

PILOTING THE HCV ELIMINATION PLAN

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**Institute for Social
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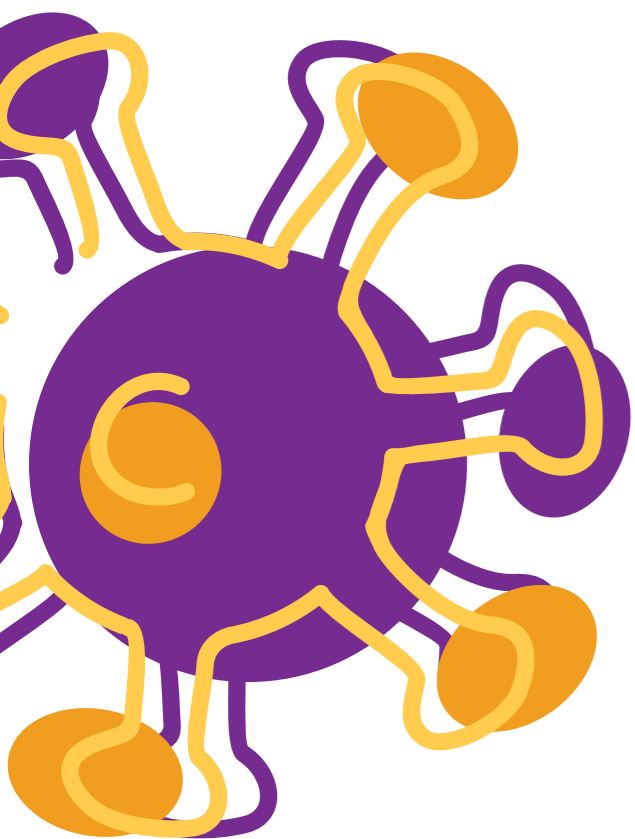
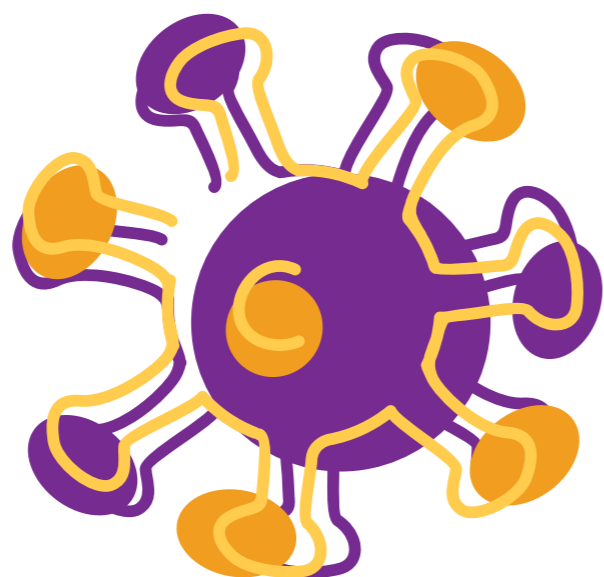
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Hepatitis C GUIDEBOOK





INTRODUCTION	4
CHAPTER 1 Facts about Hepatitis C. Know your disease	5
CHAPTER 2 Hepatitis C treatment	13
CHAPTER 3 Liver: the laboratory of man	19
CHAPTER 4 Living with hepatitis C	23
CHAPTER 5 Diet	26
CHAPTER 6 Where to get treatment?	32
GLOSSARY Concepts associated with hepatitis C	34

CHAPTER 1

Facts about hepatitis C. Know your disease

More than 59 million people worldwide suffer from hepatitis C.¹

After several years, hepatitis can lead to liver damage and cirrhosis. In this guide you will find basic information about this disease.

1. Blach S, et al. Global status update on the HCV prevalence and cascade of care entering 2020. AASLD The Liver Meeting; Nov 12–15, 2021 (abstr 100).

Hepatitis C (Pol. WZW typu C) is an inflammation caused by a virus that damages liver cells.

The virus is transmitted by blood and you can become infected when your blood comes into direct contact with the blood of someone infected with HCV.

Situations in which infection with the virus can occur

Transfusions of blood or blood products using contaminated blood (before 1992)



Use of contaminated straws, needles or injection materials (shared with others while using intoxicating substances)



Unprotected sex with a person infected with hepatitis C if blood-to-blood contact occurs



Medical, surgical and dental procedures performed with reused or insufficiently sterilised instruments



Careless manicure/pedicure (when bleeding occurred) with inadequately sterilized tools (very rare)



Piercing and tattooing or acupuncture treatments with inadequately sterilised instruments



Lending items of personal use, such as toothbrushes, razors













Transmission of the virus at birth from a mother infected with hepatitis C (very rare).



