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Viral Hepatitis

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Additional information is available at the end of the chapter

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1. Introduction

Main objective patients and families know about the ways of monitoring, controlling and managing the disease on completion of this chapter it is expected that a patient with hepatitis:

- Describe the process of hepatitis
- Identify the various types of hepatitis
- Identify the transmission routs of hepatitis
- Describe diagnostic tests
- Define treatment measures
- Identify medication regimen
- Explain the medication's side effects
- Describe the prevention rules to prevent hepatitis from being transmitted to the households and community
- Identify the precipitating factors of hepatitis
- Describe the required preparations related to the diagnostic test
- Explain the ways of managing sexual problems and its prevention measures
- State the importance of follow-up plan
- Discuss measures to manage complications

- Explain the measures to protect liver
- Identify the involvement of other body organs
- Explain the pregnancy related issues in a patients with Hepatitis
- Identify the alternative and Complementary medicine to manage the condition

At the end of this chapter, it is expected that the family of patients with Hepatitis:

- Describe the process of hepatitis
- Identify the various types of hepatitis
- Identify the transmission routs of hepatitis
- Describe hepatitis diagnostic tests
- Name different treatment plans for hepatitis
- Identify safety measures to prevent transmission
- Describe the measures for providing
- Describe the measures for providing psychological to patients with hepatitis

2. What is hepatitis?

It is a systemic and viral infection, in which the inflammation of liver cells and necrosis occur and these changes lead to biochemical and cellular clinical alterations. Literally, hepatitis means the "inflammation of liver"[1]. The most important factors causing it are viruses. Alcoholic drinks, medicines, poisons and some hereditary diseases also bring about hepatitis [2]. Hepatitis is divided into two kinds of chronic and acute [3].

In acute hepatitis, the diseases lasts for less than 6 months and finally leads to the complete removal of liver damage and the return of liver structure and function to normal level or leads to the immediate progression of acute damage toward extensive necrosis and the demise of patient. However, in chronic hepatitis, the process of disease lasts more than 6 months and patients does not have clinical symptoms [4].

Most patients suffering from viral hepatitis do not have any symptoms and their disease is diagnosed by doing medical tests. Nonetheless, the acute symptoms of disease exist in some patients[5]. Following the contact with the virus causing hepatitis and going through a period, which varies from a week to a few months and is called the latent period, the acute symptoms of suffering from viral hepatitis would emerge, which include: lack of appetite, excessive fatigue, exhaustion and vomit, abdominal pain, darkening of urine, paling of stool and turning of skin into yellow [6]. The symptoms of the disease usually last for days or weeks and its symptoms would be eradicated automatically. It must be attended that symptoms resembling influenza could be seen as muscular pain, exhaustion, and slight fever days or weeks before the emergence of the disease acute symptoms [2].

3. Acute hepatitis symptom

Pain at the right and the upper abdominal area is due to the exposure of liver capsule to traction and it is removed by the amelioration of the disease. Getting jaundiced means the yellowness of the skin and eyes. It must be attended that most patients suffering from hepatitis A and C do not have any symptoms of acute hepatitis, esp. jaundice. Some patients complain of bodily irritation which could be rooted in liver damage. Joint-related pain is also a part of acute hepatitis syndromes [7]. In case of the progression of hepatitis, there is the likelihood of swell in stomach and inflammation of feet which could lead to digestive bleeding.

Five types of hepatitis have been found; A, B, C, D, and E. types A and E are akin with regard to the way of transmission (the stool-oral path). Types B, C and D are also similar to each other [8].

4. Viral hepatitis, type A

What is hepatitis A?: This type is more common in developing countries or in crowded places with poor hygienic conditions. Its transmission way is through oral-stool path. Individuals are afflicted with it by having water and seafood tainted with sewage. This disease is not transmitted through blood but it is likely to be transmitted via sexual contact and having oral-anal contact [9].

Duration: The common course of the disease is 15 to 150 days and it could last from 4 to 8 weeks. This disease does not have chronic and carrier courses. In case of the emergence of jaundice, the disease is not probably infectious [2].

Diagnosis: The diagnosis method is based on symptoms, signs, physical examination and blood tests. Blood test usually remains as positive 5 days prior to the onset of symptoms up to 6 months after infection [10,11].

Treatment: Individuals must be reminded that this type of hepatitis does not have any treatment, although most individuals might recuperate by supportive treatments. A person with hepatitis A virus requires in-hospital treatment for liver functioning. The patient must be trained to start walking slowly and progressively at once after feeling recuperated and to take rest after each time of walking [2,12]. The food for these patients mustn't be kept more than 2 hours at the level of room temperature.

Cautions: It is better for individuals who travel to endemic areas to get injected by vaccine in form of prophylaxis [8]. Hands ought to be washed thoroughly after bath taking, going to toilet or any kind of contact with body liquids (blood, phlegm, semen).

