# Other Complications of Hepatitis C

Although hepatitis C is primarily a liver disease, sometimes the virus causes other medical problems. These are called extrahepatic manifestations because they occur outside of the liver. Although medicine has not discovered all the ways hepatitis C affects the body, here are some extrahepatic manifestations that we know about:

## Cancer

Compared with people who do not have hep C, people with HCV have an increased risk of many cancers, including non-Hodgkin lymphoma, and prostate and renal cancers. Risk of cardiovascular disease and stroke are higher in people with HCV than in those without the virus.

## Insulin Resistance and Type 2 Diabetes

Insulin resistance is a condition in which the body produces insulin but does not use it effectively. As a result, glucose may build up in the blood rather than being absorbed by the cells, leading to type 2 diabetes. Several studies have shown an increased risk for insulin resistance and type 2 diabetes in people with HCV infection. A recent study cast doubt on this correlation, but many experts advise monitoring HCV patients for signs of insulin resistance or type 2 diabetes.

## Kidney (Renal) Disorders

The risk of chronic kidney disease is increased in hepatitis C patients. Other kidney diseases associated with HCV include:

- Cryoglobulinemia is a disorder caused by abnormal proteins (cryoglobulins) that clump together in the blood. These proteins can accumulate in the small blood vessels, particularly in the kidneys. Blood flow is restricted, which damages the kidneys.
- Membranoproliferative glomerulonephritis is a disease in which the body’s immune system attacks healthy kidney cells, injuring the glomeruli (the kidneys’ filters).
- Membranous nephropathy is a disease that also affects the glomeruli. The glomeruli become inflamed and thickened, which reduces kidney function.
- Polyarteritis nodosa is an autoimmune disease that affects the arteries. Kidney failure may

result.

Compared to people without kidney disease, the choice and dose of HCV medications may be different for those with impaired renal function. Click here to view recommendations from the American Association for the Study of Liver Diseases (AASLD) and the Infectious Diseases Society of America (IDSA) for HCV treatment for those those with renal impairment. HCV treatment recommendations for kidney transplant patients are here.

Rheumatic Diseases

People with HCV have a higher-than-average risk of rheumatic problems, such as pain in the joints (arthritis), muscles (myalgia) and connective tissue (material in the body that supports and binds parts of the body). This is likely due to an overactive immune system that is trying to suppress hepatitis C. Rheumatic problems can be difficult to diagnose, so if you have rheumatic symptoms, ask for a referral to a rheumatologist. HCV-related arthritis is so clinically similar to rheumatoid arthritis (RA) that it can be difficult to differentiate true RA from HCV patients with positive rheumatoid factor but without RA.

Interferon therapy may exacerbate or trigger rheumatic problems, and is associated with the development of autoimmune diseases, such as autoimmune thyroiditis. Studies show that HCV-related rheumatic symptoms generally resolve with successful HCV treatment results.

Here are some rheumatic conditions that HCV patients may be further diagnosed with:

- Cryoglobulinemia may affect organs in addition to the kidneys, including the skin and peripheral nerves. “Cryo” is a disease in which proteins in the blood clump together and can damage blood vessels. There are many forms and varying severities of cryoglobulinemia, and in the case of hep C, HCV particles are deposited on the walls of small vessels, causing inflammation. Mixed cryoglobulinemia is the most common type of cryoglobulinemia associated with HCV. Patients with cryoglobulinemia may experience purpura (red or purple skin discolorations), severe fatigue, muscle aches and joint pain.
- Peripheral neuropathy is a type of nerve damage that usually affects the feet or hands, but may affect the legs or arms. Symptoms include numbness, tingling, burning or other types of pain to the extremities. Peripheral neuropathy is associated with cryoglobulinemia, but may occur in hepatitis C patients who do not have it.
- Raynaud’s phenomenon is a disorder in which blood flow is reduced to the fingers and toes. Triggered by cold or stress, Raynaud’s causes pain and numbness in the fingers or toes, and the

extremities may whiten. Raynaud's is also associated with cryoglobulinemia, but may occur in hepatitis C patients who do not have it.

- Sicca syndrome is an autoimmune disease that causes dry eyes, dry mouth and arthritis-like pain. Also called Sjögren's, sicca syndrome is associated with cryoglobulinemia, but may occur in hepatitis C patients who do not have it.

Skin Diseases

A number of dermatological conditions have been associated with hep C. Porphyria cutanea tarda and lichen planus are probably the most discussed.

- Porphyria cutanea tarda (PCT) may occur when there is a deficiency of the enzyme uroporphyrinogen decarboxylase, causing excess amounts of porphyrins to build up in the liver. Blisters develop on sun-exposed skin, such as the hands and face.
- Lichen planus causes bumps on the skin, mouth, and genitals that are usually shiny, firm and reddish-purple. The bumps may be interspersed with white lacy lines. Lichen planus may be itchy.

Multiple studies have found that a successful HCV treatment outcome will clear up HCV-associated extrahepatic manifestations.

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