How to recognize the disease?

Most often, the first signs of the disease appear between 2 weeks and 6 months after infection. Some people do not show symptoms until 30 years after infection, often when the disease is already advanced.

The most common complaints are:



-  extreme fatigue,
-  nausea or vomiting,
-  loss of appetite,
-  fever,
-  dark coloured urine,
-  joint or muscle pain,
-  vague symptoms or pain in the abdomen or at the level of the liver,
-  discoloured stools,
-  jaundice (yellowing of skin and eyes)
-  mental and psychological ailments.

How to prevent the transmission of infection to other healthy people?

You may be worried about contracting hepatitis C. Stay calm.

It is not possible to transmit hepatitis C during ordinary activities, such as holding hands, kissing, drinking from the same glass or coughing or sneezing.

Hepatitis C can only be transmitted through blood-to-blood contact, so follow two basic tips:

-  **Ensure that other people do not use items that may have blood on them, such as: shared toothbrushes, razors, electric shavers, needles or syringes.**
-  **Avoid unprotected sex, during which the continuity of tissues may be compromised.**

What to do if hepatitis C is suspected?

If you have noticed the above-mentioned symptoms in yourself, or there has been a situation where your blood has come into contact with the blood of an infected person, you should be tested. You can find a detailed explanation of these codes below.

Testing for hepatitis C

ANTIBODY TESTING: are you infected with the virus?

When the body fights the virus to inactivate it, the immune system produces antibodies. Their detection allows doctors to confirm whether you ever had the virus. In 15–25% of people, the virus disappears in the first six months, so this is followed by a PCR (Polymerase Chain Reaction) test to determine whether your body has spontaneously defeated the virus or whether it is still present and you are suffering from so-called chronic hepatitis C.

PCR TEST: is the virus still in your body?

Using this test, the presence of the virus is detected and its amount in the body is determined.

GENOTYPE TEST: what subtype of the virus are you infected with?

There are different strains of hepatitis C, denoted by numbers from 1 to 7, and with this test you will find out which strain of the virus is present in your blood. In Poland, the most common genotype of the virus is genotype 1.

TESTS FOR LIVER DAMAGE: what condition is your liver in?

If the virus is in your blood, your doctor will examine whether your liver is damaged and whether its function is still normal.

1. blood test

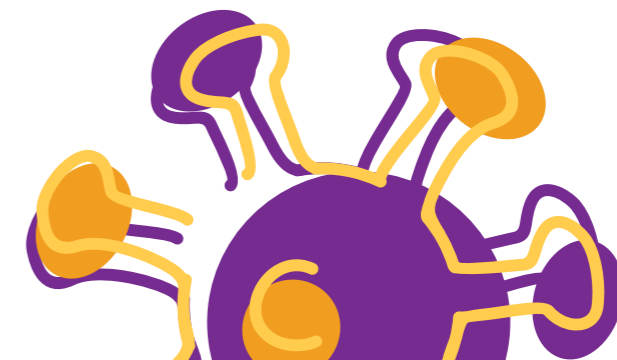
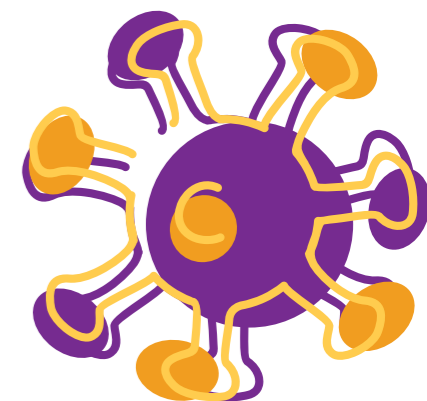
measuring enzyme activity: **ALT, AST**
show whether liver cells are damaged

2. fibroscan or elastography

measuring the elasticity of the liver using sound waves (the test is painless)

3. biopsy:





collection of a small piece of liver tissue and examination under the microscope



What to do after receiving a diagnosis?

A diagnosis of hepatitis C can sometimes come as a big shock. Everyone reacts differently to such news. Some people feel anger, others are confused or simply surprised. All of these reactions are understandable. Dealing with emotions can be as difficult as the health consequences. It is important that people who have just received a diagnosis seek support.

Find out what options are available to deal with it:

-  asking your doctor or nurse for more information about hepatitis C;
-  joining a liver disease patient association or other support group;
-  contacting a person with hepatitis C to share their experiences about the disease and coping with it;
-  consultation with a psychologist.

