HEPATITIS C
Awareness & Treatment Project

Part 2: Hepatitis C Treatment
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These materials have been developed to provide information on hepatitis C infection and treatment. They aim to provide easy-to-understand information on hepatitis C, its modes of transmission, the liver disease that it may cause, and ways to treat and prevent infection.

This information can be used to help those who are candidates for hepatitis C treatment make an informed decision about whether treatment is appropriate for them.

Disclaimer: These materials are not designed to guide individual patient management. Individual patients should consult their personal physicians.

For more information, please contact: .................................................................
1. Why is hepatitis C treatment needed?

Infection with the hepatitis C virus (also called HCV or hep C) is potentially serious and can cause severe harm to the liver. In some people, it can slowly lead to liver cirrhosis (where the liver is scarred down), liver failure (where the liver cannot work properly), liver cancer, and death.

In people who also have HIV, progression of hepatitis C disease is more frequent and more rapid than in people who have hepatitis C alone.

Although hepatitis C affects mainly the liver, it can also harm other organs such as the kidneys, the joints, the thyroid, and others.

Hepatitis C can be treated and cured, and this can stop or slow down the progression of the liver disease.
"Why is hepatitis C treatment needed?"
2. When is treatment needed or not needed?

The appropriate time to start hepatitis C treatment depends a lot on the amount of liver fibrosis or scarring that is present in the liver:

- People who have hepatitis C but no fibrosis or minimal fibrosis do not need to start treatment right away.
- Those with more advanced fibrosis do need to start treatment.
- Unfortunately, those who already have liver failure cannot be treated because there is a high risk that the liver will react badly to the treatment and increase the risk of death.
- Also, people who have developed liver cancer should be treated for their cancer first, and may not be able to receive treatment for hepatitis C in the future.
"When is treatment needed or not needed?"
3. What is the treatment of hepatitis C?

The standard treatment of hepatitis C is a combination of medicines called pegylated interferon (PEG-interferon or PEG-IFN) and ribavirin (RBV).

**PEG-interferon** is a medicine that strengthens the body’s immune system to help it get rid of the hepatitis C virus. Ribavirin slows down the multiplication of the virus so that the body can more easily get rid of it. Ribavirin works best when it is taken with PEG-interferon.

PEG-interferon is given as an injection under the skin, one time per week. Ribavirin is given as 2-3 capsules that are swallowed twice a day, every day, with food.
"What is the treatment of hepatitis C?"
The main goals of treatment are to both cure hepatitis C and stop ongoing damage to the liver. Someone is considered to be cured if no hepatitis C virus can be found in the blood 6 months after completing treatment.
"What are the goals of hepatitis C treatment?"

6 months after completing treatment
5. How long does the treatment take?

PEG-interferon and ribavirin are given for 24 or 48 weeks (6 or 12 months), and the total duration depends on different factors. For example, hepatitis C genotypes 1, 4, 5, and 6 are harder to treat, so people infected with these genotypes always need 48 weeks of treatment.

People who have both hepatitis C and HIV also usually need 48 weeks of treatment. However, if they have genotype 2 or 3, which are easier to treat, they may only need 24 weeks of treatment if their liver fibrosis is not severe and the virus cannot be detected in the blood as early as after 4 weeks of treatment.
"How long does the treatment take?"

Δ8 weeks

24-48 weeks
6. What are the chances of being cured of hepatitis C after treatment?

The infection can be cured in between 30-90% of patients who start treatment, which is the same as saying 3 to 9 people out of 10 can be cured.

The chance of being cured depends on a number of things:

- The first consideration is the genotype of a person’s hepatitis C virus. Genotypes 1, 4, 5, and 6 respond less well to treatment, whereas genotypes 2 and 3 usually respond well. There is also a gene that is common in Asian people (and that people can be tested for) that increases the chances of being cured.
- Another factor is the HIV status. People with HIV generally have a lower chance of being cured with hepatitis C treatment.
- The stage of liver fibrosis makes a difference, because those with cirrhosis do not respond as well.
- The hepatitis C viral load is also important. If the amount of virus in the blood is lower than 800,000 units per milliliter, the chance of responding to treatment is higher.
- In order to increase the chance of cure, it is essential that patients take the treatment as prescribed, which is every day for ribavirin and every week for PEG-interferon.
- It is recommended that patients avoid alcohol, and using drugs during their hepatitis C treatment because this can increase the risk of side effects, which sometimes may lead to stopping treatment.
"What are the chances of being cured of hepatitis C after treatment?"
Are there any situations where hepatitis C treatment should not be taken?

