

Congestive Heart Failure (CHF)

Definition

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MindBody

Spirituality

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Ayurveda

Definition

Congestive heart failure (CHF) is more a clinical syndrome, rather than a specific disease with one origin. While underlying coronary heart disease is the most common cause in the United States, there are many other conditions such as hypertension, valvular heart disease, congenital heart disease (birth defects) and heart muscle disease of an unknown cause which can all lead to CHF. CHF is a rather common condition, approximately 2 million people

in the United States are being treated for CHF, and there are as many as 400,000 new cases each year (1). The prognosis of such persons has been assessed by several means including symptoms, exercise capacity, heart pumping capacity, blood sodium and hormone analysis, and by assessment of heart rhythm disturbances. Most, if not all of these assessments, predict a mortality rate exceeding 50% for those with the most advanced forms of CHF (2).

While the left heart normally ejects 55-70% of its blood and thus the EF=55-70%, in the majority of patients with CHF the EF is reduced. This decrease leads to blood pooling in the lungs and from there it backs up into the right heart chambers. In fact, the most common cause of right heart failure is left heart failure. Other causes of right heart failure include severely elevated pressure in the lungs due to underlying lung disease or extensive blood clots to the lungs, volume overload of the right heart due to abnormal shunts or other birth defects, valvular heart disease, coronary heart

In most people affected with CHF, the underlying problem is an inability of the left heart muscle (left ventricle) to normally contract, leading to a reduction in the left ventricular ejection fraction (EF). It is important to note that in up to one-third of people affected with CHF, there is nothing wrong with the contractile ability of the heart, but instead it is the relaxation of the heart which is impaired leading to elevated pressures in the heart.

disease, or a variety of heart muscle diseases. Right heart failure results in congestion of the liver, intestines and lower extremities. These elevated pressures can lead to symptoms identical to that which is seen with impaired contraction of the heart muscle. Common causes for this form of CHF include long-standing hypertension and also coronary heart disease.

Symptoms of Congestive Heart Failure (CHF)

- Shortness of Breath
- Fatigue
- Reduce Appetite
- Weight Loss or...
- Weight Gain secondary to swelling
- Lower extremity edema
- Enlarged Liver
- Insomnia

The symptoms of CHF are many and in large part related to the reduced pumping capacity of the heart. The weakened heart frequently leads to shortness of breath. This may occur with exertion, at rest, when lying flat (orthopnea), or occur suddenly at night while supine (paroxysmal nocturnal dyspnea). The person with CHF also commonly experiences fatigue, either with activity

or at rest. Its occurrence is related to inadequate oxygen delivery through the bloodstream to the muscles. The reduced ability of the heart to circulate blood may also result in blood backing up into the liver leading to a reduced appetite and weight loss, and/or conversely weight gain secondary to swelling in the lower extremities with excessive fluid retention.

Despite the dismal prognosis many times associated with CHF, several effective traditional medications are available to not only relieve the symptoms associated with CHF, but also to improve a person's survival. These include angiotensin-converting enzyme (ACE) inhibitors, diuretics, digoxin (Lanoxin), beta-blockers, angiotensin-receptor blockers (ARB), and anti-arrhythmic medications. Surgical procedures such as a coronary artery bypass grafting (CABG), or valve replacement may also improve a patient's symptoms and prognosis. Permanent pacemakers and implantable cardioverter/defibrillators (ICD) are useful in some individuals for treating a person's rhythm disturbance, some which could be fatal. While many times effective, traditional

therapies for CHF have focused on the disease process or symptoms, which result directly from heart dysfunction. An integrative approach to the care of CHF combines traditional medicine with the needs of the whole person through a wide variety of mindbody techniques, therapeutic exercise, and natural supplements and nutrition.

DIET

Reduce sodium intake. For those individuals with CHF, excess sodium in the diet can be particularly harmful by leading to fluid retention throughout the body. Extra fluid within the bloodstream can exacerbate symptoms such as shortness of breath and swelling. It only takes 400-500 mg of sodium per day to meet nutritional needs. This is equivalent to about 1/4 teaspoon of salt. Individuals without CHF should try to limit sodium intake to less than 5000 mg per day. However for the person with CHF, sodium intake should be reduced even further to less than 1800 mg per day. While almost all foods contain some sodium, foods particularly high in sodium include canned soups, chips, pickled products, condiments such as ketchup, mustard, soy sauce, cured meats

such as ham, cold cuts, bacon and hot dogs. Also consider switching to unsalted butter and margarine and remember to taste food before considering adding salt. Finally, eliminate the salt shaker from the dinner table.