Above all, remember to give yourself time. Some act as if nothing happened, while others take up the fight. If you are a partner, family member or friend of an infected person, you can also seek support.

Do you speak openly about your diagnosis?

Diagnosis is a very personal matter. It is only up to you if you want to talk about it. Remember that you should not be ashamed of your illness.

Accepting the diagnosis can be difficult, but it helps to have a positive attitude toward eliminating the disease. An obstacle has appeared in your path, but overcoming it today is possible.

CHAPTER 2

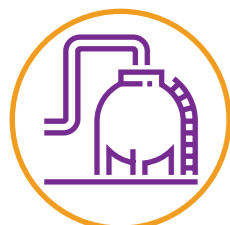
Liver: the laboratory of man



Liver

The liver is the most important gland found in the human body. Its weight depends on gender: for men it is 1.5–1.7 kg, and for women 1.3–1.5 kg. The liver is located intraperitoneally, under the diaphragm on the right side of the abdominal cavity. Its largest part is located in the right subcostal region. In a healthy adult, the liver is completely covered by the right rib arch. In children it may protrude slightly, and in newborns it occupies most of the abdominal cavity. The lower part of the gland borders the intestines and stomach, while from the top and front it meets the diaphragm. Like most organs, the liver is covered with a serous-peritoneal membrane that also lined the abdominal walls.

Selected liver functions:



the production of bile necessary for digestion and absorption, regulation of cholesterol production, regulation of carbohydrate metabolism (regulation of normal blood glucose levels), participation in synthesis processes (enzymes, hormones, proteins)



participation in the conversion of sugars and proteins into fats



involved in the degradation and detoxification processes of many compounds (alcohols)



storage of various components, such as glycogen, fats, carbohydrates, vitamins (A, D, B9, B12), as well as iron.

Liver diseases

Liver failure

is a condition in which the liver is partially or completely unable to function effectively, i.e. synthesis, metabolism, storage, filtration and many other activities. Liver failure is divided into chronic and acute.

Chronic liver failure

is a permanent and progressive dysfunction that is a consequence of a chronic disease. The condition is characterized by the occurrence of hepatic encephalopathy (nervous system dysfunction that results from toxins that appear in the body due to liver damage) and plasma coagulation disorders.

This group primarily includes cirrhosis, as well as chronic persistent hepatitis, chronic lobular hepatitis, lupus-like hepatitis, unspecified chronic hepatitis.


Acute liver failure

is a potentially reversible, sudden, persistent and progressive liver dysfunction (without previously diagnosed liver disease), characterized by the onset of hepatic encephalopathy within 4–26 weeks of liver damage and plasma coagulation abnormalities.

Liver failure: causes

 **chronic alcohol abuse**

 **poor nutrition**

 **a history of viral hepatitis**
(HBV, HCV or other viruses that cause hepatitis),

 **liver tumors**


 **drug poisoning**
(paracetamol or other hepatotoxic drugs)

 **poisoning by toxins**
(most commonly the toxin of the Amanita phalloides)

 **fulminant hepatitis B**

 **hepatic venous thrombosis**

 **other liver diseases**
(e.g., chronic autoimmune hepatitis, Wilson's disease)

 **other systemic diseases**
(e.g., shock or sepsis)


Chronic liver failure


Acute hepatic failure

Liver failure: symptoms

Chronic liver failure can be asymptomatic. Only when most of this organ is damaged the symptoms of failure appear.

It initially appears:

weakness,

followed by gastrointestinal complaints such as:

lack of appetite,

weight reduction,

the feeling of fullness after eating,

poor tolerance of fats and alcohol,

abdominal pains (especially on the right side),

bloating,

unpleasant burping after eating,

nausea.

They are followed by:

jaundice,

liver enlargement,

swelling around the ankles,

varices of the esophagus or rectum.



Ascites

that is, the presence of fluid in the abdominal cavity, usually indicates a high degree of liver failure.

The symptoms of acute failure are very similar to those that appear in the advanced stage of the chronic form of the disease. In addition, there are the following symptoms:

disturbances of consciousness

and contact with the patient is impossible. These symptoms appear within 4–26 weeks after liver damage

Sometimes liver diseases are asymptomatic. Also, biochemical test results may be normal, despite the progressive disease process. Consequently, repeated specialized tests are often necessary to detect liver disease.

CHAPTER 3

Hepatitis C treatment



Chronic hepatitis C treatment in Poland

Scientific reports and current medical knowledge say that treatment of chronic hepatitis C (especially when the patient achieves SVR, or sustained virological response) leads to inhibition of the inflammatory process and improvement of liver function.

