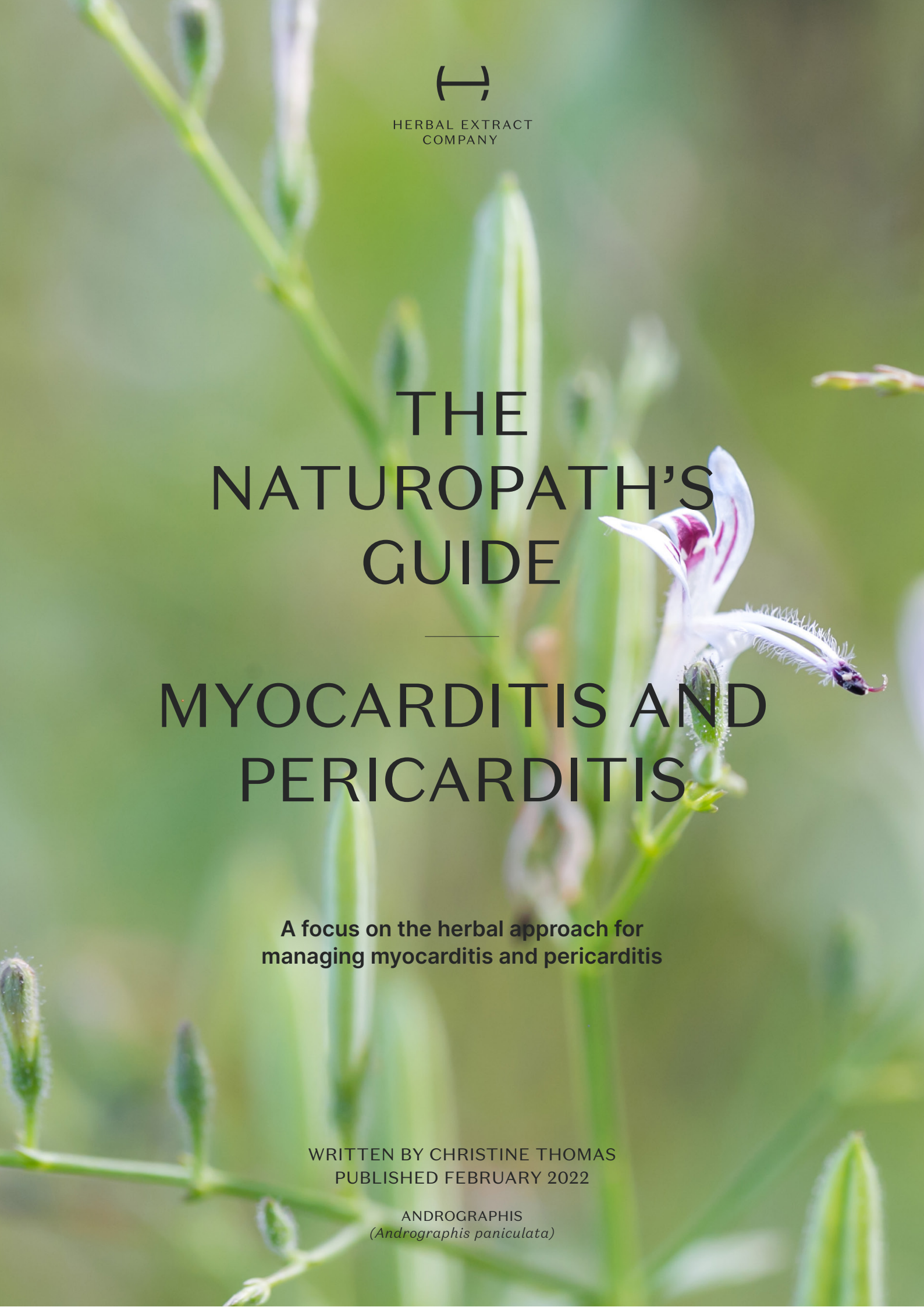

HERBAL EXTRACT COMPANY

THE NATUROPATH'S GUIDE

MYOCARDITIS AND PERICARDITIS

A focus on the herbal approach for managing myocarditis and pericarditis

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ANDROGRAPHIS
(Andrographis paniculata)

MYOCARDITIS AND PERICARDITIS

Myocarditis and pericarditis are inflammatory conditions that affect the heart. In both cases the body's immune system causes inflammation in response to an infection or some other trigger

Many things cause heart inflammation. Common causes include viral or bacterial infections; medical conditions, such as autoimmune diseases, that damage the heart and cause inflammation; and other factors such as medications. Sometimes the cause is idiopathic, or unknown. Inflammation of the heart often causes chest pain which can be misdiagnosed as a heart attack.

