

An Exploratory Study on Public Awareness and Action Towards Heart Attack

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ABSTRACT

Cardiovascular disease is a leading cause of death since past times and are proved to be a significant health burden with an ever-increasing frequency. It can be treated during its premature stage if the infected person has knowledge about its symptoms. Its early diagnosis can be done by various methods like giving the patients early thrombolytic therapy which offers beneficial surviving benefits and treatment. It occurs in various stages. After the first heart attack, most people lives a long productive life but overall the life expectancy decreases by about 8 to 10%. Its also known as myocardial infarction (MI) and is a serious medical emergency in which blood supply is suddenly blocked which is usually due to some blood clots . A heart attack is a life-threatening medical emergency. The sooner you can get medical treatment that restores normal blood flow to your heart, the better your chance of a successful outcome.

Keywords: Acute myocardial infarction, heart attack, awareness, early symptoms, risk factor, herbal medicament's, treatment.

INTRODUCTION

1.1 Introduction :

A heart attack happens when there is a loss of blood supply to part of the heart muscle. It often results from a blockage in a nearby artery.

A heart attack is different from cardiac arrest, in which the heart stops working completely. Both are medical emergencies, and without treatment, a heart attack can lead to cardiac arrest.

1.2 Types of Heart Attacks:

1.2.1 Acute coronary syndrome:

Acute coronary syndrome (ACS) is when the arteries which carry blood, oxygen, and nutrients get blocked. They occur when the heart doesn't get enough blood supply. Heart attacks are a form of acute coronary syndrome and also known as myocardial infarction.

The three types of heart attacks which come under this are :

- ST-segment elevation myocardial infarction (STEMI)
- non-ST segment elevation myocardial infarction (NSTEMI)
- coronary spasm, or unstable angina

“ST segment” refers to a type of graph that appears on an electrocardiogram (which is a display of your heartbeat). Only a STEMI is able to show the elevated segments. Both STEMI and NSTEMI heart attacks can cause enough damage to be considered major heart attacks.

01) STEMI: known as “The classic or major heart attack” :

STEMI is a major type which comes into mind when people think of a heart attack. A STEMI usually occurs when a coronary artery becomes completely blocked. Under this a large portion of the muscle stops receiving blood. It’s a serious type of heart attack that can cause serious damage’s.

SOME COMMON SYMPTOMS AND SIGNS OF A STEMI;

A STEMI has the typical symptom of pain in the center of the chest. This discomfort in chest may be described as a pressure or stiffness or a feeling of cramp rather than a sharp pain. People who experience STEMI also expresses feeling of pain in one or both arms or their back, neck, or jaw.

Other Symptoms May Include:

- Nausea
- Shortness of breath
- Anxiety
- Light headedness
- Breaking out in a cold sweat

02) NSTEMI: (NON-ST SEGMENT ELEVATION MYOCARDIAL INFARCTION)

This also leads to blockage in coronary artery but in this the affected coronary artery is only partially blocked. A NSTEMI won’t show any change in the ST segment on the electrocardiogram graph.

A coronary angiography is one of the ways which show the degree to which the artery is blocked. Compared to STEMI, an NSTEMI is typically less damaging to your heart.

03) CAS : (CORONARY ARTERY SPASM)

Also known as coronary spasm or silent heart attack or unstable angina or heart attack without blockage. The symptoms are same as a STEMI heart attack, may be mistaken for muscle pain, indigestion, and more. It occurs when one of the heart’s arteries contracts so much that the blood flow stops or becomes excessively reduced. Only blood test results can tell us if we’ve had a silent heart attack. There is no everlasting damage during a coronary artery spasm. Silent heart attacks aren’t as serious but they do increase the risk of another heart attack or one that may be more serious.

1.3 Risk factors that can easily lead to cardiovascular disease or myocardial infarction may include :

- High blood pressure (hypertension).
- High cholesterol (hyperlipidemia).
- Tobacco use (including vaping) or Overuse of alcohol.
- Type 2 diabetes.
- Family history of heart disease.
- Lack of physical activity.
- Having excess weight or obesity.
- Diet high in sodium, sugar and fat.
- Misuse of prescription or recreational drugs.
- Gestational diabetes.
- Chronic inflammatory or autoimmune conditions.

- Chronic kidney disease.

1.4 Prevention:

Heart attack mainly depends upon the way of living, eating, and taking care of our body in our daily lives. Eating healthy and keeping our body fit automatically reduces the chances of heart attack to a minimum.