In Poland, hepatitis C treatment is carried out in accordance with the therapeutic program financed by the National Health Fund (Pol. NFZ) with public funds. This program defines the criteria for including a patient in this program, and clearly defines the treatment regimens that can be used to be publicly funded.






As of July 1, 2015, interferon-free therapies are available within the program.

As the eligibility rules for therapy have definitely expanded, it has become possible to effectively treat patients in the early stages of the disease. This is particularly important because curing the disease at an early stage offers a real chance of stopping the process of liver fibrosis and, in some cases, reversing the process.





What does the treatment look like?

Hepatitis C treatment consists of two stages: observation of the liver and the disease process (monitoring) and treatment of the infection.

In turn, treatment is determined by the following factors:

-  **degree of liver damage**
(fibrosis stage: F0–F4)
-  **extent of symptoms**
-  **metabolic diseases**
(e.g., diabetes)
-  **the presence of other infections**
(e.g., shock or sepsis)
-  **genotype**
(the most common are 6 HCV genotypes, which are denoted by the numbers 1 through 6)

Both the patient and the doctor during treatment are concerned with achieving specific goals:

-  **removing the virus from the body so that it cannot cause (further) damage to liver cells,**
-  **reducing hepatitis,**
-  **reducing the risk of disease transmission,**
-  **inhibition of fibrosis (possibly already occurring).**

The doctor — after consulting with the patient, of course — will indicate when it will be necessary to start taking medication. Personal circumstances may lead to postponement of treatment, or the patient may have other reasons not to undergo treatment. It is important that the environment understands and respects the decision of a sick person who does not want to undergo treatment. The support of friends and family is very important. It is also important to motivate the patient during the course of therapy and to take medication systematically.

How to help the liver?

A person with hepatitis C can make several modifications to his current lifestyle to relieve the burden on the liver.

For example:



refrain from drinking alcohol



eat healthy



stay physically active



take medications as prescribed
(This includes over-the-counter medications such as painkillers)



maintain adequate body weight



consult your doctor
before starting any diet or exercise program

CHAPTER 4

Living with hepatitis C



Hepatitis C is a family affair

A disease such as chronic hepatitis C is a family affair. Each of its members will have to be patient and supportive.

It is worthwhile for you to explain everything to your relatives: showed them a handbook, explained what the disease is and the routes of infection (hepatitis C is not transmitted by shaking hands, coughing, sneezing, touching, sharing dishes, water), and stressed the importance of using separate toothbrushes, shavers and other toiletries (as there may be blood on them).

Stigmatization

Many patients may be ashamed of their disease or experience other people's negative attitudes toward those infected with HCV. However, this is only due to ignorance about the virus and the ways it can be transmitted.

In such a situation, explain what the disease is and say that it is curable thanks to modern therapies.

Sexual activity

Hepatitis C is not classified as a sexually transmitted disease, and there is no evidence of sperm infectivity in people infected with HCV alone. The risk of infection through sexual contact, although small, nevertheless exists-due to the possibility of damage to the epidermis or mucous membrane of the reproductive organs during penile movements in the vagina.

For this reason, condom use is a prophylaxis against potential infection.

Travel

There is no reason to forgo travel because of hepatitis C. However, if you are undergoing treatment, discuss with your doctor your options for medical assistance in your destination. To this end, it is advisable to ensure that you have adequate travel insurance, which local medical centers require.

More information on safe travel is available from local patient assistance associations, e.g. ELPA, European Liver Patients Association (www.elpa-info.org/).

CHAPTER 5

Diet



Nutritional support depends on the severity of the disease. Chronic liver disease is treated with individual dietary recommendations and, in selected cases, with nutritional therapy.

Meals

Patients with liver disease are often malnourished, which is caused by both the disease and a deficient diet. It is usually recommended to eat 5–6 meals a day at equal intervals, but in special situations (such as malnutrition) the number of servings can be increased.

Fluids

During the initial period in most liver diseases, fluid supply is not restricted; in the case of cirrhosis, the doctor may order a limited amount of fluids.

Elimination

Do not consume coffee, strong tea, hot spices and other ingredients that cause pain and bloating.

Fried, smoked, cured or vinegared foods and processed foods should be eliminated from the diet.

It is not advisable to consume very cold or hot foods and drinks.

Alcohol must not be consumed.

Preparation technique

Food preparation techniques: cooking in water and steam, baking in aluminum foil or parchment paper, baking sleeves, braising without fat, frying in grill pans and fat-free pans, roasting in a clay pot.

Remember!

Food should provide all the necessary nutrients to create the ideal conditions for healing.

