

There are three main types of heart inflammation which include **endocarditis**, **myocarditis**, and **pericarditis**. Endocarditis is inflammation of the inner lining of the heart's chambers and valves. Myocarditis is inflammation of the heart muscle. Pericarditis is inflammation of the tissue that forms a sac around the heart. In all three cases, the body's immune system causes inflammation in response to an infection or some other trigger.

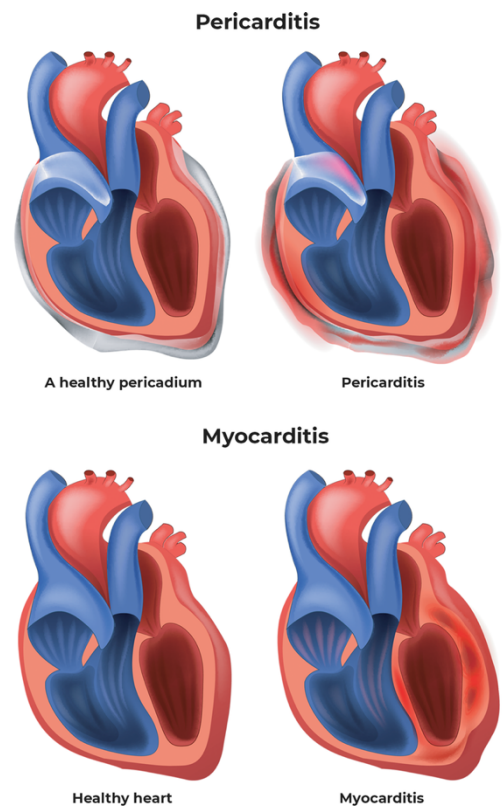
Myocarditis, Endocarditis, and Pericarditis

3.1 million cases of myocarditis were diagnosed in 2017. Acute myocarditis mostly does not respond to symptomatic medication for heart failure, and mortality is high in spite of treatment. The long-term disease course depends on the pathogen, the extent and type of inflammation, and the initial injury to the myocardium. Myocarditis has been reported to be a major cause of sudden and unexpected death in infants, adolescents, and young adults. There are many undiagnosed cases of COVID-19 myocarditis, especially in young adults.

Myocarditis is the inflammation of the myocardium that affects the heart muscles and the electrical system, reducing the heart's ability to pump, causing abnormal heart rhythms. Inflammatory infiltrates such as lymphocytes, neutrophils, eosinophils, and granulomas have all been identified in these patients. Along with inflammation, there is also necrosis of cardiac myocyte cells. The cause of myocarditis is usually due to a viral infection such as adenovirus (common cold), coronavirus (COVID-19) Coxsackie B viruses, enteroviruses, Epstein-Barr virus (EBV), hepatitis B and C, parvovirus, and herpes simplex virus. Although viruses are the most common cause, myocarditis can also occur due to other types of infections such as a bacterial infection, parasites, or fungal infection. Pathophysiology remains a subject of research but the potential mechanism is that these infectious agents could cause direct cardiomyocyte injury. Chronic myocarditis can cause dilated cardiomyopathy, or an enlarged heart which leads to heart failure. Symptoms can vary and some patients may not exhibit any symptoms while others may experience heart murmur, premature heartbeat, shortness of breath, chest pain or tightness, flu-like symptom and poor sleep. Chronic inflammation of the heart can cause scar tissue formation in myocardium as well as in the sinus node and arteries causing angina, chest pain and heaviness, arrhythmia and A-fib as well as breath shortness. The condition eventually will lead to congestive heart failure. Symptoms of heart failure include fatigue, dyspnea, and edema of the legs and feet.

Endocarditis is the inflammation of the inner lining of the heart chambers and valves, the endocardium. It is usually caused by an infection from pathogenic microorganisms other than viruses that lodge in the heart valves and infect the endocardium. Such microorganisms include bacteria, fungi, and intracellular parasites. These types of pathogenic microorganisms typically spread from the mouth or another part of the body and enter into the bloodstream where they travel to and attach to abnormal or damaged valves or tissues of the heart.

Deformity of the heart valves due to rheumatic heart disease, mitral valve prolapses, and aortic stenosis with uneven surfaces increases the risk greatly because the germs can adhere to the uneven surface more easily. The heart valves are made of cartilage and do not have a blood supply and therefore have poor protection from the immune system rendering them vulnerable to all kinds of infections.