WAYS TO HELP PREVENT A HEART ATTACK MAY INCLUDE:

- Eating a healthy, nutritional, and heart-friendly diet
- Maintaining an average body weight
- Quitting or avoiding smoking, drinking alcohol, and other bad habits that are harmful to the heart or other vital organs like kidneys, lungs, etc.
- Getting regular exercise, or doing yoga is also very beneficial.
- Reducing stress, by various means like talking to loved ones, or doing things which makes us happy. Way through which a person can reduce or manage stress may include meditation, yoga, or relaxation techniques.
- Improving cholesterol levels can also help prevent a heart attack. As cholesterol accumulation on the walls of arteries is one of the main causes of blockages and further leads to a heart attack.

1.5 Heart attack symptoms:

As heart attacks can be deadly, it is essential to recognize the warnings as soon as possible and contact emergency services.

Some common symptoms include;

- a feeling of pressure, tightness or pain in the chest
- pain that spreads through the shoulders to the arms, neck, jaw, or back
- a feeling of bulkiness in the chest
- a feeling of heartburn or indigestion
- nausea and vomiting in some cases.
- shortness of breath
- feeling lightheaded or Dizziness
- in some cases, anxiety which feel similar to a panic attack
- coughing or wheezing, in case if fluid builds up in the lungs

Women are somewhat more likely to suffer from heart attack than men. They also go through the same symptoms as men on some higher levels.

Also as the estrogen level in women is significantly more before menopause as compared to after the menopause and higher levels of estrogen can reduce the risk of a heart attack. As a result, chances in women for a heart attack eventually increases after menopause than before menopause.

1.6 Complications after heart attack :

People experience various complications after suffering from a heart attack depending on how critical the event was, these may include:

- **Depression:** This is common after a heart attack but spending time with loved ones and support groups can help a lot.
- **Edema:** Fluid accumulates and causes swelling in the ankles and legs.
- **Arrhythmia:** The heart beats improperly, either too fast or too slowly.
- **Angina:** Insufficient oxygen reaches the heart which causing chest pain.

- **Heart failure:** The heart can no longer pump effectively which leading to fatigue and difficulty breathing.
- **Myocardial rupture:** This is a tear or rupture in a part of the heart resulting after the damage caused by a heart attack.

Ongoing treatment and monitoring can help to reduce the risk of these complications.

1.7 Heart attack in relation to diabetes:

People with diabetes are more likely to have minor heart attacks as compared to people who don't have diabetes. In other words, if you have diabetes, you may not experience the typical symptoms associated with a heart attack, especially chest pain. Many studies have been implemented to understand more effectively that why people with diabetes have minimum chances to experience heart attack symptoms.

Neuropathy (which is a type of nerve damage also proves to be a common hurdle in finding out the symptoms of heart attack as it may interfere with the ability to sense chest pain caused by a heart attack. According to American Heart Association new research approximately 90% of people with type 2 diabetes are at higher risk of chronic heart disease or stroke within past 10 years.

Because of this risk, it's important that people with diabetes keep their blood sugar levels under control, get periodic blood tests to check cholesterol levels, and work closely with a doctor to ensure their diabetes is managed well and there is no danger or risk.

REVIEW OF LITERATURE

Frishman et al., 2009; Traditional herbal and plant-derived extracts are becoming main stream in scientific Research. These are showing their importance in the prevention and treatment of diseases. Naturally derived products are the major sources of new drugs. This has proved to be a motivational cause for the renewed popularity of traditional herbal and plant-derived medicaments among researchers.

Another reason for reattaining the interest in medicinal plant products is that various rural communities in developing countries found that the traditional herbal and plant derived remedies had controlled the disease more efficiently. Also in particular, this is mainly due to the fact that plant-based medicines are a cheaper alternative with fewer/or minimal side effects.