The daily diet should include:

Protein

Diverse sources of protein, with more than half of the protein to be of animal origin: from dairy products, fish and poultry, rabbit, game, and egg whites; red (lean) meats should be consumed less frequently. Plant sources of protein, especially peas, beans, lentils, soybeans can unfortunately be less well tolerated.

Fats

Fats should be easily digestible: from milk, butter and vegetablefats (oils, olive oil). Animal fats with a high melting point (tallow, lard, bacon) are eliminated from the diet. In cases of bile secretion disorders, fat restriction may be necessary.

Carbohydrates

Carbohydrates cover the main energy needs. Well tolerated are: starch contained in grain products and potatoes, carbohydrates from rice, pasta, finely ground groats. Avoid simple sugars. Their excess in the diet (sugar, sweets) can lead to increased steatosis of the liver, which worsens the function of the already diseased organ.

Dietary fibre

Fiber contained in plant products, vegetables and fruits. Its amount should be adjusted according to the state of health (for example, depending on the number of bowel movements, diarrhea or constipation).

Vitamins and mineral salts

It is advisable to eat plenty of products rich in vitamins: A (fish fats – fish oil; yellow, orange and red vegetables and fruits), K (green leafy vegetables, tomatoes, strawberries), C (fresh vegetables and fruits) and B vitamins (beer yeast).

It is good to consume vegetables and fruits in the form of shredded, cooked purees. You can eat lettuce and finely grated carrots if they are well tolerated.

In chronic liver disease, the doctor — depending on the clinical condition associated with the liver disease and accompanying conditions — may change nutritional recommendations individually.

RECOMMENDED PRODUCTS

Grain products

light bread, wheat bread, crisp bread, graham bread, biscuits, rusks, yeast dough, with fruit, cakes, gingerbread, oatmeal, cornmeal, white rice, fine pasta, fine groats (semolina, couscous)

Vegetables

cooked, pureed, finely chopped, young green beans, zucchini, cauliflower, potatoes (cooked, mashed), can be with butter; raw: green lettuce, peeled tomatoes, dill, parsley, carrots, broccoli, celery, beets (in limited quantity due to high fiber content)

Fruits

berries (blackcurrants, raspberries, strawberries) — in the form of purees; lemons, oranges, tangerines, grapefruit, apricots, peaches, apples (preferably baked or cooked), bananas, grapes (without seeds and peeled)

Milk and milk products

skim milk, skimmed yogurts, kefir, sour milk, skimmed cottage cheese, buttermilk, skimmed homogenized cheese

Eggs

egg whites, soft-boiled, poached, loose scrambled eggs, omelets

Meat

chicken and turkey meat (without skin), veal, lean beef, rabbit meat, poultry sausages, poultry in jelly, tenderloin, ham without visible fat

INADVISABLE

fresh bread, coarse groats (buckwheat, pearl barley), French croissants, butter rolls, fat-fried baked goods (e.g., doughnuts, angel wings), shortcrust pastries, crackers

brassica vegetables, dry legumes, green beans, onions, garlic, chives, asparagus, leeks, swede, peppers, cucumbers, radishes, potato dishes: French fries, fried potatoes, potato pancakes, chips

all unripe fruits, pears, plums, cherries, gooseberries, dried fruits, pickled fruits, nuts, dates, figs

full fat milk, cottage cheese and cottage cheese homogenized fat, yellow cheese and processed, blue cheese, feta cheese, cream, condensed milk

scrambled eggs fried in fat/ bacon, fried eggs, hard boiled eggs

fatty beef and pork, duck and goose meat, mutton, fried, breaded, cured, smoked meat, fatty cold cuts, salami, black pudding, pâté, sausages, minced meat, canned meats

RECOMMENDED PRODUCTS

Fish

lean fish (cod, pollock, perch, pike, tench, pikeperch, hake, halibut) and fatty fish (rainbow trout, sardine, herring, mackerel, salmon, eel), grilled fish, baked in the oven, in jelly

Soups

milk, vegetable, potato, krupnik soup, thickened with flour or milk, vegetable broth

Fats

canola oil, sunflower oil, soybean oil, olive oil, butter and soft margarines in small amounts, sweet cream

Spices and sauces

dill, parsley, marjoram, cumin, basil, oregano, vanilla, cloves, cinnamon, lemon juice, aniseed, mild citric acid

Desserts

fruit mousses, jellies, puddings on skim milk, bee honey, seedless jams, sugar

Beverages

still mineral water, weak tea, fruit compotes, diluted fruit and vegetable juices, coffee with milk, natural coffee, grain coffee, milkshakes

