygiene, handling with care blood
    from hepatitis patients, and ensuring that hepatitis patients have separate latrine
    facilities are ways of ____________________________________.

11. ________________________ hepatitis is a minor flu-like illness without jaundice.

12. The term for a spectrum of disorders which merge into acute hepatitis or cirrhosis
    of the liver is ________________________________ hepatitis.

Check Your Answers on Next Page
1. Inflammation of the liver.  (para 7-1)

2. Type A hepatitis.
   Type B hepatitis.
   Non-A, non-B (NANB0 hepatitis.
   Chronic hepatitis.  (para 7-2)

3. NANB.  (para 7-3)

4. You are correct if you listed any three of the following:
   
   Fecal oral route.
   Contaminated food.
   Polluted water.
   Person-to-person contact.  (para 7-4a)

5. Type B.  (para 7-4b)

6. You are correct if you listed any three of the following:
   
   Anorexia.
   Malaise.
   Nausea.
   Vomiting.
   Fever.
   Hives.  (para 7-5b)

7. Urine.
   Jaundice.  (paras 7-5c(1) and (2))

8. Four to eight weeks.  (para 7-6)

9. Refer the soldier to a higher medical treatment facility.  (para 7-7)

10. Preventing the spread of hepatitis.  (paras 7-8a through i)

11. Anicteric.  (para 7-9a)

12. Chronic.  (para 7-10)