Cragg and Newman, 2013: Traditional herbal medicine or ethnomedicine, defined as the comparison of medicine based on bio-active compounds found naturally from plants and animals and practiced by various ethnic groups. Traditional herbal medicine historically depend on natural resources as medications. Historically, herbs are generally defined as any form of plant or plant product or plant extracts acting as the basis of the first drugs used in traditional medicine systems of many cultures or civilizations. Plants and herbs have always been a common source of medications. They can be either in the form of traditional extracts or as pure active compounds.. Famous herbal drugs from plant sources include aspirin from the *Salix alba* L. tree, atropine from *atropa belladonna* (known as deadly nightshade) camphor from *Cinnamomum camphora* (camphor tree) , cocaine from *Erythroxylum coca* (coca plant) ,nicotine from *Nicotiana tabacum* (tobacco).The discovery of antimalarial drugs, like quinine from the bark of *Cinchona* tree or from other herbal plants like *Plumb-ago indica* Linn., *Artemisia annua* Linn., *Piper chaba* Hunt., *Kaempferia galanga* Linn represent a typical example of how ethnomedicine can guide drug discovery. Even though the many successes of using natural extracted materials for drug production, in late 1980's, advances in combinatorial chemistry shifted the focus of drug discovery efforts from naturally originated products to synthesis at the laboratories.

Abdulkareem Mohammed AL-Shami (2020) et al , Cardiovascular disease (CVD) is the leading cause of death worldwide, A heart attack is defined as the blockage of arteries supplying blood and oxygen to the muscles and is usually chest pain, difficulty breathing and abdominal pain. neck and arms.

Many risk factors such as high blood pressure, diabetes mellitus, obesity, high cholesterol, physical inactivity, poor diet, smoking, stress and atrial fibrillation can cause a heart attack. Important factors for heart disease play an important role in the development of ischemic heart disease. Therefore, knowledge and awareness of these CVD risks plays an important role in preventing CVD and its associated complications. Many studies show that a lack of knowledge about diseases that may be associated and low literacy in developing countries are associated with poor disease outcomes. Thus, CVD has been reported to cause higher hospitalizations and increased mortality. One way to reduce CVD burden in the general population of 8-10 is to control risk factors like fatty food consumption, obesity, lack of exercise, smoking, stress too much, diabetes, body, inactivity, pressure).

Abdullah S. A. Assiri (2020) et al, Ischemic Heart Disease (IHD) is the result of restricted blood supply to the heart muscle. In more than (95%) patients, IHD is due to decreased coronary blood flow from coronary atherosclerosis; coronary heart disease. The term is therefore often used to describe this condition. According to the statistics of the World Health Organization (WHO) dated 10 May 2017, 17.7 million people worldwide die from cardiovascular disease (CVD) every year, which accounts for 31% of the total population death in the world. Of these deaths, almost 80% are due to heart disease and stroke 7.4 million due to coronary artery disease. In Saudi Arabia, 24.25% of deaths were due to heart disease.

The most common symptoms are chest pain or discomfort, usually with exercise, after a meal, or other times as needed. This phenomenon is called stable angina and is associated with coronary artery. Angina also includes chest tightness, heaviness, pressure, numbness, fullness, or pressure. Angina pectoris of varying severity, nature, or frequency is called unstable angina and can lead to myocardial infarction. Among adults who present to the emergency department for unexplained pain, approximately 30% of pain is due to IHD. Angina, sweating, shortness of breath, nausea or vomiting, and dizziness are symptoms of a heart attack or myocardial infarction and urgent treatment is essential.

IHD is an important disease of the period. One study reported that approximately half of IHD victims died within an hour of arrival at the hospital after the appearance of symptoms Delays in the onset of symptoms and treatment can occur at various stages of pre hospital management, including patient delays and transport delays. Ignorance of IHD symptoms is the main cause of patient delay. The need for early access to medical care and additional treatment is necessary to ensure the survival. This includes recognizing the warning symptoms of IHD and calling the emergency services as soon as possible. This study aimed to evaluate information on IHD symptoms among the population in Saudi Arabia and to explore its association with participants' health characteristics, as well as to explore measured public needs for access to further education and quality of life in our communities.

Yuba R. Limbu (2006) et al, Almost 50% of people who die from a heart attack die before the tack reaches the hospital. Hospital has been reported to have a very high death rate from heart attack, and most deaths from heart attack occur within 1 hour of the onset of acute symptoms. Many cardiac arrests occurred before patient arrived at the hospital. Advances in improved rehabilitation in optimal operative time after myocardial infarction have reduced mortality. Timely and appropriate management ensures that IM-benefits survival. Early thrombolytic therapy and restoration of coronary patency improve survival, early treatment in heart patients. The survival benefit of has been demonstrated in several studies. For maximum results, follow the established thrombolytic regimen timed. To get the best results from re-perfusion

therapy, it is important that patients arrive at the hospital as soon as possible as soon as symptoms appear. Many factors affect the time of arrival of patients to the hospital. Patient awareness of a heart attack plays an important role in influencing the patient's treatment. Finding behavior after the attack, inadequate understanding of cardiac symptoms often slows the patient down.