Depending on the virulence of the microorganism, the manifested symptoms usually cover a wide range of symptoms and aren't always severe. Symptoms may develop slowly over time. In the early stages, the symptoms are similar to many other illnesses including the flu or general infections such as pneumonia and many cases go undiagnosed. In acute cases, patients may experience symptoms that appear suddenly including pale skin, fever, chills, night sweats, muscle or joint pain, nausea, decreased appetite, full or pressure feeling in the upper-left part of the stomach. In severe cases, symptoms include swollen feet and legs, shortness of breath, cough, heart murmur, blood in the urine, and broken blood vessels that appear as red spots on the chest or on the whites of the eyes.

Chronic heart inflammation can also affect the lymph drainage system of the heart causing accumulation of waste toxins and reduced heart function. Patients may experience symptoms of heart murmur, chest pain and tightness, dizziness, exhaustion and laziness to talk.

Pericarditis refers to the inflammation of the two thin layers of a sac-like tissue that surround the heart, called the pericardium. The pericardium, separated from the heart by a small amount of fluid, holds the heart in place and helps with heart function. In pericarditis, the inflammation can cause the tissue to rub up against the heart which causes chest pain, a common symptom. Pericarditis can be either acute or chronic and can be caused by viral, bacterial, or fungal infections. In reoccurring pericarditis cases, it is usually the result of an autoimmune condition that causes systemic inflammation such as lupus or rheumatoid arthritis.

Other health disorders can also cause pericarditis such as kidney failure or other chronic heart conditions. In these cases, pericardial effusions can occur in which there is a gradual or sudden increase of fluid accumulation in the pericardial sac. The amount of liquid can increase from 30-50mL to as large as 1000mL. Fluid accumulation can cause symptoms of chest pain and heaviness, lightheadedness, heart palpitations, difficulty breathing when lying down, coughing, and fatigue.

Chronic pericardial inflammation can cause scar tissue formation as well as degeneration with a loss of elasticity of the pericardial sac. This can cause the attenuation of the heart contraction resulting in reduced cardiac output. Patients may experience symptoms of chest tightness, difficulty breathing, cold sweat, irritability and insomnia.

Heart Inflammation and COVID-19

A growing number of studies suggest many COVID-19 survivors experience some type of heart damage, even if they didn't have underlying heart disease and weren't sick enough to be hospitalized.

Nearly one-fourth of those hospitalized with COVID-19 have been diagnosed with cardiovascular complications, which have been shown to contribute to roughly 40% of all COVID-19-related deaths.¹ Dr. Gregg Fonarow, chief of the division of cardiology at the University of California, Los Angeles has commented that "there is recognition that even some of those COVID-19 patients not hospitalized are experiencing cardiac injury.¹ This raises concerns that there may be individuals who get through the initial infection, but are left with cardiovascular damage and complications."

Another JAMA Cardiology study used cardiac MRIs on 100 people who had recovered from COVID-19 within the past two to three months. Researchers found abnormalities in the hearts of 78% of recovered patients and "ongoing myocardial inflammation" in 60%.² The same study found high levels of the blood enzyme troponin, an indicator of heart damage, in 76% of patients tested, although heart function appeared to be generally preserved. Most patients in the study had not required hospitalization.²

Heart inflammation triggered by COVID-19 vaccines has also been a concern, especially in younger people. In the past few months, some cases of myocarditis, have been recorded following the use of the Pfizer and Moderna vaccines.³ This has prompted concern particularly in the US and Israel, as these two countries have led the way in vaccinating younger people. The reaction happens most often in men and boys aged under 30 after their second dose, and is usually seen within 10 days.³ Although the cause is unknown, animal studies have found testosterone may lead to the inflammation. This type of myocarditis is acute and typically leads to damage to the myocardial cells.

Wellness Recommendation

Chronic Myocarditis and Endocarditis: The wellness recommendation includes CV, B-2, Qi Booster, and Myogen. Wei Lab's Myogen formula nurtures heart Yang and helps clear cold damp in the heart, and remove the accumulated metabolic wastes in the heart. Used in combination with CV, B-2 and Qi Booster, it helps clear the myocardium and endocardium inflammation, improve the strength of the heart and resume the normal heartbeats. If patients also have an arrhythmia, PaceKeeping is also recommended. PaceKeeping nurtures Heart Qi and helps stabilize heart rhythm. Patients should experience symptom improvement in 3 days. For mild and moderate case, 4-6 weeks of the protocol is required for significant improvement and sustained results. For severe cases, after the initial 4-6 weeks of protocol, it is recommended to have an additional 2-3 months of protocol with Myogen and Myonin in combination with PaceKeeping or other formulas depending on the individual's condition. Myonin nurtures heart Yin to help repair myocardium damage.