The suffering patient must not prepare any food for family members. Also, she/he must not participate in carrying food to table (work prohibition at restaurants and fast food outlets)[13].

There ought not to be any sharing of bathroom toiletries between the suffering individual and other family members. The individual suffering from hepatitis is detected through symptoms,

signs, physical examination and blood tests. A positive blood test usually pops up 5 days before the emergence of symptoms and remains unchanged up to 6 months after infection. There is no treatment for hepatitis A, although most individuals recuperate by supportive treatments. The individuals must be trained not to refer back to their work office or school until they have fever or jaundice or their appetite returns. Throughout the recuperation period, it is mandatory to refrain from drinking alcohol or taking non-prescribed medications.

There are two vaccines available for preventing Hepatitis A-related infection, namely as VAQTA and HAVRIX. Those who receive two dosages of these vaccines would be immune [14, 15].

5. Hepatitis E

What is hepatitis A? This type is transferred via the oral-stool tract and mostly due to polluted water in areas that have weak and inappropriate sewage systems.

Duration: Its common period is variable and lasts between 15 to 65 days.

Symptoms: It is akin to Hepatitis A with regard to clinical symptoms and transferring ways. Jaundice almost always exists and avoidance from virus is made possible through rinsing hands as the main prevention method of this disease. The effectiveness of immune globins in creating immunity against Hepatitis E is unknown. The clinical symptoms of hepatitis A and E are like influenza, appetite loss, indigestion, epigastria pain, vomiting, and irritation of stomach and acidity of abdomen alongside hatred of cigarette smoke [2,16].

Treatment: It is better for these patients to use a diet full of protein (beans, meat, dairy, etc), high calorie (cereals, potato, etc), balanced fat (at the chronic courses of the disease with a low-protein diet), enough taking of liquids, eating food in several meals with low volume, avoiding to drink alcohol at the chronic courses of the disease and 6 months after that.

Patients must have enough rest at the chronic phase of the disease. Patients can gradually resume their activities after feeling healthy and examining their laboratorial tests. However, after being active, they ought to rest and avoid taking part in drudgeries [14].

Caution: It is necessary to prevent these two types of hepatitis by training individuals about the correct way of dumping sewage of houses and cities, exact observance of individual health, correction and refining the process of food provision and distribution, community health training programs, legal reporting of cases of hepatitis A and E to local health centers, vaccinating the travelers going to developing countries, application of non-permitted medications (injective and non-injective), homosexual individuals and those suffering from chronic liver diseases, and injection of immune globins for family members and sexual partners suffering from hepatitis A [8,14]

Rinsing and disinfecting fruits and vegetables, not using polluted water and foods (boiling water for one minute deactivates hepatitis virus) and not using personal things of others [16].

6. Hepatitis B

What is Hepatitis B? This type is transferred via blood (sub-phlegm and endodermal ways). Its virus could be found in blood, saliva, semen and vaginal discharges and can be transferred via the phlegmatic membrane and damaged skin. Also, pregnant mothers could be afflicted through sexual contact after or during delivery [9].

Duration: Its common course lasts from 1 to 6 months [2].

Symptom: The symptoms and signs of hepatitis B might be quite arcane, deceitful and variable. Respiratory and fever-related symptoms are rare. Some patients suffer from rash and joint pain. Patients might lose their appetite and suffer from indigestion, abdominal pain, general pain, ill health and weakness. Jaundice might occur or not. In case of its occurrence, it would be accompanied by light color stool and dark urine. Clinically, it has a lot of similarities with hepatitis A but its common course is longer [13]. More than 90 percent of infections can be prevented in women suffering from HBV and their infants can receive the hepatitis B vaccine and immune globins B in prophylaxis manner for preventing infection. Babies must undergo serological test within 9 to 15 months of age [1].

It must be mentioned that at-risk individuals might be afflicted with the virus of hepatitis B via using polluted blood products, contact of polluted blood with eyes, mouth, bleeding or damaged skin of healthy people, transfer from mother to fetus, tattooing and cupping, sexual contact, non-sterile dental and medical devices, esp. shared and non-sterile syringe, razorblade or toothbrush. This virus is not transferred through shaking hand, kissing or going to pool [17].

Cautions: Therefore, individual hygiene is the basis of infection control. Disinfection must be done on a daily basis at related laboratories. Gloves must be worn when contacting with patient's blood or discharges and smoking and eating must be refrained at work site. Patients and their families must be reminded that this disease is contagious and the pre-awareness of this disease is chronic. It is essential that family members and health personnel receive the hepatitis B vaccine in three dosages intravenously within a one-month interval from the second dosage and 6 months for the third dosage within six months after the first dosage injection. Such immunization leads to the protection of patient for at least 5 to 10 years [18,19]. These patients must be to have insight about their disease and to know the transmission ways of this disease. Knowing this disease affects the quality of life among individuals and their families [20].