Rosa Liperoti (2017) et al, Herbs are often used for medicinal purposes, including the treatment of heart disease. Unlike conventional medicines, herbal medicines do not require clinical trials and regulatory approvals before being marketed, so their efficacy and safety are less proven. In this review, we have collected available evidence on herbs most commonly used in cardiovascular medicine. We found that the use of these drugs for heart disease is generally not supported by scientific evidence. Although most of these drugs act on biological processes related to the cardiovascular system, information about their treatment is not available.

Potential side effects have been identified, including the risk of drug use, and the possibility of contamination or substitution with other drugs is a common feature. Physicians should remember to evaluate the use of herbs with patients and discuss the benefits and side effects with them. Herbs have been used as medicine throughout history, but continues to be used even today.

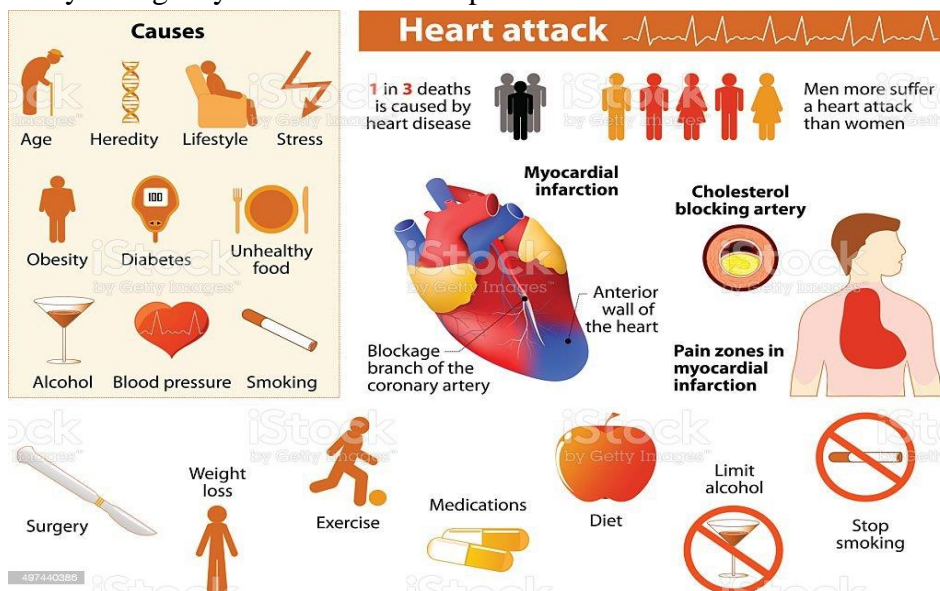
AIM & OBJECTIVES

AIM:

An exploratory study on public awareness and action towards heart attack.

OBJECTIVE:

1. The topics which are presented in the article about heart attack are very much useful and beneficial and increases one's knowledge about various aspects of heart attack covering the causative agents or we can say the risk factors, symptoms, complications and prevention's.
2. Raise awareness and improve cardiovascular health and quality of life.
3. It mainly stresses on the importance of a healthy lifestyle in order to prevent various cardiovascular diseases like heart attack.
4. To ensure timely emergency care and hence improve the chance of survival.



TREATMENT

4.1 Parameters and methods for the treatment:

With every passing minute after a heart attack, more number of heart tissues are damaged or dies. Urgent and quick treatment must be needed to fix the blood flow and to restore the oxygen levels. Oxygen is given immediately. Heart attack treatment mainly depends on whether there's a partial or complete blockage of blood flow.

4.1.1 Right time to see a doctor :

It is important that people seek medical treatment at the first signs of a heart attack. Untreated heart attacks and taking the symptoms lightly can lead to further serious complications or death. With early treatment, most people recover from a heart attack. It is important to get medical help immediately if someone is experiencing the symptoms of a heart attack. Calling an ambulance enables treatment to begin up to 50/60minutes sooner than the people who arrive at the hospital by car or own means. People experiencing heart attack symptoms are not advised to drive themselves.

4.1.2 Waiting for emergency medical attention:

In between the time from getting to the hospital and waiting for treatment a person should make sure that they have taken there medications (if previously prescribed by the doctor) and past record of any medical treatments with them. Examples of such heart medication include beta-blockers , nitroglycerin or Thrombolytics etc.