Condition Overview

The suffix '*itis*' indicates inflammation of a specified part of the body. The human heart has three layers. Pericarditis is inflammation of the outer layer of the heart, the pericardium, which is the sac-like tissue layer that surrounds the heart. Myocarditis is inflammation of the middle layer, the myocardium, which is the heart muscle. It is not unusual to have a patient present with both pericarditis and myocarditis (myopericarditis). Endocarditis is a third type of heart inflammation which affects the inner lining of the heart's chambers and valves. It is a rare condition which originates differently to pericarditis and myocarditis and will not be covered in this paper. Its most common cause is a systemic infection of bacteria, fungi or other germs that spread through the body using the bloodstream. Treatment is usually antibiotics.

Myocarditis

The myocardium is a specialised type of muscle tissue that forms the heart. This cardiac muscle tissue, which contracts and releases involuntarily, is responsible for keeping the heart pumping blood around the body. Myocarditis can affect small or large sections of the heart muscle. This inflammation can affect the electrical system of the heart making it harder for the heart to pump blood, which in turn can cause blood flow to be reduced in certain parts of the body. This may lead to blood clots developing in the heart and can trigger a stroke or heart attack. Sometimes scar tissue (fibrosis) can develop in the myocardium which increases the risk for long-term complications. Myocarditis can affect both children (called paediatric myocarditis) and adults, including people who have no prior history of heart disease.

Pericarditis

Peri means "all around". The pericardium is a flexible membrane, consisting of two layers divided by fluid, which surrounds the heart. The role of the pericardium includes acting as an anchor for the heart to keep it in place and protect it from infection and friction. In pericarditis this membrane is swollen and irritated. Pericarditis is the most common disease involving the pericardium. It can be categorised as acute, subacute, chronic and recurrent.

Early diagnosis and treatment of pericarditis usually reduces the risk of the long-term complications which include:

Pericardial Effusion: Increased fluid accumulation within the pericardial sac which can lead to more serious complications.

Chronic Constrictive Pericarditis: In some people with chronic pericarditis permanent thickening and scarring of the pericardium can develop, which prevents the heart from filling and emptying properly. This unusual complication often leads to severe swelling of the legs and abdomen and shortness of breath.

Cardiac Tamponade: A life-threatening condition which can develop when too much fluid collects in the pericardium. Excess fluid puts pressure on the heart and does not allow it to fill properly. Less blood leaves the heart, causing a dramatic drop in blood pressure. Cardiac tamponade requires emergency treatment.

Viral infections are the most common cause of myocarditis and pericarditis. These may include coronavirus disease 2019 (COVID-19), the common cold, influenza, hepatitis B and C and herpes simplex virus. Viruses may infect the heart muscle tissue causing acute or chronic immune responses from the body.

Other causes of myocarditis include:

- Bacterial infections such as diphtheria and the tick-borne bacterium responsible for Lyme disease.
- Fungi such as yeast infections.
- Parasites such as Trypanosoma cruzi that leads to Chagas' disease.
- Autoimmune diseases such as rheumatoid arthritis and lupus erythematosus.
- Hypersensitivity and toxic reactions to medications including as a side effect of the messenger RNA (mRNA) COVID-19 vaccines Comirnaty (Pfizer) and Spikevax (Moderna), drugs that treat cancer, antibiotics, such as penicillin and sulphonamide drugs, some anti-seizure medications and some illegal substances, such as cocaine.

Other causes of pericarditis include:

- Bacterial (such as tuberculosis), fungal and protozoal infections.
- After a heart attack.
- Autoimmune disorders such as lupus or rheumatoid arthritis.
- Heart or chest injuries.
- Kidney failure.
- Cancer.
- Radiation therapy.
- Multiple medications have been implicated in drug-induced pericarditis, with a long list of possible culprits. This includes as a side effect of the mRNA COVID-19 vaccines Comirnaty (Pfizer) and Spikevax (Moderna), hydralazine (a medication used to treat high blood pressure and heart failure), procainamide (a medication used for the treatment of cardiac arrhythmias), high-dose radiation associated with treatment of certain cancers such as Hodgkin's lymphoma, antibiotics such as penicillin, antidepressants such as tricyclic antidepressants, benzodiazepines, known as tranquilizers, such as lorazepam and diazepam, diuretics such as furosemide and hydrochlorothiazide, heart medicines such as amiodarone, hydralazine, methyldopa and procainamide, psychiatric medicines such as clozapine and lithium, seizure medicines such as phenytoin and weight-loss medicines such as fenfluramine-phentermine.
- Often the cause of pericarditis cannot be found.