INADVISABLE

smoked fish, fried in butter, lard or margarine, battered, shrimp, squid, caviar, mussels

fatty soups cooked on meat stock, bone stock, cabbage soup, pea soup, bean soup, cucumber soup, seasoned with cream

hard margarines, lard, pork fat, cream, bacon

paprika, pepper, vinegar, mustard, mayonnaise, chili, curry, sauces in roux, onions, garlic, all kinds of pickles

whole milk puddings, creams, ice cream, sauces made with cream or butter, cakes, donuts, fatty pastries such as French pastries, industrial confectionery, chocolate, bars, toffees, caramels, nuts, halvah

strong coffee and tea, cocoa, chocolate, carbonated soft drinks, cola drinks, alcohol

CHAPTER 6

Where to seek treatment?

Up-to-date information on infectious disease outpatient clinics and clinics in Poland is available on the National Health Fund website:

<https://aplikacje.nfz.gov.pl/umowy/search.aspx>

GLOSSARY

Concepts associated with hepatitis C

A

Alanine aminotransferase (ALT)

An enzyme released from liver cells, among others. Elevated activity of this enzyme in the blood may indicate liver damage.

Albumin

A protein produced by the liver. Low albumin levels can indicate poor nutrition or liver failure, among other things.

Alpha-fetoprotein (AFP)

A protein whose blood levels are often elevated in people with liver cancer.

Anaemia

Reduced red blood cell count or reduced ability of blood to carry oxygen. Symptoms include fatigue, weakness, pale skin.

Antibodies

Proteins produced by the body in response to contact with a microorganism in order to combat it. Antibodies are produced by infection or vaccination.

Antigen

Any agent or substance that stimulates an immune response. It can come from outside (such as bacteria and viruses) or from within the body (such as the body's own cells).

Anti-HCV

Antibodies to hepatitis C virus (HCV). Their presence in the blood indicates past or present HCV infection.

Ascites

Abnormal accumulation of fluid in the abdominal cavity.

Aspartate aminotransferase (AST)

An enzyme released from liver cells, among others. Elevated activity of this enzyme in the blood may indicate liver damage.

Asymptomatic

That is: without symptoms of disease. Asymptomatic infection is an infection without clinical symptoms.

B

Bile

Liquid secretion of the liver to aid digestion.

Bile ducts

The pathways through which bile passes from the liver and gallbladder to the duodenum.

Blood morphology

A basic blood test that involves quantitative and qualitative evaluation of white blood cells, red blood cells, platelets and hemoglobin concentration.

C

Carrier

An infected person (e.g., with a virus) who has no symptoms of the disease, but can infect others.

Cholestasis

Obstruction of the outflow of bile from the liver, gallbladder or extrahepatic bile ducts into the duodenum (small intestine).

Cirrhosis

Advanced stage of chronic liver disease in which healthy tissue is replaced by scar tissue.

Clinical trials

Scientific research testing the efficacy and safety of new drugs and other treatments (e.g., combinations of several drugs, use of a particular therapeutic agent in a new indication). They are carried out to test new diagnostic tests and procedures and the effectiveness of vaccines in disease prevention.

Combination treatment

Treatment of a given disease with two or more drugs.

Complete lack of response to treatment

No reduction in HCV viral load by at least 2 log₁₀ (100-fold) by week 12 of antiviral treatment.

Cure

The disappearance of all symptoms of the disease with the removal of the cause.

D

Droga zakazenia

A mental state manifested by feelings of sadness and helplessness, discouragement, difficulty in focusing attention and inactivity. Changes in the psyche affect daily activities and normal functioning.

Detection level

The smallest amount of a substance (e.g., HCV RNA) that can be detected with a given test.

Direct Antiviral Agent (DAA)

A group of drugs that bind to enzymes key to the proliferation of the hepatitis C virus. There are at least four categories of these drugs: protease inhibitors, polymerase inhibitors (nucleoside and non-nucleoside) and NS5A inhibitors.

DNA (deoxyribonucleic acid)

Drug interactions

A component of living cells that stores genetic information specific to a particular organism (such as eye color).

A reaction that can occur when several drugs are taken together or when drugs are taken with specific foods or herbs. Drug interactions can enhance or diminish the effect of a drug, leading to the appearance of side effects (even potentially life-threatening) or the therapeutic effect is reduced.

Drug resistance

Loss of effectiveness of a drug that previously could control or kill organisms, such as viruses. The emergence of mutations in the genome of a particular microorganism can lead to drug resistance.

DVR

Late virological response. HCV RNA undetectable at week 24 in patients who had detectable RNA at week 12 (see pEVR).