Acute viral myocarditis: For heart inflammation brought on by viruses such as **adenovirus**, COVID-19 or the vaccine, Myonin is recommended in combination with Myogen and PaceKeeping. Myonin formula is used for viral myocarditis that is caused by Heart Heat which results in a Yin deficiency condition. Myonin helps clear the heart Heat and has antiviral effects. It also nurtures heart Yin and helps repair the cardiac muscle damage as a result of the infection. For this type of acute viral myocarditis, Myogen, Myonin and Pacekeeping will be the core treatment which should be used together with CV, B-2 and Qi Booster in the beginning. B-2 and Qi Booster can be stopped after the 1st month. CV use is dependent on if the patient needs support of the coronary artery. Patients can experience symptom improvement in 3 days. For mild and moderate case, 4-6 weeks of protocol is required. For severe cases, after the initial 4-6 weeks of protocol, it is recommended to have an additional 2-3 months of protocol with Myogen and Myonin in combination with PaceKeeping or other formulas depending on the individual's condition.

Additional Recommendations: For chronic myocarditis caused by a chronic viral infection such as Coxsackie B viruses, enteroviruses or Epstein-Barr virus (EBV), Amber is also recommended to clear the virus from the heart. For heart inflammation caused by mycobacterial infection, Kardinin is also required to help clear the infection. Radix Astragali, an herb used in Kardinin, has been shown to reconcile impaired myocardial contractile function, a symptom in myocarditis, as well as decrease myocardial inflammation and fibrosis induced by myocarditis. Anginen is also required in combination with the Kardinin if there is scar formation in the heart which causes symptoms of angina. For endocarditis caused by gram-negative bacterial infection M-2 is also recommended to clear the gram-negative germs from the heart. For endocarditis caused by fungal infections, M-F is also recommended to clear the fungus from the heart.

Pericarditis: Myogen in combination with CV, B-2 and Qi Booster is recommended to help clear the inflammation and remove toxic irritants in the pericardium. If patients also have an arrhythmia, PaceKeeping is also recommended. Patients can experience symptom improvement in 1 week. 4-6 weeks of protocol is recommended.

Pericardium Effusion: If the pericarditis has caused pericardial effusion, Pericardum and Xcel Plus are also recommended. Pericardum helps remove excess fluids as well as the toxins and waste from the pericardial space. Xcel Plus supports the kidneys to secrete the large molecular weight released from the pericardial fluid. Patients can experience symptom improvement in 1 week. 4-6 weeks of protocol is recommended.

Pericardium Scarring and Degeneration: If there is scar tissue formation and degeneration of the sac tissue with loss of elasticity and reduced cardiac output, Cardion and Cardiogen in combination with Myogen are recommended. Cardion helps dissolve the scar tissue in the pericardial sac. Cargion helps nurture the pericardial sac to reverse its degeneration, resume its elasticity and increase cardiac output. Patients can experience symptom improvement in 1 week. 6 weeks to 3 months of protocol is recommended depending on the severity of the condition.

Protocol Summary

Cause of Heart Inflammation	Product Recommendation
Myocarditis, Endocarditis, and Pericarditis	Myogen, B-2, Qi Booster, CV Optional: PaceKeeping
Chronic viral infection	Amber
Mycobacterial Infection	Kardinin, Anginen
Gram-Negative Bacterial Infection	M-2
Fungal Infection	M-F
Acute viral infection	Myonin, Myogen, PaceKeeping
Poor lymphatic drainage	Dragon-R
Pericardium Effusion	Pericardum, Xcel Plus
Pericardium Scarring	Cardion
Pericardium Degeneration	Cargiogen

Selected Case Study

Case 1: Successful Treatment of Upper Respiratory Infection with Myocarditis Complication

Ronald Mullen, AP, Stuart, Florida

Dr. Mullen had a 70-year-old male patient with an acute upper respiratory infection. Using his own formulas, Dr. Mullen helped the patient clear the cough. However, the patient experienced low energy, had difficulty breathing cold air, and had edema in the lower legs.

The patient used Soup A to strengthen the lungs, Java to strengthen the spleen, and LC Balancer to improve microcirculation for one and a half weeks but did not see any results. Dr. Mullen examined the heart, and an electrocardiogram showed signs of arrhythmia. Dr. Mullen suspected the patient may have chronic myocarditis or pericarditis since the patient also experienced extreme fatigue. Dr. Mullen recommended Myogen to strengthen heart function and PaceKeeping at a half dose to support the electrical function of the heart. After just two days the patient had already noticed improvement.

Dr. Mullen also recommended Qi Booster to improve blood flow to the heart. Although the patient had experienced improvement initially, they reported that their symptoms were reoccurring. Dr. Mullen recommended a combination of B2 and Qi Booster to clear the waste accumulation that was saturating the muscles surrounding the heart. After two more weeks of treatment the patient reported that he was doing much better and had not experienced any further relapse in symptoms.

References:

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3. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/myocarditis.html>