Although myocarditis and pericarditis were not observed as adverse events in COVID-19 vaccine trials there have been numerous reports of suspected cases following vaccination in the general population. In Australia, there is a link between the mRNA COVID-19 vaccines Comirnaty (Pfizer) and Spikevax (Moderna) and the rare side effects of myocarditis and pericarditis. While this is reported as rare there are studies suggesting vaccine adverse event underreporting. In Australia, this side effect is particularly seen in males under 30 years old after the second dose of mRNA vaccine. According to research the symptoms of myocarditis or pericarditis typically appear within one to five days of mRNA vaccination. However, the maximum

follow-up time in most studies appears to only be a 28-day risk window. This is assuming that the adverse events under consideration are unlikely to be related to exposure after 28 days. There does not appear to be data for people who developed myocarditis, or myopericarditis, beyond 28 days from their vaccination date. This is despite the fact that statistics for people who are likely to develop myocarditis as a complication of COVID-19 have a 90 day risk window. People who experience any of these symptoms after having an mRNA COVID-19 vaccine should seek prompt medical attention: chest pain, pressure or discomfort in the chest, irregular, skipped heartbeats or 'fluttering', fainting, shortness of breath, or pain when breathing.

A research summary paper titled "Cardiovascular and haematological events post COVID-19 vaccination: A systematic review" published on 29 December 2021, said many adverse events have been reported post COVID-19 vaccinations. "Vaccinations at their core are made with the intention of stimulating the immune system. This may cause unintended activation or modulation of the immune system which can cause such things as cardiac injury or even development of antibodies against platelets; mechanisms which have been proposed to explain the reported adverse events. We are now experiencing the same thing with the COVID-19 vaccines." The researchers concluded that more studies are needed to assess the possible association between the COVID-19 vaccines and the reported adverse cardiovascular and haematological events.

The largest study to date of acute cardiac outcomes after COVID-19 vaccination or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection (the virus that causes COVID-19), the first to compare the risk of cardiac events between different vaccine products and SARS-CoV-2 infection and the first to investigate the association between cardiac events, was published by researchers from several universities in the United Kingdom, including Oxford University, on 14 December 2021 titled "Risks of myocarditis, pericarditis, and cardiac arrhythmias associated with COVID-19 vaccination or SARS-CoV-2 infection".

They had this to say: "Clinical trials of COVID-19 vaccines were underpowered to detect the rare adverse events that are important for risk–benefit evaluations and to inform clinical practice postvaccination. Therefore, identifying such rare adverse events is now a global scientific priority." A reference in the study said: "Although the mechanisms for development of myocarditis are not clear, molecular mimicry between the spike protein of SARS-CoV-2 and self-antigens, trigger of pre-existing dysregulated immune pathways in certain individuals, immune response to mRNA, and activation of immunologic pathways, and dysregulated cytokine expression have been proposed."

The study included people aged 16 or older vaccinated for COVID-19 in England between 1 December 2020 and 24 August 2021 to investigate hospital admission or death from myocarditis, pericarditis and cardiac arrhythmias in the one to 28 days following adenovirus or messenger RNA-based vaccines or a SARS-CoV-2 positive test. They found increased risks of myocarditis associated with the first dose of Vaxzevria (AstraZeneca) and Comirnaty (Pfizer) and the first and second doses of the Spikevax (Moderna) vaccine over the one to 28 days postvaccination period, and after a SARS-CoV-2 positive test. There is currently limited available data on the long-term outcomes of people who have had myocarditis and/or pericarditis after an mRNA COVID-19 vaccine.

Common Symptoms

Myocarditis

Symptoms do not always occur and depend on the cause and severity of myocarditis. They typically develop about one or two weeks after someone has a viral infection or another illness. Symptoms are a sign that inflammation and damage has spread to the heart and is interfering with normal circulation. When symptoms occur they can be similar to those caused by a heart attack such as chest pains, trouble breathing and heart palpitations.

The symptoms are:

- Chest pain and discomfort.
- Heart palpitations.
- Fainting.
- Fatigue.
- Abdominal pain.
- Fever.
- Loss of appetite.

- Shortness of breath.
- Exercise intolerance, or no longer being able to exercise.
- Swelling of feet or legs.
- Weakness.

Pericarditis

Pericarditis usually develops suddenly and may worsen quickly. The symptoms can be similar to those of a heart attack, pneumonia, pulmonary embolism (blood clot in the lung), collapsed lung, pleurisy or costochondritis (inflammation of the cartilage in the rib cage). Symptoms can last up to several months but typically go away within about three months. Some people will deal with symptoms for years (chronic pericarditis) and experience flare-ups in symptoms occasionally as the inflammation gets better, but then worsens again.

The symptoms are:

- The most common symptom of pericarditis is sharp, piercing chest pain in the centre or left side of the chest. It gets worse with breathing and feels better with sitting up and leaning forward.
- Heart palpitations.
- Fever.
- Shortness of breath.
- Weakness or fatigue.
- Nausea.
- Dry cough.
- Swelling of the legs or abdomen.

