

Prevention and Cure of Cardiovascular Diseases in Unani System of Medicine: A Review

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ABSTRACT

Cardiovascular diseases have emerged as a big problem today and the biggest contributor to this increment is modern life style. In spite of the great advances observed in modern medicine in recent decades, we are unable to overcome the problems of cardiovascular diseases. But still Unani System of Medicine may play a vital role in the prevention as well as the management of these diseases. All ancient Unani physicians have clearly described the cardiovascular diseases, their prevention as well as management. The concepts of Muqawwi-e-Qalb and Mufarreh-e-Qalb are present only in Unani System of Medicine. In Unani System of Medicine several herbal, mineral and animal origin drugs have been described for cardiac ailments. The purpose of this paper is to review classical literature and aware the people about the prevention and cure of cardiovascular diseases through Unani System of Medicine.

Key Words: Cardiovascular diseases, Muqawwi-e-Qalb, Mufarreh-e-Qalb, Unani System of Medicine

INTRODUCTION

Cardiovascular diseases (CVDs) include a large number of diseases which directly affect the heart and the blood vessel system. Their affects are seen the most in the veins and arteries that lead to and from the heart and also have a vital impact on the same. The causes of cardiovascular disease are diverse but atherosclerosis and/or hypertension are the most common. In addition, with aging come a number of physiological and morphological changes those alter cardiovascular function and lead to increased risk of cardiovascular disease, even in healthy asymptomatic individuals.^{5,7}

Cardiovascular diseases are the leading cause of deaths worldwide, though, since the 1970s, cardiovascular mortality rates have declined in many high-income countries. At the same time, cardiovascular deaths and disease have increased at a fast rate in low- and middle-income countries. An estimated 7.3 million people died by CVDs in 2008 and over 80% CVDs deaths take place in low and middle income countries. By 2030, almost 23.6 million people will die from CVDs. Therefore, finding ways to reduce mortality of CVD remains an important public health goal. Traditional medicines have been an integral part of health care system since time immemorial.

WHO reports indicate that about 80% of the population still relies on herbal drugs.²¹ Unani Medicine occupies an important place in the rich traditional heritage of indigenous systems of medicine in India and contributes significantly to health care. The core of the treatment in Unani System of Medicine is based on the drugs of herbal, animal and mineral origin. The ancient classical literature of Unani Medicine has mentioned of numerous drugs possessing of cardio protective and cardio tonic activity.^{8, 11} Although cardiovascular disease usually affects older adults, the antecedents of cardiovascular disease, notably atherosclerosis, begin in early life, making primary prevention efforts necessary from childhood. There is therefore increased emphasis on preventing atherosclerosis by modifying risk factors, for example by healthy eating, exercise, and avoidance of smoking tobacco.⁷

Risk Factors for CVD^{1, 5}

There are many risk factors associated with CVD. Some of these factors are modifiable like (hypertension), high cholesterol, obesity, physical inactivity, diabetes, unhealthy diets etc and some are non-modifiable like age, sex, family history etc.

Non-Modifiable Factors^{1,5}

1. **Age:** Age is by far the most important risk factor in developing cardiovascular or heart diseases, with approximately a tripling of risk with each decade of life. It is estimated that 82 percent of people who die of coronary heart disease are 65 and older.
2. **Sex:** Men are at greater risk of heart disease than pre-menopausal women. Once past menopause, woman's risk is similar to a man's. If a female has diabetes, she is more likely to develop heart disease than a male with diabetes.
3. **Family History:** If a first-degree blood relative has had coronary heart disease or stroke before the age of 55 years (for a male relative) or 65 years (for a female relative) then the risk of CVD increases.
4. **Air Pollution:** Particulate matter has been studied for its short- and long-term exposure effects on cardiovascular disease. For every 10 $\mu\text{g}/\text{m}^3$ of $\text{PM}_{2.5}$ long-term exposure, there was an estimated 8-18% CVD mortality risk. Women had a higher relative risk (RR) (1.42) for $\text{PM}_{2.5}$ induced coronary artery disease than men (0.90) did. Overall, long-term PM exposure increased rate of atherosclerosis and inflammation. In regards to short-term exposure (2 hours), every 25 $\mu\text{g}/\text{m}^3$ of $\text{PM}_{2.5}$ resulted in a 48% increase of CVD mortality risk.