While reducing your sodium, consider increasing potassium intake. Potassium, sodium and magnesium are frequently lost in the urine of people taking fluid pills (diuretics). Low potassium levels may lead to elevated blood pressure and arrhythmias, some of which can be life threatening. Foods high in potassium include whole grains, bananas, black beans, carrots, oranges, milk, pork, potatoes, prunes, spinach, and veal. A healthy diet should include 2000-5000 milligrams per day. Elevated levels of

potassium may also be dangerous. Therefore, consult a medical provider before beginning supplementation with potassium and those with kidney disease should be particularly cautious. Magnesium is important to vascular tone and relaxation, regulation of blood pressure, and prevention of arrhythmias. People with CHF are particularly prone to low magnesium levels in their blood because of diuretic use. A healthy diet should contain 300-500 milligrams per day. Foods high in magnesium include beans, halibut, non-fat yogurt, nuts, potatoes, and spinach.

Avoid excessive alcohol. Even small amounts of alcohol can lead to heart muscle dysfunction in some individuals. However, the negative effects of alcohol

are difficult to predict and research has suggested that alcohol may actually reduce the risk of heart attacks and cardiac death caused by coronary heart disease (3). Consume no more than 2 alcoholic beverages per day. One drink of alcohol equals 12 oz of beer, 4 oz of wine or 1 1/2 oz of hard alcohol. Excessive alcohol has been linked to elevated blood pressure, rhythm disorders, and heart muscle dysfunction as well as a host of other deleterious effects. Also keep in mind that a 4-ounce glass of wine contains approximately 80 calories and therefore even modest daily use can lead to gradual weight gain.

Maintain a healthy weight. Over 50% of Americans are overweight and that percentage continues to increase. In 1980, 25% of Americans were overweight, while in 1999 the incidence has risen to 55%. While obesity itself does not directly contribute to CHF, it certainly can lead to elevated blood pressure, an exacerbation of symptoms, and place additional strain on a weakened heart. The ability to maintain a healthy weight requires more than self-control and willpower. At least six factors influence your weight - behavior,

Diet Modifications for Congestive Heart Failure (CHF)

- Reduce Sodium

Recommended Levels

Those without CHF

>5000 mg/day

Those with CHF

>1800 mg/day

- Increase Potassium

Recommended Levels

2000-5000 mg/day*

*elevated levels may be dangerous - check with a physician before supplementation

- More Magnesium

Recommended Levels

300-500 mg/day

environment, health status, culture, income level, and genetics (3). You can assess your ideal weight by calculating your body mass index (BMI) in our risk profile section of this Web site.

In order to avoid obesity, first get regular exercise, at least thirty minutes a day of activity equivalent to vigorous walking. You can do it all at once or in divided segments. Second, focus on healthy eating, not deprivation diets. Choose healthy foods such as vegetables, fruits, grains and lean meat. Seek foods for their nutrient value and not for their calories. Third, lose weight slowly. One pound per week is most effective. Even five to ten percent of your body weight can improve your health (4).

HERBAL SUPPLEMENTS

Coenzyme Q10: Clinical trials have suggested that coenzyme Q-10 can significantly improve the quality of life and decrease hospitalization rates for patients with mild to severe congestive heart failure. It may also

Herbal Supplements for Congestive Heart Failure

Supplement

Common Dosages

Coenzyme Q10

100 mg/day

Hawthorn

160-900 mg/day

L-Carnitine

1 gram twice daily

Selenium

200 mcg/day

Thiamine (Vitamin B1)

200 mg/day

reduce the signs and symptoms associated with the condition - symptoms such as shortness of breath, lower extremity edema (accumulation of fluids in the legs), an enlarged liver and insomnia (5-7). However, coenzyme Q-10 does not appear to improve the strength of the heart's contraction (which is measured as the ejection fraction) or to improve exercise tolerance in congestive heart failure patients (6,8-10). Therefore, traditional drug therapy for CHF may be supplemented with coenzyme Q-10 in hopes of limiting the number and dosage of medications required, but

it should never be utilized by itself for this purpose, nor substituted for proven therapies. For CHF, the most common dosage is 100 mg per day, divided into two or three doses.