4.1.3 Immediate treatment:

Immediate treatment at the hospital or even at home, even in the absence of a diagnosis, may include:

- aspirin, to prevent further blood clotting by making blood less denser.
- nitroglycerin, to relax the arteries to improve blood flow
- oxygen therapy, to increase the amount of oxygen in a person's body
- morphine, to relieve symptoms of pain.
- blood thinner medication, to help dissolve the blockage in the artery

Once a person has received a heart attack diagnosis, a doctor may further prescribe medications to dissolve blood clots or perform surgery, or both based on the level of attack.

Doctors can perform a procedure to suction the clot or place a metal tube called a stent to open up the blockage. They will also prescribe other medicines to reduce the risk of future heart attacks.

4.1.4 Medication:

A cardiovascular disease like myocardial infraction can be treated by both the allopathic and ayurvedic or herbal treatments or medications.

Its medical treatment may includes :

- **First aid:** consist of oxygen therapy and drugs that reduce blood clotting and help in maintaining blood flow to normal.

Some examples of common medicines are ; Aspirin , Nitroglycerine.

- **Thrombolytics:** these are the clot-busting medicines which are recommended to dilute the clots formed in the arteries.

Some examples of common medicines are ; Tenecteplase . Alteplase . Urokinase

- **Supportive medicines:** includes ACE inhibitors which are used to reduce strain / pressure on the heart. It includes Anticoagulants, beta blockers, or statin medicines.

Some examples of common medicines are ; Quinapril . Clopidogrel . Atenolol Atorvastatin.

- **Therapy:** Its therapy includes rehabilitation which is a medically supervised and personalized program which may include exercise, yoga, lifestyle changes and a proper diet .

Now , except these allopathic and medical treatments, there are also number of ayurvedic and herbal treatments intended for the treatment of cardiac diseases or myocardial infractions (heart attack).

4.2 Herbal treatment of heart attack:

Traditional Medicines have been in use since ancient times in the health care. However, with the emergence of the pharmaceutical industry early in this century there use is decreased .

Herbs, generally defined as any form of plant or plant products or plant extracts which formed the basis of the drugs or used as drugs in traditional medicine systems. Plants and herbs have always been a common source of medications, either in the form of traditional extracts or as pure active compounds.

4.2.1 Some of herbal or home remedies which are easily available in home and are proven to be effective in the treatment of CVD or heart attack are:

1.1 Red Chili

1.1.1 Introduction:

It is believed that origin of red chili is from Mexico and now it is grown in tropical and subtropical regions of the United States of America, Indian, Japan, Turkey, and African Countries.

1.1.2 Biological Source :

Scientific Name - *Capsicum annuum*

Family – Solanaceae

Chemical constituents – Capsaicin, Dihydrocapsaicin, Nordihydrocapsaicin, Capsanthin, Capsorubin, Nonivamide, Nordihydrocapsiate, Caspsiate, etc.

1.1.3 Scientific Classification :

Taxonomic placement	Scientific name
Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Solanales
Family	Solanaceae
Genus	<i>Capsicum</i>
Species	<i>annuum</i>
Botanical varieties	var. glabriusculum (synonym var. aviculare) var. annum

1.1.4 Medicinal Properties :

Red Chilli may have following properties :-

Analgesic, Anti-inflammatory, Antimicrobial, Antioxidant, Antiulcer, Anti-cancer, Memory enhancing, Blood pressure Lowering, Cholesterol lowering, Anticoagulant

1.1.5 Red Chilli in relation to heart:

- Copsaicin present in red Chilli prevents Cholesterol and LDL oxidation, lowers cholesterol level which is main reason for heart arteries blockage, helps in proper blood circulation, reduces risk of heart attack and strokes.

- One or half spoon of red chilli powder in a glass of warm water for few weeks helps in prevention of heart diseases.



Fig.- Red chilli

1.2 Lemon

1.2.1 Introduction :

Citrus limon is a tree having yellow fruits which are edible and evergreen leaves. The main material of the lemon tree is its fruit. Essential oils and juice is obtained from the lemon fruit. It is strong anti-oxidant rich in vitamin C (essential in scurvy).

1.2.2 Biological Source :

Scientific Name – *Citrus limon*

Genus – Citrus

Chemical constituents – Citric acid, carboxylic acid, limonene, β -pinene, γ -terpinene, sabinene, mycrene, geranial, neral, etc.