Modifiable Factors^{1, 5}

1. **Hypertension:** Hypertension is the single biggest risk factor for stroke. It also plays a significant role in heart attacks. It can be prevented and successfully treated but only if you have it diagnosed and stick to your recommended management plan.
2. **Dyslipidaemia:** Abnormal blood lipid levels, i.e. high total cholesterol, high levels of triglycerides, high levels of low-density lipoprotein or low levels of high-density lipoprotein (HDL) cholesterol all increase the risk of heart disease and stroke. Changing to a healthy diet, exercise and medication can modify your blood lipid profile.
3. **Tobacco Consumption:** Tobacco use, whether it is smoking or chewing tobacco, increases risks of cardiovascular disease. The risk is especially high if you started smoking when young. Passive smoking is also a risk factor for cardiovascular disease. Stopping tobacco use can reduce the risk of cardiovascular disease significantly, no matter how long you have smoked.
4. **Physical Inactivity:** Physical inactivity increases the risk of heart disease and stroke by 50%. Obesity is a major risk for cardiovascular disease and predisposes you to diabetes.
5. **Diabetes Mellitus:** Diabetes Mellitus is a major risk factor for coronary heart disease and stroke. Patient suffering from Diabetes Mellitus has twice risk of CVD in comparison to normal person. If you do not control diabetes then you are more likely to develop cardiovascular disease at an earlier age than other people and it will be more devastating. If you are a pre-menopausal woman, your diabetes cancels out the protective effect of oestrogen and your risk of heart disease rises significantly.
6. **Diet:** A diet high in saturated fat increases the risk of heart disease and stroke. It is estimated to cause about 31% of coronary heart disease and 11% of stroke worldwide.
7. **Alcohol Consumption:** Having one to two alcohol drinks a day may lead to a 30% reduction in heart disease, but above this level alcohol consumption will damage the heart muscle.
8. **Drugs:** Certain medicines may increase the risk of heart disease such as the contraceptive pill and hormone replacement therapy (HRT).

Symptoms of CVD^{5,12, 13, 14,18}

1. **No symptom⁵:** In the beginning of the CVD the patient lives a normal healthy life without any sign or symptom. Patients feel some problem on exertion or heavy work.
2. **Usre Tanaffus(Dyspnoea)⁵:** Dyspnoea, a medical term for shortness of breath, may be the earliest and most common symptom of heart disease. *Cardiac dyspnoea* generally occurs when the heart's pumping action has become weakened or something obstructs the free flow of blood through the heart into the blood vessels.
3. **Waja-ul-Sadar(Chest Pain)⁵:** Pain in the chest is the second most common symptom of heart disease and may be due to angina, a heart attack, dissection of the aorta, or an inflammation of the lining of the heart called pericarditis.
4. **Khafqan(Palpitation)^{2, 12, 13}:** Palpitation is the awareness of one's heartbeat and is often quite disturbing when it occurs. Physicians say it is one of the symptoms most likely to bring a patient to the office for an evaluation of heart disease. People who experience palpitations often describe the sensation as a fluttering-like a bird beating its wings in the chest—or a thumping, flip-flopping, skipped heartbeat, or a pounding in the chest or neck region.
5. **Ghashi(Syncope)⁵:** Syncope simply means fainting or the sudden loss of consciousness. Fainting usually results after the brain has been deprived of oxygen and blood for about ten seconds. The general causes of fainting include cardiac problems, diseases of the brain, and a variety of abnormalities of the arteries and veins that secondarily cause inadequate blood flow to the brain. Most commonly, it is caused by an abnormal reaction of the vagus nerve, which can temporarily cause a slow heart rate and a decrease in blood to the brain.