Hawthorne: Hawthorn may play a complementary role to traditional medications for the alleviation of symptoms typical of congestive heart failure - symptoms such as fatigue, limited exercise tolerance and perhaps even shortness of breath. The potential benefits of hawthorn in alleviating the symptoms associated with mild CHF have been studied in both animals and humans.

• In animal studies hawthorn has been demonstrated to dramatically improve heart function and blood flow through the heart's arteries (11).

In order to avoid obesity:

- Get regular exercise, at least thirty minutes a day.
- Focus on healthy eating, not deprivation diets.
- Lose weight slowly. One pound per week is most effective.

• In humans, four of five placebo-controlled studies utilizing hawthorn demonstrated subjective improvement of symptoms by patient and physician reports (12). In a double-blind randomized study performed in patients with mild congestive heart failure, patients received either a special extract of hawthorn or a placebo for eight weeks. At the conclusion of the study, patients who received hawthorn extract had a significant improvement in their heart rate and blood pressure in response to exercise, were able to exercise longer and had fewer symptoms typically associated with this condition (13). Most sources recommend taking 160 to 900 mg in two to three divided doses per day. A water-ethanol extract of hawthorn with leaf and flower is best. It takes six weeks to assess whether hawthorn is beneficial.

L-Carnitine: Also known as simply carnitine. Manufactured in the liver, kidneys, and brain, this B vitamin is important in the transportation of energy molecules within heart muscle cells. Specifically, L-carnitine is involved in fatty acid metabolism. Its deficiency can lead to heart

muscle dysfunction as well as abnormal function of several other organs. Research in CHF has suggested that supplementation with L-carnitine may improve symptoms and possibly even survival (14,15). However, there is limited data available and the role of L-carnitine in CHF remains to be established. L-carnitine 1 gram taken twice a day has been suggested as the appropriate dose. **It is important not to take D- or DL-carnitine which are found in some over-the-counter preparations and may lead to severe side effects or symptoms suggestive of L-carnitine deficiency** (16).

Selenium: Selenium is an antioxidant that regulates important enzymes which protect against such oxidized molecules such as low density lipoproteins (LDL). It also inhibits aggregation of platelets which are small blood components that build up on plaque within the heart arteries and can lead to heart attack. Finally, selenium is felt to protect the heart from damage attributed to toxic heavy metals (17). In CHF, selenium deficiency has been linked to a cardiomyopathy, (heart muscle disorder) called Keshan disease, endemic to China that affects many children and young women (18).

Its deficiency has also been linked to a cardiomyopathy found in people receiving artificial nutrition (19). The role of selenium in relieving the symptoms or improving the prognosis of patients with CHF has not yet been established and therefore, it has not been recommended. Randomized trials are still needed, yet its deficiency has clearly been established as a contributor to specific heart muscle disorders. The recommended daily allowance for adults is 55 mcg. Food sources rich in selenium include lobster, salmon, haddock, enriched white rice, whole wheat flour, and Brazil nuts. The average person in the United States ingests 125 micrograms (mcg) per day through their diet. No clear guidelines have been established for supplementation, however 200 mcg per day is felt to be appropriate (4).

Thiamine (vitamin B1): People with CHF should consider supplementing their diet with thiamine. Many people with CHF take diuretics on a regular basis. Most diuretics cause excessive excretion of sodium and potassium into the urine and along

with these valuable electrolytes goes thiamine leading to its potential deficiency. This deficiency may lead to an increased risk of heart failure, particularly in those taking chronic diuretics such as furosemide (Lasix) (20). In some cases, thiamine repletion has been shown to improve heart function (21-25). Supplementation with thiamine 200 mg per day has been recommended for those identified as deficient through blood tests or presumed deficient due to chronic diuretic use (16).

EXERCISE

Make regular aerobic exercise a part of life. Most people with CHF can tolerate, and likely should participate in, some form of daily exercise even if it means only a stretching routine. Of course, aerobic activity such as walking, biking, swimming, cross country skiing and active gardening is preferred, but this may not be appropriate for all people with this condition. In fact, for those with CHF, a medical provider should be actively involved in deciding on what level of activity is correct.