Risk Factors

Age

While cardiovascular conditions are often associated with elderly populations, myocarditis and pericarditis occur more often in young adults. Pericarditis also commonly affects middle-aged adults. In Australia, pericarditis and myocarditis after mRNA COVID-19 vaccines have been reported most commonly in males under 30 years of age.

Sex

Heart inflammation from myocarditis and pericarditis is more common in men than in women, except when caused by autoimmune diseases, such as lupus and rheumatoid arthritis, which are more common in women. Pericarditis occurs twice as often in men as in women. The reason why they occur more commonly in men may be a consequence of different effects of sex hormones on the immune system.

Genetics

While not being genetic diseases, genetics play a role in the risk of developing heart inflammation because genes may be partly responsible for how the body responds to infection and inflammation. Certain inherited conditions can affect the risk for myocarditis and pericarditis such as familial Mediterranean fever, or tumour necrosis factor receptor-associated periodic syndrome. These rare conditions affect how the body controls inflammation.

Environment

Several environmental toxins may cause myocarditis including exposure to heavy metals such as copper, iron and lead, or rarely the venom from spider or snake bites. Chagas disease, common in Latin America, can cause acute and chronic myocarditis. It is caused by a parasite that is spread by certain types of insects.

Lifestyle

Certain lifestyle choices raise the risk for myocarditis including drinking excess alcohol, which may cause inflammation of the myocardium and could lead to reduced heart function and heart failure.

Medical Condition

Some medical conditions can increase the risk of myocarditis and pericarditis. These include:

- **Cancers:** such as advanced lung and breast cancer or lymphoma. Medicines used to treat these types of cancer can cause myocarditis or pericarditis.
- **Diabetes** due to increased risk of infections.
- **HIV/AIDS** may lead to myocarditis from a number of causes including viral, bacterial or fungal infection, treatment and nutritional deficiencies.
- **Skin disorders** such as burns or recurrent infections.

- **Eating disorders**, such as anorexia, due to heart damage.
- **End-stage kidney disease** which can result from the build-up of waste products in the blood.
- **Trauma or injury to the chest or oesophagus**, or indirect injury to the chest wall.

Medical Procedures

Medical procedures which can increase the risk of myocarditis and pericarditis include:

- **Central venous line**, an intravenous catheter that goes into a larger central vein in the body.
- **Devices in the heart** such as artificial heart valves, pacemakers and implantable cardioverter defibrillators.
- **Haemodialysis** for end-stage kidney disease. Infection may result from access to blood vessels needed for haemodialysis.
- **Radiation therapy** to treat cancers such as lung and breast cancer and lymphoma

How To Get The Correct Diagnosis

Early diagnosis is key to preventing long-term heart damage. Getting an accurate diagnosis is vital as treatments for autoimmune-related myocarditis can interfere with the body's ability to fight an infection. Myocarditis and pericarditis are diagnosed through a complete medical history and physical examination, as well as diagnostic tests and imaging studies. These specifically evaluate heart abnormalities, including electrocardiogram, chest x-ray, blood tests including evaluation of heart enzymes (such as troponin), echocardiogram (ECG: cardiac ultrasound) or magnetic resonance imaging scan of the chest. Coronary angiogram may be performed if symptoms are similar to those of a heart attack such as chest pain or pressure.

The physical exam may include checking the legs for swelling, a sign of heart failure, and checking the temperature to determine if there is a fever. Blood cultures will identify and treat the exact bacterium, virus or fungus that may be causing the infection.

Blood markers of autoimmune disease may be tested if the doctor suspects an autoimmune cause.

Conventional Treatment & Prevention

Patients with confirmed myocarditis or pericarditis may require referral to a cardiologist for advice regarding management. Treatment is determined on a case-by-case basis and depends on the cause and severity. After a diagnosis of myocarditis and/or pericarditis, cardiology follow-up will be required for at least 12 months. A repeat ECG and echocardiogram are likely to be required.

Myocarditis

Patients with confirmed myocarditis should be admitted to hospital for cardiac monitoring (ideally continuous ECG monitoring), until the cardiac biomarker levels have peaked and symptoms have resolved. In many people myocarditis improves on its own, or with treatment, leading to a complete recovery. Myocarditis treatment focuses on the cause and the symptoms. Some people with myocarditis might have chronic and irreversible damage to the heart muscle requiring lifelong medications, while other people need medications for just a few months and then recover completely. Either way, the doctor is likely to recommend regular follow-up appointments including tests to evaluate the patient's condition.