The infant born from a mother infected with hepatitis virus B ought to receive immune globins within 12 hours after birth [9].

An individual who has been at exposure to hepatitis virus B and has not ever been afflicted with hepatitis and has not received vaccine must receive the immune globins injection at most 24 hours after contact with the virus [8].

Patient must take rest till the ebbing of hepatitis symptoms like liver inflammation, jaundice, and decrease in high liver enzymes (sometimes up to 3 to 4 months).

At the chronic phase of the disease, which entails a limit on protein and fat intake, patient must at several meals with a low volume of food intake.

In case of vomiting, taking of all medications must be avoided. If it is not stopped, patient must refer to doctor and avoid drinking alcohol, refrain from sexual intercourse or in case of having sex, condom must be used [2,8].

In case of need, medications must be taken only with doctor's prescription. After recuperation (usually 18 months afterward), patient must refer to doctor for undergoing checkups and laboratorial tests. It is recommended to healthy carriers to undergo the required checkups and laboratorial tests once every six months at the first year of the disease and after that once every year. In case of going to dentist's, doctor's, laboratory or anywhere in which the possibility for the transmission of the virus exists, it is recommended to patient to inform the health personnel there about the positive nature of their disease and show their special card [17]. Patient must be trained not to use bathroom toiletries in a shared manner. Toothbrush, nail clipper, shaving machine, thermometer and cosmetics must be absolutely personal.

7. Hepatitis C

What is Hepatitis C? A significant percentage of hepatitis cases are neither A, B nor D. Consequently, they are referred to as hepatitis type C. Hepatitis C is transmitted through blood, sexual contact, using septic syringe by the applicators of injective, intravenous medications, the abrupt penetration of needle head and other kinds of injuries among health care personnel [15] and also cutaneously (breathing in narcotics like cocaine) [17,21].

This virus is not transmitted through nestling, breastfeeding, sneeze, water, food, sudden contact and shared dishes.

Duration: The latent course of this disease varies from 2 to 26 weeks. Most patients do not show any overt symptoms. In case the virus exists in the individual's body for more than 6 months and gradually damages the tissues of liver, the chronic hepatitis C emerges [17].

Symptoms: Patient might complain about slight to severe lethargy and weakness, decrease in appetite, spew and vomit, having pain at the upper and right sides of abdomen (below ribs), fever and pain in joints [22,23]

Besides, they are recommended to drink abundant liquids (8 liters daily) and to eat foods that have a lot of vitamin and minerals, like fresh fruit juices (without food limitations). In addition, they are advised to eat foods at several meals in low volume and to use ginger for relieving vomit [9,22].

Treatment: One of the main treatments about hepatitis C is taking the medication group of interferon. Throughout undergoing treatment with interferon, patients must be examined closely by virtue of the possible side effects. Therefore, immediate monitoring while undergoing treatments is viable for reducing these side effects to some extent. These treatments inevitably entail some degrees of side effects like fatigue, muscular pain, flu-like symptoms

and change of mood and reduction in sexual desire which might bear negative effects on patients' lives, their social interactions and their abilities for doing work and different activities. The significance of the side effects emanating from treatments forms the basis of decision making by patient and doctor for commencing with or quitting treatment before thoroughly completing the treatment course. Stopping the treatment before completing the course indicates patients' lack of tolerance. Hair loss, annihilation of bone marrow and psycho-physiological impacts (depression, cognitive changes and apathy) are among the side effects. The side effects of interferon group continue from a few hours after prescription and patients get used to it after a few weeks of consumption [2,14,24,25].

Cautions: The hepatitis virus type C is transmitted through using septic blood products, the contact of septic blood with eyes, healthy individuals' mouth and injured skin, toothbrush, shaving machine and all septic personal things, tattooing and cupping, sexual contact, using septic dental and medical devices, esp. non-sterile and shared syringe. Hence, it is recommended to observe the personal hygienic points including of sterilizing the devices used in ear perforation and tattooing, using gloves and rinsing hands and not using others' personal devices. It is also recommended that individuals use condom when having sexual contact with the afflicted person [22]. The family members of the suffering individual and also the members of society in which they live must be informed that there are no vaccines for hepatitis C. With regard to injective addicts, they ought to use new injection tools in every injection in case of being unable to withdraw from their addiction and they are advised not use needle, syringe, swap, filter, spoon, toothbrush and shaving razorblade and hair clipper in a shared manner. Besides, they must be trained about the correct way of dumping the applied tools. By virtue of breastfeeding women who suffer from hepatitis, it is advised that they examine their breast tips each time before breastfeeding since Hepatitis C is a disease that can be transmitted through blood. In case of having a crack, bleeding or any kind of blood at breast tips, breastfeeding must be stopped temporarily and all the milk must be thrown away. It is also recommended to these mothers to wean their infants once they start to grow teeth and feed them by bottle [14,15].