For the general population, exercise is recommended

at least 3 times per week to at least 70% of your maximum predicted heart rate (220-age in years). Again this may be too much for the person with reduced heart function and/or shortness of breath either from a safety standpoint or from a pure lack of physical capacity. Some people may also have a blunted heart rate response due to medications, which will preclude them from achieving this degree of heart rate response. However, if some form of aerobic exercise can be performed, there are several potential benefits to cardiovascular health including improved efficiency of the heart muscle allowing it to deliver more blood to tissues, lowered systolic and diastolic blood pressure, a rise in HDL (the "good" cholesterol) and decline in LDL (the "bad" cholesterol) and triglycerides. Lung function is also improved and there are psychological benefits as well. People who regularly exercise just feel better.

Mild strength training may also be of benefit to the person with CHF. Isometric exercise is pushing against a force without movement such as pushing against a wall while isotonic exercise involves both resistance and movement. It is the latter that is most beneficial to

cardiovascular health by building muscle mass and decreasing body fat. Obviously, these are benefits derived by anyone, but they are especially important to the person with CHF who has become physically deconditioned simply due to the limitations of their disease. Like aerobic training, a strength training program should not be initiated without the guidance of a medical provider. Rhythm disturbances or transient low blood pressure may ensue in some individuals with this type of exercise. Don't forget about the benefits of daily muscle stretches and flexibility exercises. Incorporate 15, to as much as 30, minutes into a regular exercise program. While beneficial to all ages, in the elderly and those with CHF, improved flexibility allows a person to stay active and avoid injury when they might otherwise be limited by musculoskeletal complaints.

YOGA/TAI CHI/QI GONG

Yoga: Developed in ancient India, Yoga is a set of practices intended to integrate the mind, body, and spirit. While there are many forms of yoga, Hatha yoga is the

most commonly practiced form within the United States. There are three basics practices that make up Hatha yoga.

- Asanas involves a variety of physical postures and exercises.
- Pranayama comes from the Sanskrit word prana, which means life energy and ayam, which means control. Pranayama is similar to the "qi" in ancient Chinese medicine. By utilizing breathing exercises, pranayama attempts to remove the harmful effects of stress, toxins, and improper diet.
- Dhyana, or meditation, is felt to have beneficial effects on the autonomic nervous system that regulates excitability within the body as well as hemodynamic factors such as blood pressure and heart rate.

Yoga has long been touted as beneficial to those with cardiovascular disease or at risk of developing cardiovascular disease. Several studies have examined the hemodynamic benefits of yoga. Beginning in 1973, a study in London combined yoga along with biofeedback and noted that 25% of those studied were able to stop using anti-hypertensive medications (26). A second study in 1993 examined physical fitness teachers who practiced yoga for 3



months. The participants showed a significant reduction in blood pressure, heart rate, respiratory rate, and body weight (27). No specific studies are available for people with congestive heart failure, regardless the meditation, exercise and breathing techniques practiced within Yoga are undoubtedly helpful to the person with CHF who may have physical limitations and cannot participate in high impact aerobic exercise and for all people with CHF who have shortness of breath. Obviously, more scientific evaluation of Yoga and its benefits are needed.

Tai Chi: Developed in China in the 1200's, Tai Chi has become the most popular form of exercise in that country. Tai Chi is increasingly popular in the United States as a form of mild to moderate aerobic activity. It

combines slow, graceful movements with deep breathing and mental attention. A typical workout lasts only 15-20 minutes and ideally is performed twice per day either individually or in a group. The body's response to Tai Chi has been studied and found to lower blood pressure and heart rate (28). In fact in this study, Tai Chi was found to confer equivalent benefit to brisk walking. However, not all studies have found similar results. No studies are yet available examining the specific benefits of Tai Chi in patients with CHF, but the low impact exercises and focused breathing techniques provided by Tai Chi is ideally suited for many patients with this condition. *Qi Gong* (pronounced chee gong) also involves movement and deep breathing exercises. It too was developed in ancient China and has become increasingly popular in the United States. The qi is a person's vital energy, which circulates within the body in small channels known as meridians. Qi Gong is intended to channel that energy and promote health. So far there is no research in the United States specific to the benefits of Qi Gong in patients with CHF, but broader-based research has

MindBody Medicine: Study Results

- * Meditation and Relaxation - significantly lowered both systolic and diastolic blood pressure
- * Imagery and Visualization - experiments have demonstrated the ability to control the hemodynamic response of stress utilizing imagery
- * Biofeedback techniques - effectively lowered blood pressure
- * Cognitive Behavioral Therapy - has been shown to reduce physical and psychological distress, as well as the utilization of health care services
- * Hypnosis - has been demonstrated to lower blood pressure and heart rate

suggested that Qi Gong may reduce blood pressure and therefore provide an indirect benefit to people with CHF by reducing the workload of the heart. While the cardiovascular benefits of Qi Gong remain incompletely defined, the basic principles of physical fitness and stress relief make Qi Gong a fitness method worth exploring—especially for the elderly patient with limited mobility.