1.2.3 Scientific classification:

Taxonomic placement	Scientific name
Kingdom	Plantae
(unranked)	Angiosperms
(unranked)	Eudicots
(unranked)	Rosids
Order	Sapindales
Family	Rutaceae
Genus	<i>Citrus</i>

1.2.4 Medicinal Properties :

Lemon may have following properties:-

Anti-cancer, Antioxidant, Anti-inflammatory, Antimicrobial, Anti-allergic, Anti-parasitic, Hepatoregenerating effect, Anti-diabetic, Anti-obesity, etc.

1.2.5 Lemon in relation to heart :

- Lemon is strong anti-oxidant which helps in improving blood circulation, reduces swelling in arteries, reduces blood cholesterol level, reduces oxidative effect in blood circulation, etc.

- Use of mixture of little amount of honey, black pepper powder and juice of one lemon, once or twice a day for few weeks helps in prevention of various heart diseases.



Fig.- Lemon

1.3. Arjuna Tree Bark :

1.3.1. Introduction :

Arjuna is a very potent cardio protective agent. Arjuna Tree bark powder is a natural remedy which is used for heart ailments since ancient time (Vedic period). It is mentioned in various Indian medicinal texts including Charaka Samhita, Astang Haridayam, Sushruta Samhita.

1.3.2. Biological Source ;

Scientific Name – *Terminalia Arjuna*

Family – Combretaceae

Chemical Constituents - Polyphenols, flavonoid, tannin's, triterpenoids, saponins, sterols and minerals.

1.3.3. Scientific Classification :

Taxonomical placement	Scientific name
Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Myrtales
Family	Combretaceae
Genus	<i>Terminalia</i>
Species	<i>Terminalia arjuna</i>
Common name	Arjuna

1.3.4. Medicinal Properties –

Arjuna tree bark may have following properties:-

Inotropic, anti-ischemic, antioxidant, blood pressure lowering, anti-platelet, hypolipidemic, antiatherogenic, and antihypertrophic.

1.3.5 Arjuna Tree Bark in relation to heart –

The bark of the Arjuna tree is beneficial in the treatment of heart-related diseases such as high cholesterol, blood pressure, blockage in the arteries and coronary artery disease. It keeps the cholesterol level maintained, and makes the heart healthy. Its bark contains natural oxidizing agent. The bark of Arjuna tree is used as a medicine to avoid heart attack. You can consult an Ayurveda doctor regarding the use of Arjuna bark.



Fig- Arjuna tree bark

1.4 Alsi (Linseed) :

1.4.1. Introduction ;

Linseed is one of the oldest crops which is being cultivated since old times. It is essential food component because of rich content of α -linolenic acids (ALA, Omega-3 fatty acid), lignans, etc. It has potential health benefits such as reduction of cardiovascular diseases, arthritis, atherosclerosis, diabetes, cancer, etc.

1.4.2. Biological source :

Scientific name – *Lin-um usitatissimum*

Family – Linaceae

Genus – Lin-um

Chemical constituents – Oil, fatty acid, α -linolenic acid, oleic acid, palmitic acid, linolenic acid, stearic acid, arachidic acid, palmitoleic acid, myristic acid, etc.

1.4.3. Scientific Classification:

Taxonomical Placement	Scientific Name
Kingdom	Plantae
Clade	Angiosperms
Clade	Eudicots
Clade	Rosids
Order	Malpighiales
Family	Linaceae
Genus	<i>Linum</i>
Species	<i>L. usitatissimum</i>

1.4.4. Medicinal Properties:

Linseed has various medicinal properties such as – Anti-hypertensive, Anti-Tumour, Anti-thrombotic, Anti-diabetic, cholesterol lowering, Antioxidant, Anti-fungal, etc.

1.4.5. Linseed in relation to heart:

- Lin-seeds helps in reducing swelling and blood pressure. It is one of the best sources of α - linolenic acid. It helps in keeping clogged arteries clear and improves overall heart’s health.
- Linseed is useful in prevention of heart blockage and it also reduces the risk of heart attack.
- One spoon of linseed mixed in 1 glass of water or juice or smoothie may help in preventing various heart diseases.



Fig.- Lin-seeds

1.5 Ginger:

1.5.1. Introduction:

Ginger is a flowering plant whose roots are frequently used as a spice and in home remedies. It is believed to have come from the tropical rain forests of southern Asia and the Indian subcontinent, where the ginger flower exhibits certain genetic variants.