E

EOT (end of treatment)

Refers to the response to treatment at the end of therapy, such as a detectable or undetectable HCV viral load.

Esophageal varices

Dilated blood vessels in the esophagus. The appearance of esophageal varices is caused by obstructed blood flow through the portal vein, such as a result of cirrhosis.

EVR (partial early virological response)

Decrease in HCV RNA levels by at least 2 log₁₀ at week 12 and undetectable HCV viral load at week 24 of treatment (see DVR).

Exposure

Exposure to virus, bacteria, etc.

F

False negative

A negative test result in a person who has a disease or condition investigated by a particular test.

False positive

A positive test result in a person who does not have a disease or condition tested by the test.

Fibroscan

A non-invasive method of assessing liver fibrosis (a type of elastography).

Fibrotest

A non-invasive test used to diagnose liver fibrosis based on analysis of a blood sample.

Flaviviruses

A group of viruses, several of which cause human disease. These include the hepatitis C virus.

G

Gene

The basic unit of heredity. Genes contain hereditary information encoded in the form of DNA (or RNA in some viruses).

Genotype

A pattern of genetic information that is unique to a group of organisms or viruses. Currently, 7 HCV genotypes have been described.

H

HCC

(hepatocellular carcinoma)

Primary liver cancer.

HCV

Hepatitis C virus (hepatitis C virus, HCV) — an enveloped ssRNA-virus in the family Flaviviridae, genus Hepacivirus.

HCV RNA

The genetic material of the hepatitis C virus. Its presence in the human body indicates HCV infection.

HCV viremia

Presence of hepatitis C virus in the blood.

Hemoglobin

A red, iron-containing pigment in red blood cells that enables oxygen transport.

Hepadnaviruses

A family of viruses that includes the hepatitis B virus.

Hepatic encephalopathy

A disorder in the functioning of the brain, the cause of which is liver damage that prevents the removal of toxins, such as ammonia from the blood, which — passing into the brain — cause its abnormal functioning (from minor disorientation to coma, inclusive).

Hepatitis

Inflammation of the liver, which can be caused by infection with hepatotropic viruses, autoimmune processes, alcohol, drugs, among others.

Hepatocyte

Liver cell.

Hepatomegaly

Enlarged liver

Hepatotropic virus

The virus that causes hepatitis. There are primary hepatotropic viruses (e.g. HAV, HBV, HCV, HDV, HEV), for which the liver is the target organ, and secondary hepatotropic viruses, such as cytomegalovirus or Epstein-Barr virus, which can also cause hepatitis — but the liver is not their primary target.

High-risk behavior

Behavior that increases the chance of contracting a particular disease.

High-risk group

A group of people particularly vulnerable to a particular disease.

I

Immune response

A defense reaction of the immune system against an infectious agent (e.g. bacteria, viruses), cancer cells or the body's own tissues (so-called autoimmune diseases).

Immune system

A complex system that is responsible for defending the body against infection.

Inflammation

A reaction of the body characterized by redness, increased heat, pain, swelling and impairment of function.

Inhibitor

A factor that slows or inhibits activity.

Interferon pegylate alpha (PegIFN)

A form of interferon alpha linked to a polyethyleneglycol molecule. Thanks to this combination, it breaks down more slowly than other interferon and maintains a constant level of the drug in the body, so it can be administered once a week.

Interferons

A group of proteins found in the body that form an essential part of the immune system. They have antiviral, anticancer and immune system activating effects. Also produced artificially to treat, for example, hepatitis C or multiple sclerosis.

Interleukin (IL28B)

A variant of interleukin that directs the immune response to HCV infection. Three genotypes of this interleukin have been distinguished: CC, TT, CT. Patients with the IL28B CC genotype are thought to respond better to interferon treatment.

Intra-hospital infection

Infection that occurs during treatment in the hospital.

J

Jaundice

A condition characterized by a yellow coloration of the skin and eyes.

L

Lead in	A 4-week phase of therapy with pegylated interferon and ribavirin, after which boceprevir is added to the treatment.
Liver	The largest organ in the human body. It plays an important role in, among other things, the production of proteins, the metabolism of sugars and fats, and the removal of toxins.
Liver biopsy	A medical procedure that involves the removal of a very small piece of liver tissue for histopathological examination to diagnose or evaluate the progression of liver disease.
Liver elastography	A non-invasive technique for imaging liver elasticity. It is used to assess liver fibrosis.
Liver fibrosis	Liver scarring. It can be mildly aggravated or progressive to cirrhosis.
Liver tests	Blood tests to help check liver function and detect liver damage. They are helpful in diagnosing liver disease.
Liver transplantations	The process of implanting a recipient liver or liver fragment from a donor.