There are conditions and situations where hepatitis C treatment is not safe and should not be taken:

- **Pregnancy of a female patient or the female partner of a male patient:**
  - Ribavirin can cause severe birth defects, so treatment with PEG-interferon and ribavirin cannot be taken by women who are pregnant, or in any woman who is capable of getting pregnant who cannot use a reliable form of birth control during the entire treatment period and for 6 months after it ends.
  - A risk to babies also exists during breastfeeding, so breastfeeding women should not start hepatitis C treatment.
  - Because ribavirin can damage the sperm, hepatitis C treatment should not be started in men who are unable to use reliable forms of birth control with their female partners during the entire treatment period and for 6 months after it ends.
  - Men whose female partners are already pregnant should not receive PEG-interferon and ribavirin, because ribavirin in the sperm may still increase the risk of birth defects in the developing baby.

- **Other forms of liver disease or damage:** Treatment should not be taken by patients who have other causes of liver disease, or those unable to stop heavy alcohol drinking due to a high risk of side effects.

- **Other severe chronic illnesses:** Hepatitis C treatment cannot be taken by people who have ongoing severe psychiatric diseases (like severe depression), or other severe diseases of the eyes, the lungs, the kidneys or the heart, as hepatitis C treatment may worsen these diseases.

- **Low blood cell levels:** Patients who have very low red blood cells (called anemia), white blood cells, or platelets in the blood should also not start hepatitis C treatment.

Doctors usually check for these conditions during the pre-treatment screening process. For people who have both hepatitis C and HIV, patients should be on antiretroviral therapy and have CD4 counts above 200 cells per microliter before starting hepatitis C treatment, and their HIV should be suppressed on viral load testing.
"Are there any situations where hepatitis C treatment should not be taken?"
8. What are the possible side effects of hepatitis C treatment?

Side effects with PEG-interferon and ribavirin are very common. Most patients usually experience at least one type of side effect during treatment. Most of them are not severe, and they can get better over time.

The most common side effects include:
- Flu-like symptoms for example fever, chills, muscle aches, headaches;
- Being tired;
- Skin reactions at the site of PEG-interferon injection such as redness, swelling and itching;
- Skin dryness and itchiness over the body;
- Problems with mood like irritability and low mood;
- Difficulties with sleep;
- Appetite changes such as nausea, loss of appetite, and taste changes;
- Vomiting;
- Weight loss;
- Thyroid problems;
- Anemia; or
- Low white blood cells.

However, serious side effects can occur, and can include:
- Mental health issues, such as depression, being anxious, and in rare instances having thoughts of suicide;
- Severe anemia;
- Severe drop in the number of white blood cells, which increases the risk of other infections;
- Severe drop in amount of platelets in the blood, which increases the risk of bleeding; and
- Heart problems.
"What are the possible side effects of hepatitis C treatment?"
9. Can side effects be prevented or reduced?

There are ways to reduce the side effects of hepatitis C treatment. This can help patients feel better, and also increase the chances of adhering to treatment and being cured of hepatitis C:

- People on hepatitis C treatment should keep a record of the side effects they experience and report them to their doctor at each visit. Side effects are often what make people want to skip some medicine doses or stop treatment, but most side effects can be managed effectively if treated before they become severe.
- The most common side effects of PEG-interferon generally occur within 24-48 hours after the injection. So patients should try to select a day and time of injection that will have less of an impact on their regular activities.
- If patients experience flu-like symptoms like fever, chills, or muscle aches after the first injection, they can take paracetamol before future injections, and again every 6 to 8 hours after the injections, if necessary.
- Patients should change the site of the PEG-interferon injection on their body every week, and they should not inject into an area that is irritated, or red.
- It is important for people who have had depression in the past to let their doctors know about it, in case they may need to take an antidepressant before starting PEG-interferon.
- For some side effects, the doctor may discuss reducing the dose, or even temporarily stopping one or both medicines. But patients should not change the doses of their medicines or stop them on their own without a recommendation from the doctor.
- However, some patients cannot tolerate the side effects of hepatitis C treatment and may have to stop their medicines.

Patients should contact their doctor or nurse immediately or go to the nearest emergency department for any symptoms like breathlessness, chest pain, dark urine, confusion, swelling around ankles or abdomen, rapid weight loss, or thoughts about harming themselves or others.
"Can side effects be prevented or reduced?"

- Take Paracetamol for flu-like symptoms
- Change the site of the PEG-Interferon injection
- Inform doctors of any serious side effects
Can there be problems with taking hepatitis C treatment together with other medicines?

There are some medicines for other conditions that can interact with the medicines for hepatitis C treatment.