6. **Tahabbuj(Oedema):** Oedema is a swelling or puffiness of tissue around the ankles, legs, eyes, chest wall, or abdominal wall. The swelling is due to retention of water or lymph fluid in the cells of the tissue. Technically, oedema is classified as a sign, rather than a symptom, because it is physically observable. Oedema is a common sign of heart disease. The site of oedema serves as a signal for several different problems with the heart.
7. **Neelguni (Cyanosis)^{12, 13}:** Cyanosis is the bluish discoloration of the skin and mucous membranes. It is caused by too little oxygen carrying haemoglobin in the blood that flows through the capillaries. The discoloration usually is most apparent in the fingernail beds and around the lips. Like oedema, cyanosis is more a sign of heart disease than it is a symptom. There are two primary types of cyanosis: central cyanosis and peripheral cyanosis.
8. **Takan(Fatigue)^{12, 13}:** While fatigue is a common complaint of patients with heart disease, it is also a very elusive and subjective symptom—a common symptom of many physical diseases as well as depression. Basically, cardiac related fatigue will be of recent onset. The individual will begin the day with a relatively normal energy level, and then become increasingly tired through the day to the point of exhaustion. This is because the heart muscle has become weakened and lost its ability to pump enough blood and oxygen for the body to function normally.

Pathophysiology of CVD^{6,10, 17}

Atherosclerosis is the main precursor of CVD. Atherosclerosis is a specific form of arteriosclerosis in which an artery wall thickens as a result of invasion and accumulation of white blood cells (WBCs). In fact, atherosclerosis is a syndrome affecting arterial blood vessels due to a chronic inflammatory response of WBCs in the walls of arteries. This is promoted by low-density lipoproteins (LDL) that carry cholesterol and triglycerides without adequate removal of fats and cholesterol from the macrophages by functional high-density lipoproteins (HDL). It is commonly referred to as a "hardening" or furring of the arteries. It is caused by the formation of multiple atheromatous plaques within the arteries. Chronically expanding lesions are often asymptomatic until lumen stenosis is so severe (usually over 80%) that blood supply to downstream tissue(s) is insufficient, resulting in ischemia. These complications of advanced atherosclerosis are chronic, slowly progressive and cumulative. Most commonly, soft plaque suddenly ruptures causing the formation of a thrombus that will rapidly slow or stop blood flow, leading to death of the tissues fed by the artery in approximately five minutes. This catastrophic event is called infarction. One of the most common recognized scenarios is called coronary thrombosis of a coronary artery, causing myocardial infarction (a heart attack). The same process in an artery to the brain is commonly called stroke. Another common scenario in very advanced disease is claudication from insufficient blood supply to the legs. Atherosclerosis affects the entire arterial tree, but mostly larger, high-pressure vessels such as the coronary, renal, femoral, cerebral, and carotid arteries.

Prevention of CVD in Unani Medicine: In Unani System of Medicine, CVD and other diseases can be easily prevented by slight modifications in *Asbab-e-Sittah Zaruriyah* (Six Essential Factors) as well as in *Asbab-e-Ghair Zaruriyah* such as