Treatment may include:

- Rest and medication may only be needed for mild cases.
- Corticosteroids, or other medications to suppress the immune system, may be used for certain rare types of viral myocarditis or autoimmune diseases, such as lupus.
- If myocarditis is causing heart failure or arrhythmias doctors may prescribe heart medication and a longer hospital stay depending on the signs and symptoms e.g. irregular heart rhythms or severe heart failure.
- Blood pressure medications such as diuretics, beta blockers, angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers may be prescribed by doctors if the heart is weak.

- If myocarditis is caused by a chronic illnesses, such as lupus, treatment is directed at the underlying disease.
- Severe myocarditis may need aggressive treatment such as intravenous IV medications, ventricular assist devices or urgent heart transplantation.

Myocarditis recovery time will depend on the severity of the condition and the person's overall health. It might take several months to feel completely better or longer if any permanent damage developed.

Pericarditis

Most people with pericarditis need monitoring and treatment to reduce the pain and swelling. If complications develop surgery may be needed. Treatment will depend on the type of pericarditis and may include:

- Rest.
- Anti-inflammatory and pain-relieving medication which includes colchicine, aspirin, non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and indomethacin, and corticosteroids in patients who are not responding to, or cannot take, NSAIDs.
- Antibiotics if there is a bacterial infection.
- Intravenous immunoglobulin to help control the body's immune and inflammatory response. This may be used when there is an autoimmune disorder such as lupus.
- Diuretics to remove excess fluid including from the pericardium.
- Medication to treat arrhythmia.
- Surgical drainage of the excess fluid (pericardiocentesis).
- Rarely, surgery to remove the pericardium (surgical pericardiectomy).

" Inflammation of the heart often causes chest pain which can be misdiagnosed as a heart attack."

Echinacea
(Echinacea spp.*)*

INTERVENTION	Anti-inflammatory	Antioxidant	Antimicrobial	Cardioprotective, etc	Immune modulator	Nervine, etc
Andrographis	✓		✓		✓	
Arjuna	✓	✓	✓	✓		
Astragalus		✓	✓	✓	✓	✓
Cat's Claw	✓	✓	✓		✓	
Echinacea	✓	✓	✓		✓	
Garlic	✓	✓	✓		✓	
Hawthorn		✓		✓		
Lime Flowers		✓			✓	✓
Maritime Pine	✓	✓	✓	✓		
Motherwort	✓	✓	✓	✓		✓
Reishi	✓	✓	✓		✓	✓
Turmeric	✓	✓	✓		✓	✓

Natural Therapies For Treatment & Prevention

Myocarditis and pericarditis can be life-threatening if left untreated so all patients should be under a doctor's care. The diagnosis and management of myocarditis and pericarditis is not always simple and is best done with a professional team that could include a cardiologist, radiologist, cardiac surgeon, infectious disease expert and the primary care provider. It is vital to consult with a cardiologist before embarking on treatment.

The doctor needs to find out what is causing the inflammation to treat it properly. These patients should not rely on supplements or herbs alone for treatment. Complementary therapies can be used along with conventional treatments but only under a doctor's supervision. Doctors should be informed about any other therapies the patient is using. Any drug/herb interactions should be taken into consideration.

The most common causes of myocarditis and pericarditis, infections and autoimmune diseases, cannot always be prevented however there are things that can be done to decrease the risks. These include strengthening the immune system, eating an anti-inflammatory diet, preventing infections by practicing good hygiene habits and limiting autoimmune reactions by managing stress.

The goals of treatment include reducing pain and inflammation and treating the underlying cause if it is known. Prevention and recovery can be managed with the following strategies:

- **Rest and reduce stress:** Any type of bodily stress, including intense exercise and physical activity beyond walking and stretching, can be harmful during heart inflammation. Sleep and rest are paramount. A humidifier can be used in the home, especially when sleeping at night, if the patient is experiencing shortness of breath and cough. Facial steam baths can also help.
- **Stress relieving techniques:** Experiencing myocarditis or pericarditis can be scary. Managing emotional stress can also help reduce the risk of autoimmune flare ups. Activities include meditation, breathing exercises, practicing mindfulness, gentle exercises, light yoga or stretching, massages, gratitude journaling, walking outside, art or creative activities.
- **Exercise with caution:** The doctor will need to be consulted about whether exercise is safe before the patient returns to intense exercise. However, once the patient has healed, exercise can be beneficial due to its benefits for immune function, circulation and cardiovascular health. It is a great way to prevent inflammation and boost immunity. Begin with less strenuous activities such as walking, swimming, light cycling and stretching.
- **Treating bacterial and viral infections** in their early stages can prevent complications. This includes getting early medical treatment for serious infections, especially if they affect the respiratory system or ability to breathe. Avoiding close contact with anyone who has a viral or bacterial infection and protecting other people, by staying home from work or school if infected, are appropriate precautionary measures. Other preventative measures involve keeping a close eye on wounds, including surgical, for any signs of infection, practicing good hygiene habits, safe sex and covering exposed skin when outdoors in high-risk areas to prevent tick bites and other infectious insect bites.
- **A nutrient dense, wholefoods diet:** An anti-inflammatory diet helps build up the microbiome, strengthen the immune system and prevent nutrient deficiencies. Epidemiological evidence has demonstrated that the "Mediterranean diet" has a cardioprotective effect. Include a variety of fruits and vegetables such as leafy greens, berries, cruciferous vegetables such as broccoli or cauliflower, whole grains, beans and legumes, high-quality protein such as lean grass-fed beef, bone broth, pastured eggs and wild-caught salmon, healthy fats such as almonds, walnuts and olive oil and probiotic rich foods such as cultured vegetables (like sauerkraut and kimchi) and cultured yogurt. **Avoid** foods that damage gut health, increase inflammation and weaken the immune system. Eliminate sources of trans-fatty acids and processed grains (especially those containing gluten) such as white bread and pasta, conventional dairy products, foods with added sugar and synthetic ingredients, processed meats (such as bacon), fast food and fried foods. Keep hydrated.

- **Limit salt intake:** Sodium (salt) aggravates the symptoms of myocarditis and pericarditis because it causes more fluids to be drawn into the bloodstream, demanding more work for the heart to pump blood. Herbs and citrus can be used instead of salt. The best way to reduce salt intake is to avoid eating processed foods, including fast food, frozen meals, canned foods, processed meats, cheeses, condiments, pre-made soups and packaged baked goods.
- **Limit caffeine, alcohol and tobacco intake:** Caffeinated drinks, such as coffee or tea, can cause the heart to beat faster. Alcohol can interfere with normal heartbeats and potentially worsen heart arrhythmia or interfere with medications. When myocarditis or pericarditis is severe no alcohol or caffeine should be consumed until a doctor says otherwise because both can weaken the heart muscle. Tobacco and nicotine products should be stopped as soon as possible as the chemicals in these products can increase inflammation, worsen arrhythmias and cause damage to arteries.
- **Avoid risky drugs or medications:** Caution should be taken with new supplements and over-the-counter medications. Certain medications might contain caffeine, or cause the heart rate to speed up, such as headache medications or drugs used to treat colds/flu. Some **supplements that can help** reduce inflammation, benefit the immune system and gut, in consultation with a doctor, include: Vitamin C, vitamin E, omega-3 fatty acids, coenzyme Q10, magnesium, quercetin, vitamin D, probiotics and N-acetlycysteine.

Potential Treatment Plans

Myocarditis	Andrographis	Arjuna	Garlic	Hawthorn	Motherwort
Pericarditis	Arjuna	Garlic	Hawthorn	Maritime Pine	Reishi
Viral myocarditis or pericarditis	Andrographis	Astragalus	Cat's Claw	Echinacea	Maritime Pine
Autoimmune myocarditis or pericarditis	Astragalus	Lime Flowers	Motherwort	Reishi	Turmeric

Motherwort
(Leonurus cardiaca)

Desired Herbal Actions and Potential Herbs Include:

Anti-inflammatory

Reduce inflammation and assist pain. Systemic inflammation can contribute to the development of heart disease and may also lead to autoimmune disorders. Rather than suppress the inflammatory response herbs can reduce inflammation by assisting the body to overcome the problem. Herbs such as andrographis, arjuna, bupleurum, calendula, cat's claw, chamomile, cinnamon, echinacea, elderberry, feverfew, garlic, ginger, gotu kola, green tea, ivy leaf, maritime pine, pomegranate, rehmannia, reishi, St. Mary's thistle, schizandra, turmeric

Antioxidant

Antioxidant herbal medicines protect against oxidation and free radical damage. Oxidative stress plays an important role in cardiovascular diseases. Antioxidants can contribute to the total antioxidant defence system of the body and address mitochondrial oxidative stress and endothelial dysfunction. Herbs such as astragalus, andrographis, arjuna, baical scullcap, bilberry, cat's claw, echinacea, elderberry, garlic, ginkgo, graviola, green tea, hawthorn, lime flowers, Korean ginseng, magnolia, maritime pine, mistletoe, motherwort, olive leaves, parsley root, pomegranate, reishi, saffron, turmeric, withania

Antimicrobial (anti-viral, anti-bacterial, anti-fungal)