M

Monotherapy	Treatment of a given disease with a single drug.
Mutation	Alteration in genetic material.

N

Necrosis	Death of cells, tissue parts or organs.
Neutropenia	Reduction in the number of neutrophils (neutrophils are a type of white blood cell). Neutropenia can increase the risk of infection.
NS5A inhibitor	A factor that binds to a protein essential for viral replication (non-structural protein 5A).
Nutritionist	A qualified person to help you plan a healthy diet.

O

Oncogene	A factor that contributes to the development of a malignant tumor, such as cancer. Oncogenes include HCV and HBV.
Opportunistic infection	Infection specific to immunocompromised individuals.

P

Partial response to treatment of HCV infection	Decrease HCV viral load by at least 2 log ₁₀ (100-fold) by week 12 of treatment with no disappearance of HCV RNA by the end of treatment.
Plasma	The liquid component of blood.
Platelets	Blood cells responsible for blood clotting.
Polymerase Chain Reaction test (PCR test)	A test to detect genetic material (such as a virus) in blood or tissue.
Polymerase inhibitor	An agent (e.g., a drug) that inhibits a polymerase necessary for viral replication.
Prevention	Prevention of diseases, for example, through vaccination.
Prognosis	Predicting the consequences of a given disease and the chance of a cure.
Protease inhibitor	An agent (such as a drug) that blocks viral replication by interfering with the viral protease enzyme. Protease inhibitors are used in combination with other drugs to treat HIV and HCV infections.
Pruritus	Unpleasant sensations from the skin causing an urge to scratch.

R

Relapse	Reappearance of disease symptoms after an asymptomatic period (remission of disease symptoms). In the treatment of HCV infection, relapse means the reappearance of HCV viral load, even though it was undetectable at the end of treatment.
Remission	Partial or complete resolution or reduction in the severity of disease symptoms. Remission can be spontaneous or influenced by treatment.

Replication of virus	The multiplication of the virus, replicating its genetic material.
Retherapy	See: retreatment.
Retreatment (retherapy)	Re-initiation of treatment due to relapse or ineffectiveness of previous therapy.
RGT (Response-Guided Therapy)	Determine the length of treatment for chronic hepatitis C depending on the level of HCV RNA found during therapy.
Ribavirin	A synthetic antiviral drug that enhances the effectiveness of interferon treatment for chronic hepatitis C.
Risk factor	Factors that increase the chance of developing a particular disease, such as smoking increases the chance of developing lung cancer, and intravenous drug use increases the chance of HIV, HCV, HBV infection.
RNA (ribonucleic acid)	A substance found in every cell that helps read the genetic information encoded in DNA to produce proteins.
Route of infection	The mode of transmission of an infectious agent from a sick individual to a healthy one.
RVR (Rapid Virological Response)	Rapid virologic response, undetectable HCV RNA at week 4 of treatment.

S

Screening	A type of test that is carried out among people without symptoms of the disease in order to detect and treat it early and to prevent serious consequences of the disease in the future.
Sensitization (allergy)	An abnormal immune response to an antigen that does not normally cause an adverse reaction, such as grass pollen. Allergies can manifest themselves as runny nose, rashes, asthma and anaphylactic shock, among other symptoms.
Sexually transmitted disease	Any disease that can be contracted during sexual intercourse.

Side effects	Adverse and unintended effects of the drug.
Splenomegaly	Spleen enlargement.
SVR (Sustained Virological Response)	Sustained Virological Response, undetectable HCV RNA 24 weeks after the end of treatment. It means the disease is cured.

T

Thrombocytopenia	Too low a platelet count.
Toxic	In other words: poisonous, harmful.
Transaminases	Liver enzymes (see alanine aminotransferase and aspartate aminotransferase).
Transfusion of blood	Transfusion of blood or its components for therapeutic purposes.
Transmission	Transmission of infection or disease from one person to another.

U

Ultrasound (USG)	A technique that allows imaging of organs or a fetus using ultrasound waves.
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V

Vaccination	Administration of a vaccine for immunity to a particular infectious disease.
Vertical infection	Transmission of infection from mother to child. Vertical infection can occur intrauterine (during pregnancy), during childbirth and during breastfeeding.
Vertical infection	Recurrence of HCV RNA during therapy in a patient whose HCV viral load was previously undetectable.
Virus	Organic molecules made up of proteins and nucleic acids (DNA or RNA).

**White blood cells
(leukocytes)**

A group of blood cells responsible for immunity.