1. **Hawa (Air)^{3, 15, 16}:** Air is an essential factor for life. Clean and fresh air is responsible for health. It has been described in non-modifiable factors that particulate matters in air play a significant role in the development of CVD. Therefore, to avoid CVD and other respiratory diseases, we should live in clean atmosphere.
2. **Makoolat wa Mashroobat^{15, 16}:** Food and drink are essential for life. For healthy life, our food and drink should also be healthy. To avoid CVD the following points should be remembered.
 - **Eat meat sparingly:** Relegate meat to a minor part of our diet instead of making it the centrepiece of most meals. Avoid fatty cuts of beef, pork, and lamb; instead choose lean meats, or substitute fish or skinless white-meat poultry.
 - **Opt for low-fat dairy products:** Avoid dairy foods that contain whole milk or cream; instead, use low-fat or non-fat versions.
 - **Cut down on saturated fat in cooking:** Saturated fat increases cholesterol. Therefore, we should avoid these fats e.g. all animal fats, coconut oil, palm oil. Rather than we should increase the use of unsaturated fats like olive oil, ground nut oil, sunflower oil, soybean oil.
 - **Reduce salt intake:** High blood pressure is a major risk factor for cardiovascular disease. Diets high in salt increase risk of hypertension.
 - **Increase complex carbohydrates and fibres:** Emphasize foods with complex carbohydrates—such as fruits and vegetables, whole-grain products, and legumes (dried beans and peas)—that are low in calories and high in fibres. Eat more water-soluble fibres, such as that found in oat bran and fruits. This type of fibres can significantly lower your blood cholesterol level when eaten in conjunction with a low-fat diet.
 - **Eat fruits and vegetables:** To protect the heart, we should eat plenty of fruits and vegetables.
 - Avoid Alcohol and Smoking
3. **Harkat wa Sukoon-e-Badani^{3,15, 16}:** Physical activity and rest in *etadaal* are essential for healthy life. Excess or decrease in any of this may lead to disease. Therefore CVD to prevent CVD moderate physical activity and rest are very essential.

4. **Harkat wa Sukoon-e-Nafsani**^{15, 16}: As it has been proven that mental stress plays a significant role in the development of CVD. Therefore to avoid CVD *harkat wa sukoon-e-nafsani* in moderate amount are necessary.
5. **Istifragh wa Ehtbas**^{15, 16}: Excess of LDL and triglycerides are harmful to body and cardiovascular system. They should be removed from the body. And HDL and several vitamins and minerals help to protect the body and Cardiovascular system specially. They should be retained in the body.
6. **Naum wa Yaqzah**^{15, 16}: Moderate sleep prevent the stress and help to live healthy and avoid CVD.

Treatment of CVD in Unani Medicine: Ancient Unani physicians were aware of the various cardiac ailments. Several drugs either singly or in combination have been used by ancient as well as modern Unani physicians. *Advia Qalbiyah* is a book written by Ibne Sina in which 62 single drugs have been described which can be used in cardiac diseases^{9, 11}. The efficacy of most of these drugs has been proven by several researches. The concept of *Mufarreh Qalb* and *Muqawwi Qalb* is found only in Unani System of Medicine. Unani physicians follow a specific regime (*Usool-e-Ilaj*) to treat Cardiac diseases.

The *Usool-e-Ilaj* for cardiac diseases is as follows:^{2, 3, 12, 13, 19, 20}

- Complete rest
- Avoid physical and mental stress
- Avoid smoking and alcohol consumption
- Light exercise like walking in morning
- Minimum fat should be used in diet
- Weight reduction if the patient is obese
- Correction of *Sue Mizaj* if present.
- If patient is suffering from other diseases like hypertension, diabetes etc then these diseases should be treated first
- Drugs either singly or in combination with following actions should be used^{9, 11}
 - *Musakkin-e-Alam* e.g. *Itr-e-Gulab* or *Itr-e-Hina* for local application, *Afiyoon*, *Ajwain khurasani* orally
 - *Mufatteh Urooq* e.g. *Izkhar*, *Kasni*, *Suddab*
 - *Mufatteh Sudade* e.g. *Aftimoon*, *Sunbuluttib*, *Badyan*
 - *Mufarreh wa Muqawwi Qalb* e.g. *Abresham*, *Zafran*, *Mushk*, *Khamirah Jaat*

CONCLUSION

There is not a single cause of CVD but it is multifactorial disease caused by many factors. The modern life style is the main culprit of it. Several regimes and drugs having cardioprotective and cardiotonic properties have been described in classical literature of Unani System of Medicine. Thus it may help in the prevention as well as treatment of CVD without any side effect.

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