Antimicrobial herbs help build the body's defences against infections. Antimicrobial herbs include antivirals which help eradicate viral organisms. Antibacterials elicit a specific immune response to bacterial agents, or have a direct antibacterial activity upon certain species of bacteria, and antifungals do the same but on fungi of various genus and species. Herbs such as andrographis, arjuna, astragalus, barberry, black walnut, buchu, calendula, cat's claw, cinnamon, echinacea, elderberry, elecampane, fennel, garlic, golden seal, graviola, green tea, horseradish, hyssop, juniper, lemon balm, maritime pine, paw paw, pau d'arco, pomegranate, reishi, rue, sage, St. John's wort, Siberian ginseng, thuja, thyme, turmeric, wormwood, yarrow

Cardioprotective and Cardiotonic

Restore tone and vigour to the heart muscle, protect the myocardium and decrease the risk of heart damage due to toxins. Herbs such as arjuna, astragalus, bilberry, coleus, dong quai, ginkgo, green tea, hawthorn, Korean ginseng, magnolia, maritime pine, motherwort, olive leaves, pomegranate, withania

Immune Modulators

Immune modulating herbs broadly support the immune system. Herbs such as andrographis, astragalus, cat's claw, cinnamon, dong quai, echinacea, elderberry, garlic, glossy privet, lime flowers, pomegranate, reishi, Siberian ginseng, teasel root, turmeric, withania

Nervines, Adaptogens, Sedatives, Anxiolytics, Antidepressants

Support immune health and help with physical and mental stress or fatigue. Herbs such as astragalus, ginkgo, Korean ginseng, lime flowers, magnolia, mistletoe, motherwort, passionflower, reishi, rhodiola, saffron, turmeric, valerian, withania, zizyphus

Herbal Support Could Include:

HERB NAME	DESCRIPTION	ACTIONS
Andrographis (Andrographis paniculata) 	Andrographis is used in Ayurveda as immune support for bacterial and viral respiratory tract infections. Andrographis, and its key constituent andrographolide, have been reported to exhibit potential cardiovascular activities. A 2021 review found they both possess therapeutic potential in the management of myocardial injury, which requires further validation in human clinical trials. Caution with anticoagulant/ antiplatelet and immunosuppressant drugs. Combination may be beneficial with 5-aminosalicylates (e.g. mesalazine, sulphasalzine) used to treat inflammatory bowel disease, including ulcerative colitis and Crohn's disease, and anti-rheumatoid arthritis agents (e.g. prednisone, methotrexate). Medical supervision recommended.	Immune Modulator Antiviral Antimicrobial Anti-inflammatory
Arjuna *(Terminalia arjuna)* 	As a renowned heart tonic arjuna is used extensively in heart diseases and related chest pain. A number of experimental and clinical studies have been conducted to explore the therapeutic potential of arjuna in cardiovascular ailments, especially in patients of coronary heart disease, and as a potent antioxidant.	Cardioprotective Cardiotonic Antioxidant Anti-inflammatory Antibacterial Antiviral
Astragalus *(Astragalus membranaceus)* 	A well-known immune modulator and adaptogen, astragalus can help build and restore overall health by slowly nourishing the body deeply over time. In Traditional Chinese medicine clinical practice astragalus has been widely applied to treat patients with viral diseases, including viral myocarditis. A 2020 systemic review found that astragalus is a potential cardioprotective candidate in the treatment of viral myocarditis. Avoid with those on immunosuppressive drugs and transplanted organs. Caution advised with lithium.	Immune Modulator Antioxidant Diuretic Cardioprotective Adaptogen Antibacterial Antiviral
Cat's Claw *(Uncaria tomentosa)* 	Cat's claw offers powerful immune support and preclinical evidence shows it enhances cytokines that improve immune function. It is also a potent anti-inflammatory which can help relieve unpleasant symptoms during viral infection. Caution with protease inhibitors (e.g. antiviral drugs such as atazanavir, ritonavir, saquinavir) and anticoagulant/ antiplatelet (such as warfarin) and immunosuppressant drugs.	Anti-inflammatory Antioxidant Immune Modulator Antiviral Antibacterial