1.5.2 Biological source:

Scientific name - *Zingiber officinale*

Family – Zingiberaceae

Scientific Classification –

Taxonomical Placement	Scientific Name
Kingdom	Plantae
Clade	Angiosperms
Clade	Monocots
Clade	Commelinids
Order	Zingiberales
Family	Zingiberaceae
Species	<i>Z. Officinale</i>
Binomial name	<i>Zingiber officinale</i>

1.5.3 Medicinal Properties –

Ginger have following medicinal properties –

Anti-ulcer, Aanticholinergic, Antioxidant, Anti-inflammatory & rheumatologic Properties, Analgesic effect, Blood movement & anti-cramp effects, Cholesterol low & hypotensive properties, Anti microbial effects

1.5.4 Ginger in relation to heart –

- Ginger’s cardio tonic, anti-hypertensive, anti-hyperlipidemic, and anti-platelet properties all contribute to its cardio-protective effects.
- Ginger acts as a beneficial medicine to open the blockage of the heart. By consuming it, the immunity of the body boosts. Apart from this, the symptoms of heart disease are reduced. Other information can be taken from an Ayurvedic doctor.
- Ginger’s cardio tonic, anti-hypertensive, anti-hyperlipidemic, and anti-platelet properties all contribute to its cardio-protective effects.



Fig - Ginger

1.6. Garlic:

1.6.1 Introduction –

Garlic belongs to the Allium genus of onion. One of the first cultivated medicinal herbs is garlic. Garlic has a reputation as a potent herb that dates back more than 5000 years. It is indigenous to central Asia and North – eastern. Similar to how it is seen as an essential component of Indian traditional medicine, including Ayurveda, Tibbi , Unani and so on. It has long been recognized for its curative and preventive powers in treating a variety of illnesses, including infections malignancies (cancer) and cardiovascular conditions. Garlic is thought to be particularly effective for lowering blood pressure, lowering triglyceride and cholesterol levels and preventing platelets aggregation.

1.6.2. Biological source –

Scientific name - Allium sativum

Family – Alliaceae

1.6.3 Scientific classification –

Taxonomical Placement	Scientific name
Kingdom	Plantae
Division	Magnoliophyta
Class	Liliopsida
Order	Asparagales
Family	Alliaceae
Subfamily	Allioideae
Tribe	Allieae
Genus	<i>Allium</i>
Species	<i>A.sativum</i>
Binomial Name	<i>Allium sativum</i>

1.6.4 Medicinal properties:

Garlic may have following properties;

Anti-oxidant, Anti-inflammatory, Antistress properties, Anticancer Properties, Treatment of cardiovascular disease, Regulation of blood pressure, Anti diabetic property, Immunity booster, Analgesic effect, antimicrobial effects

1.6.5 Garlic in relation to heart:

Garlic had been associated to health advantages including the ability to treat colds and lower cholesterol, and blood pressure. Although garlic contains the vitamin C and B6, iron and selenium, it is thought that a molecular as allicin, a type of antioxidant is, what gives it is powerful effects.



Fig - Garlic

1.7 Turmeric:

1.7.1 Introduction:

The rhizomes of *curcuma longa*, also known as turmeric, is bristled. Turmeric is fragrant, stimulating, and carminative in addition to being a mild diuretic. One of nature’s most potent medicines is turmeric. Curcumin is the substance in turmeric that is active. In India, where it was probably first employed as a colour, turmeric has been utilized for more than 2500 years. The world’s tropical and subtropical regions are home to turmeric plants. Turmeric plant is widely cultivated in temperate countries and is native to southern Asia. Its stem is short, its leaves are tufted, and its rhizomes are small and dense.

1.7.2 Biological source:

Scientific name - *Curcuma longa*

Family - Zingiberaceae

1.7.3 Scientific classification:

Taxonomical Placement	Scientific Name
Kingdom	Plantae
Order	Zingiberales
Family	Zingiberaceae
Genus	<i>Curcuma</i>
Species	<i>C.longa</i>
Binomial name	<i>Curcuma longa</i>

1.7.4 Medicinal properties:

Turmeric may have following properties;

Skin Treatments, Anti-fungal Property, Bacterial and Viral Infections, relieve from arthritis, Controlling Diabetes, Heart Disease, Increase the antioxidants in body, Indigestion, Cancer, Management of Obesity

1.7.5 Turmeric in relation to heart:

Cur-cumin is an extremely effective anti-inflammatory and antioxidant, according to studies. The anti-inflammatory qualities of cur-cumin make it a perfect addition to any diet that promotes heart health because inflammation plays a significant role in a number of illnesses, notably heart disease.