• **Hepatitis C treatment and antiretroviral medicines (ARVs) for HIV:**
  Some antiretrovirals should not be taken with hepatitis C medicines, or should be avoided as much as possible:
  - It is strictly forbidden to take didanosine, also called ddI, at the same time as PEG-interferon and ribavirin, as the risks of severe side effects are very high.
  - Stavudine, also called d4T, and zidovudine, also called AZT, should be avoided as much as possible, as the risks of side effects are also increased.

  Tenofovir and abacavir are generally safe to take at the same time as hepatitis C treatment.

• **For people who take methadone,** there may be some minor interactions with hepatitis C treatment. Those on methadone should tell their doctor if they feel like the methadone is not working the same after they start hepatitis C treatment.

  There are other medicines that can also interact with hepatitis C treatment. For this reason, patients should always ask their doctor about any new medicines that they want to take to make sure they do not interact with PEG-interferon and ribavirin. That includes herbal and other traditional medicines.
"Can there be problems with taking hepatitis C treatment together with other medicines?"

Adherence to treatment is essential to increasing the chances of being cured. Treatment is more likely to be successful if patients:

- Do not miss any PEG-interferon injections or doses of ribavirin;
- Always take their medicines at the right time;
- Take ribavirin with food; and
- Store medicines as recommended by the clinic staff.
  PEG-interferon should be kept in a refrigerator (but not in a freezer).

There are things patients can do to help them remember to take their medicines on time:

- Select a regular day and time that is convenient for the weekly PEG-interferon injections.
- Put an alarm on a mobile phone or a clock to provide reminders for when to take the weekly injection and the morning and evening doses of ribavirin capsules.
- Ask a family member or a friend to provide occasional reminders about taking the medicines.
"The importance of adherence to hepatitis C treatment."
12. What if people forget to take doses of their medicines?

If patients miss a dose of PEG-interferon:
- They should get the missed injection as soon as possible during the same day or the next day.
- If this happens, the regular PEG-interferon schedule should not be changed and the next injection should be taken on the usual day the following week.
- However, if several days go by after missing a dose, patients should check with the clinic about what to do.
- They should not double the next dose or take more than one dose a week without talking to the doctor.

If patients miss a dose of ribavirin:
- If within six hours of the scheduled dose, they should take the missed dose as soon as possible.
- But if more than 6 hours have passed, they should just take the next dose of ribavirin as scheduled, and not double that dose.

If patients vomit within 60 minutes after taking ribavirin, another dose should be taken as soon as possible.
If vomiting occurs a second time, patients should not take an additional dose, and should call the clinic.
"What if people forget to take doses of their medicines?"
At the beginning of the treatment, patients may need to come to the clinic every week to receive their PEG-interferon injections, so that a nurse can further demonstrate how to prepare the medicine and how to inject it. But as soon as patients are comfortable with the process, they can take the PEG-interferon back home to give themselves the injections.

Patients need to come to the clinic regularly for a physical examination and laboratory tests to see how their body is responding to the treatment. Patients need to come after 2 weeks of treatment, and then after 4 weeks of treatment, and then every 4-8 weeks until the treatment course is completed. Starting at the 4th week, the doctor will do a hepatitis C viral load test to see if the treatment is working to control the infection. If the treatment is not working, the doctor might stop the treatment; it is not worth continuing the treatment if the virus has not decreased to a certain level by 12 or 24 weeks of treatment.

But if the hepatitis C viral load tests look encouraging, patients will continue treatment as planned. Six months after completing treatment, the doctor will do another hepatitis C viral load test to see if the hepatitis C has been cured.

It is very important that patients come to the clinic for all their appointments. Patients should also feel free to contact the clinic staff with questions, or come for a visit even if they do not have appointment.
"What kind of follow-up do patients need during hepatitis C treatment?"

Meet doctor and nurse regularly throughout the 6-12 months treatment duration.
14. General precautions

PEG-interferon must be kept away from direct sunlight and stored in a refrigerator (2-8°C), but never frozen. Those who do not have access to a refrigerator can speak with the clinic staff to discuss whether they can come to the clinic for their weekly injections.

- PEG-interferon should be removed from the refrigerator for about 15 minutes before use in order to come to room temperature before injection (~25°C).

Whether or not people can be cured of their hepatitis C infection, they can improve the health of their liver by maintaining a healthy life style, including:

- Eating nutritious foods;
- Drinking at least 2-3 liters of water a day;
- Getting regular exercise;
- Getting enough sleep;
- Avoiding alcohol and drugs, and quitting or cutting back on smoking.

Even if patients can clear the virus, they can get hepatitis C again. People can avoid being re-infected by:

- Not sharing any needles, razors, or injecting equipment with others;
- Always using condoms when having sex;
- Making sure that tattoos and piercing are done with single-use or sterilized equipment.
"General precautions"
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