The individuals who are afflicted with Hepatitis C are recommended to inform the personnel at medical centers, dentist's, laboratories or nay other places which entails the possibility of virus transmission [22]. It must be explained to patient to refrain from taking acetaminophen, anti-convulsion medications, alcohol, etc. In case of having dry mouth, they are recommended to drink water frequently in a sipping manner and to chew sugar-free gums.

They are also advised to follow the hygiene of mouth and teeth. Cutting down on sugary drinks and foods, using florid supplements once a day, using floss, snit-microbe mouthwash, reducing cigarette and quitting it, regular examination of teeth, their whitening and taking care of false teeth are among the tips given to these patients [9].

8. Hepatitis D

What is the hepatitis D? : In some cases, hepatitis B takes place due to the fact that its virus is at exposure with the superficial antigen and risk of hepatitis D. Anti-delta antibodies within

the antigen in the blood sample ascertains the existence of hepatitis B. hepatitis D is prevalent among the users of injective, intravenous medications, hemodialysis patients and receivers of various blood donations.

Duration: Its common course is between 21 to 40 days.

Symptom: The symptoms of hepatitis D are akin to hepatitis B and its treatment is similar to all other forms of hepatitis [2,9].

9. Cirrhosis

What is Cirrhosis? It is a chronic disease that is identified by the replacement of fibrosis instead of the natural tissue of liver and consequently the deformation of liver's structure and performance. There are three kinds of Cirrhosis of liver: alcoholic Cirrhosis, post-necrosis Cirrhosis and bilious Cirrhosis [2].

Among the most important causes of Cirrhosis are chronic hepatitis B and C, excessive consumption of alcoholic drinks, disturbances in the exiting tract of blood from liver, increase of iron in liver, etc.

Symptoms: The symptoms of Cirrhosis at initial stages are fatigue, lethargy, loss of appetite, vomit, weight loss, enlarging of blood vessels in shape of spiders under the skin, hair loss, enlarging of nipples in men, accumulation of liquids in abdomen and feet, reduction in sexual desire and potency in men, malodorous smell, oily diarrhea, emergence of dead blood cells under skin, irritation and bloody vomit [17].

Treatment: Patient must be trained to use sufficient amount of fruit and vegetables.

They are also recommended to use all other proteins except red meat, including of herbal protein, fish, chicken, etc. and also to refrain from drinking alcohol and take vitamins, esp., A, C and K.

Eating foods in several mealtimes with low volume (instead of 3 meals, having six meals) and having a nutritional diet full of calorie and average amounts of protein (1 gram per each kilogram of protein) with limitations for using salt are among other tips [26,27]

Using ice cubes is conducive for relieving vomit and constipation alongside taking liquids and exercising are also recommended. Skincare is possible through changing lifestyle, using alcoholic soaps and liquids for cleansing the skin and applying softeners for massaging the skin while exercising the joints and limbs.

They are also advised to go to doctor in case of having blood (clot, nasal or gum bleeding and the existence of blood in stool) and to use soft-bristle toothbrush. Patients must gently clean their nose and use cold compress for decreasing their bleeding. Eating foods full of vitamin C is also recommended. Supportive measures are also recourse to for preventing deterioration.

Patients must measure their stomach with a meter on a daily basis and observe the limitation on using salt and liquids, they ought to report any symptoms to doctor. There are no limitations

on activities but in case of having fever, bleeding and all other problems, caution must be exercised. Since the metabolism of most medicines is carried out through liver, it is recommended to avoid wishful consumption of medicines [25,26].

10. Sexual functioning training

Chronic hepatitis infection brings about changes in the hormone levels of body. In short, these patients experience the following conditions:

- disturbance in the function of testicles
- body hair loss
- increase in breast size (gynecomastia)
- improper distribution of fat in body (fat accumulation in special parts of body).
- disturbance in erection
- Irrespective of patients' gender, these patients experience sexual disturbances at different dimensions and in case of consuming alcohol by these patients, they become susceptible in sexual issues which require more serious and costly measures. The continuation of sexual disturbances brings about effect on the quality of life among these individuals.

Hepatitis C information Center It is necessary to train these patients to consult with doctor or nurse in case of having sense of stimulation, pain at the time of stimulation, incapability in erection, incapability in maintaining erection for making sexual contact, delay in ejaculation or lack of ejaculation despite having enough stimulants, lack of ability in controlling or scheduling ejaculation and finally reaching to sexual climax. A good sexual partner has a significant role in solving sexual problem [28,29].

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