MIND/BODY MEDICINE

If healing literally means "to make whole," the body cannot truly be healed without healing the mind. Ancient Chinese medicine considered the mind and body as comprising the whole self.

Modern medicine has segregated these entities and focused on scientific methods, which provide targeted therapies to the body, without examining the necessary "wellness" process needed to simultaneously treat the mind - the MindBody connection. For example in CHF, medications are provided to remove excessive fluid from the lungs. These medications certainly do not relieve stressors or spiritual concerns which may be contributing to, or inhibiting, the healing process.

MindBody Medicine actually includes a wide array of therapies which all center around the connection in

healing between the mind and body. Extensive research has been performed in many of these areas:

- Meditation and relaxation was examined by Cooper in 1978 and found to significantly lower both systolic (the upper number) and diastolic (the lower number) blood pressure (29). By reducing blood pressure, a weakened heart muscle can pump blood more efficiently with less backing-up into the lungs leading to shortness of breath and fatigue.

Meditation is probably the simplest, and perhaps, most fulfilling of all holistic therapies.

- Imagery and Visualization are therapeutic techniques which lead the participant through a series of images that promote relaxation with calming of the body's natural anxiety provoking chemicals. These "images" may involve several of the body's senses such as touch, sight, smell, motion, and hearing. With proper training, a person can learn to guide themselves through those states, which provide a calming effect and can reduce the heart rate and blood pressure, important factors in the treatment of CHF. Experiments in people

utilizing imagery have demonstrated the ability to control the hemodynamic response of stress (30). The benefits of such therapy can last even after the participant is no longer engaged in the activity.

- Biofeedback utilizes instruments which monitor bodily functions and allows the participant to regulate those functions. For instance, listening to the heartbeat empowers a person to consciously increase or decrease their heart rate. Likewise, such techniques have been utilized to effectively lower blood pressure (31). In addition for the person with CHF, such techniques can be utilized to control breathing, reduce anxiety and promote relaxation.

- Cognitive Behavioral Therapy is a MindBody technique, which uses brief psychotherapy to reduce the stress response and induce relaxation. These techniques are particularly useful in individuals with chronic illness requiring permanent behavioral change and acceptance of that change. CHF is one such disorder that can benefit from these techniques. Education is a key component of learning to live with any chronic illness. CHF frequently requires a

change in lifestyle. Learning to cope through use of motivational techniques and particularly group support can minimize the negative impact of this experience. Research has demonstrated that cognitive behavioral interventions can reduce physical and psychological distress, as well as utilization of health care services, for a wide variety of chronic conditions (32). By these techniques, the person with CHF learns to accept their illness, understand the disorder through education, and learn how to change behavior which may otherwise negatively impact the healing response.

- Hypnosis in essence is a form of deep relaxation. It is a state of focused concentration allowing the mind to be highly receptive to suggestion (33). While not studied for the treatment of CHF, hypnotherapy has been demonstrated to lower blood pressure and heart rate. Further studies on its longterm effects on this condition have yet to be performed.

SPIRITUALITY

Spirituality is the belief in something, not necessarily someone, greater than oneself. This should not be confused with religious belief. A person can be spiritual

without being religious. With the advent of modern scientific medicine came a clear separation between spiritual, religious, and scientifically founded beliefs. With the emergence of holistic therapies, there has been a resurgence in promoting spiritual and religious healing and studying its effectiveness in a whole host of disorders.

Spirituality includes an array of beliefs including a feeling of love, compassion, empathy, gratitude, and a sense of inner peace. There is a diminished focus on self (32). Love and social support are a part of a person's spirituality which provides healing and influences cardiovascular disease. A study examining individuals who described their parents as providing loving support in the 1950's went on to show that these individuals developed less hypertension and heart disease as well as fewer other non-cardiac conditions later in life (31). Spirituality and its impact on persons with CHF has not been adequately defined.