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Echinacea *(Echinacea* spp.*)* 	Echinacea is lauded for its immunomodulatory effects, particularly in the prevention and treatment of upper respiratory tract infections. It is used to increase general immune system function and to address infections. Avoid with antineoplastic (such as etoposide) drugs and asthma or atopic medication. Caution with cyclophosphamide (chemotherapy), warfarin and immunosuppressant drugs.	Immune Modulator Anti-inflammatory Antimicrobial Antioxidant
Garlic *(Allium sativum)* 	An abundance of scientific research supports garlic's positive impact on the cardiovascular system. Traditionally used to support the immune system, the heart and intestinal health. It is an effective remedy against bacterial, fungal, viral and parasitic infections. It helps prevent and reduce the severity of respiratory infections. It appears to improve blood pressure, and a tendency to clotting, helping to prevent heart attack and strokes. Use caution with anticoagulants (such as warfarin) at doses greater than 7g/day. Avoid using concurrently with antiretroviral therapy (anti-HIV drugs). Observe with antiplatelet drugs and antihypertensive and antihyperlipidaemic agents. Use with caution under medical supervision with hydrochlorothiazide, a thiazide diuretic (water pill) used for hypertension.	Antioxidant Anti-inflammatory Antimicrobial Immune Modulator
Hawthorn *(Crataegus monogyna)* 	Hawthorn has been used traditionally to treat heart problems, improve heart function and reduce myocardial damage. Known as "the heart herb," hawthorn has cardioprotective abilities, including helping to prevent conditions that raise the risk for pericarditis and myocarditis such as: angina, high blood pressure, hardening of the arteries, irregular heartbeat and even congestive heart failure. Avoid with nitrates and phosphodiesterase-5 inhibitors (such as sildenafil). Caution with antihypertensive drugs. Theoretical beneficial interaction with digoxin and cardiac glycosides, diuretics, doxorubicin (chemotherapy medication) and lipid lowering drugs.	Cardioprotective Cardiac Tonic Antioxidant

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Lime Flowers *(Tilia cordata)* 	Lime flowers were historically used as a mild sedative to treat health problems associated with anxiety and soothe nerves. As a mild hypotensive they are specific for nervous tension held in the heart and may be useful adjunctive treatment where there is anxiety. It is also a helpful herb for many symptoms of respiratory illness. Caution with lithium.	Sedative (mild) Nervine Tonic Diuretic Antioxidant Immune Modulator
Maritime Pine *(Pinus pinaster)* 	Maritime pine bark has been reported to have cardiovascular benefits with significant free radical scavenging activity which can prevent oxidative damage. In vivo studies suggest that a standardised maritime pine product exerts beneficial effects on viral myocarditis by decreasing virus replication, and by suppressing expression of pro-inflammatory cytokines and genes related to cardiac remodelling.	Antioxidant Cardioprotective Anti-inflammatory Diuretic Antimicrobial
Motherwort *(Leonurus cardiaca)* 	Motherwort is an acclaimed cardiotonic known for strengthening the heart as indicated by the Latin name cardiaca. Commonly known as 'mother's little helper', because of its ability to help ease the stress and tension of weary mothers, it is used for maladies of the nervous system and heart triggered by stress. Motherwort preparations have been used to regulate the heart activity rhythm in myocarditis, angina pectoris, cardiovascular neuroses, the initial stages of hypertension, excessive nervous excitability, exhaustion accompanied by insomnia, a sense of tension and increased reactivity. Caution with central nervous system depressants including benzodiazepines.	Cardiovascular Tonic Relaxing Nervine Antioxidant Anti-inflammatory Diuretic Antibacterial Antifungal
Reishi *(Ganoderma lucidum)* 	Reishi is a powerful medicinal mushroom that is prescribed to enhance immune resistance. In research reishi has potent cardiovascular activities including improving myocardial function. It is used as a general tonic for deficiency syndromes associated with tiredness and fatigue. Monitor with anticoagulant/antiplatelet, antidiabetic and antihypertensive drugs. Combination may be beneficial with antimicrobial and antiviral therapy – medical supervision recommended.	Immune Modulator Adaptogen Antioxidant Anti-inflammatory Antiviral Nervine Relaxant

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Turmeric *(Curcuma longa)* 	Turmeric is renowned for its ability to modulate inflammation associated with an extraordinary spectrum of infectious and autoimmune diseases including heart health. The impact of turmeric's key medical constituent, curcumin, in myocarditis has been studied in vivo where it has been shown to reduce the inflammatory response. Caution with dexamethasone (an anti-inflammatory medication), sulphasalazine (a disease-modifying anti-rheumatic drug), tacrolimus (an immunosuppressive drug), talinolol (a beta blocker), anticoagulant/antiplatelet and antidiabetic drugs. Combination may be beneficial in those with high alcohol ingestion, due to possible reduced organ damage, and NSAIDs.	Anti-inflammatory Antioxidant Immune Modulator Antimicrobial Antiviral Antifungal Antidepressant

Conclusion..

Recovery from myocarditis and pericarditis takes time. In some cases, it can take weeks, or months, for symptoms to completely resolve. Most cases are mild, without complications, however there can be complications and some cases, if not treated, can lead to chronic disease and serious problems that affect the heart. Steps can be taken to reduce the chance of having another acute episode, complications or chronic manifestations. These steps include getting prompt treatment, following the treatment plan and getting ongoing medical care as needed, especially if there are any signs of recurrence. Full recovery is most likely with rest and ongoing care, which can help reduce the risk of getting it again.

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