Therapeutic Touch was developed in the United States in the 1970's, but draws much of its premise

from ancient Chinese medicine, as well as modern medicine. At the root of therapeutic touch is the belief in a common "life force" or energy field. By interacting with this energy field, it is believed a person can influence the healing of another. Surprisingly, it does not actually involve touching a person, but instead the provider holds their hands at a short distance from the person receiving the care and the provider moves their hands throughout the person's perceived energy field. These techniques have been widely embraced by nursing schools and now they are being taught throughout the United States. In a 1984 study, these techniques were provided to patients in a cardiovascular unit and those receiving such treatments showed a marked reduction in anxiety, important to the reduction of blood pressure and heart rate (34).

Religious belief is a part of the American fabric. In fact, 96 percent of Americans believe in God or a universal spirit (35). These beliefs impact healing. In a study conducted at Georgetown University School of Medicine in

1995, religion was found to be beneficial to healing 81% of the time, neutral 15% of the time, and harmful 4% of the time (36). In cardiovascular disease, religious older adults have been shown to have lower blood pressure and lower death rates from coronary heart disease than their nonreligious peers (37). CHF has not been specifically studied. While not specifically identified as treating cardiovascular disease, faith, hope and forgiveness are tenets of most religions and have also been identified as important to a person's healing response. Prayer is also a part of most American religions and it too has healing power. A 1986 poll by MD magazine found that one-half of doctors believe that prayer helps patients and two-thirds reported praying for patients (38). By praying, a relaxed state is induced in which breathing, heart rate and metabolism slow, blood pressure drops, and brain waves become less active.

PET THERAPY

Pet therapy could easily have been included in Mind/Body medicine or Spirituality sections because it crosses over to so many facets of holistic therapy. Pets are loved by their human companions and in

return can be powerful stimulators of health. In a study at the University of Pennsylvania School of Veterinary Medicine, pet owners had significantly lower blood pressure when they were greeting their pet than when they were reading neutral text (39). A study of the therapeutic benefit of pet therapy on the elderly was conducted with the Visiting Nurses Association of Eastern Montgomery County in Pennsylvania (40). Retirement home residents demonstrated a significant reduction in blood pressure and pulse rate following a pet visit which did not occur following a visit from a human. While no studies have specifically examined the beneficial effects of pets on people with CHF, the positive effects of pets on reducing blood pressure and control of heart rate are important components in the treatment of this disorder.

NATUROPATHY

Naturopathy focuses on the body's own ability to heal itself. Practitioners of naturopathy rely on a variety of techniques founded in ancient Indian, Chinese and Greek medicine. These include relaxation therapy, counseling and

psychotherapy, herbal medicine, nutrition counseling, physical therapy, and homeopathy discussed below. While the constituent parts of naturopathy have been studied for their beneficial effects in the treatment of cardiovascular diseases, there is little research on naturopathy as a whole in treating these conditions.

HOMEOPATHY

Homeopathy is relatively new compared to many of the holistic approaches discussed already. Founded in 1790 by Dr. Samuel Hahnemann, homeopathy is founded on the belief that "like cures like". Homeopathic therapies involve administering very dilute solutions of herbal substances felt to stimulate the body's own "vital force". By so doing, a person is able to heal himself or herself rather than relying on pharmaceutical agents. To date, there is little research on homeopathic medicine for the treatment of cardiovascular disease and perhaps none directed specifically at CHF. Therefore, its use for these conditions remains to be established.

AYURVEDA

Ayurvedic Medicine was founded in ancient India around 3500 B.C. It is

known in Hindu texts as the Vedas, meaning "science of life." In ayurvedic medicine, practitioners prescribe treatment and preventative therapy consisting of diet, herbal supplements, exercise and yoga, as well as other treatments in order to maintain a person's balance in life. Little research is available with regard to the healing power of ayurvedic medicine for cardiovascular disease, or specifically CHF. Ayurvedic practitioners have touted Arjuna bark, also known as Terminalia, for the treatment of CHF. In a small study, people with severe refractory CHF had significant reductions in symptoms and improved heart function after two weeks of treatment (41). A second trial examined the benefit of Arjuna bark following a myocardial infarction (MI or heart attack). Those treated for 3 months with traditional medications plus arjuna bark had less chest pain and improved heart function (42-43). The latter study recommended the powdered bark of arjuna in a dosage of 500 mg every 8 hours. While it appears promising in these small studies, the role of arjuna bark in the treatment of CHF remains to be fully clarified through larger randomized trials.

Studies

inconclusively demonstrated the heart healthy effects of taking powdered bark of arjuna in doses of 500 mg/every 8 hours for both CHF and post MI patients.

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