Fig - Turmeric

1.8 Tulsi:

1.8.1 Introduction:

Holy basil, also known as tulsi (*Ocimum sanctum* L.), is a fragrant herb native to the Indian subcontinent that is highly prized for its culinary and healing properties. It has been used in Ayurvedic medicine for over three thousand years. This tiny plant is grown and revered in Hindu temples and homes throughout India. This is also referred to as Vishnu-Priya, Tulsi in Sanskrit, and Kala Tulsi in Hindi.

1.8.2 Biological source:

Scientific name - *Ocimum tenuiflorum*

Family - Lamiaceae

1.8.3 Scientific classification:

Taxonomical Placement	Scientific name
Kingdom	Plantae
Clade	Tracheophytes
Clade	Angiosperms
Order	Lamiales
Family	Lamiaceae
Genus	<i>Ocimum</i>
Species	<i>O. Tenuiflorum</i>
Binomial name	<i>Ocimum tenuiflorum</i>

1.8.4 Medicine properties:

Tulsi may have following properties;

Anti-inflammatory, Anti stress, Antifungal, Antibacterial, anti-pyretic, anti-plasmodial, anti-cancer, anti-emetics, anti-coagulant

1.8.5 Tulsi in relation to heart:

- Tulsi is very beneficial to avoid heart attack.
- Juice of 25-30 Tulsi leaves, a lemon and honey (if you do not have diabetes) in small amount, mixed with water can help in preventing heart blockage.
- This is a home remedy for heart blockage.



Fig – Tulsi

DISCUSSION

According to the World Health Organization (WHO) cardiovascular disease (CVD) is the leading cause of morbidity and mortality worldwide, constituting significant public health problems globally. After road traffic accidents and old age deaths, CAD are the third most common cause of fatality in hospitals, making it a growing health concern. Consequences in myocardial infarctions are basically time-dependent. It is, therefore, necessary that patients recognize the early symptoms of myocardial infarction and pursue medical mediation as soon as possible. Common symptoms of heart attack may include pain in the centre of the chest and sweating, whereas nonspecific symptoms include, pain in the arms and shoulder, back, difficulty in breathing, nausea, vomiting, dizziness, sleep disturbances and fainting. Symptoms of heart attack may start to disguise by the symptoms of chronic disease as patient enters into older age which leads to delay on seeking health. This automatically results in increased number of deaths. A heart attack usually happens when blood flow to the heart is obstructed or cut off. If heart is not getting sufficient oxygen rich blood, it can cause damage to the affected area. As a result of this, the heart muscle automatically begins to die. When your heart isn't getting the required blood and oxygen that it needs to work properly, then the chances of heart failure and other serious complications automatically increases. A heart attack is a life-threatening medical emergency. The sooner you can get medical treatment that restores normal blood flow to your heart, the better your chance of a successful outcome.

FUTURE PERSPECTIVE

1. Heart attack is the most common occurring disease nowadays worldwide. While there have been major advances in this field, the patients are still at higher risk. The lifestyle eating pattern, lack of physical activity, stress hypertension extra are increasing day by day which will further may increase the mortality rate in future to higher levels if left ignored.
2. Among all the risk factors, hypertension is one of the main root cause of heart attack which results due to blood thickness, cloth formation and increased cholesterol levels in blood. This occurs due to increased intake of alcohol, junk food, lack of fibre rich diet intake by individuals.
3. Now a days, youngsters are consuming more of these unhealthy food items, which will lead to occurrence of heart attack among them very soon in future. This will be treated in future and mortality rates will be reduced to some extent if individual will take proper follows, checkups on time and maintain his lifestyle properly by doing regular exercises, increased fibrous diet intake, avoid alcohol

and high cholesterol food, etc. Other advancements may also be used, such as genotyping, biomarkers in case of genetic predisposition of heart attack in family.

4. Technology advancement is increased in day-to-day life, 3D heart printing will also be used in future through totipotency technique by scientific methods. Advancements may also be used to preserve the heart for end-staged heart failure patients by using proper organ care system. Other methods may also be applied in future to prevent and cure heart attack such as advancement in methods of cardiac training laboratory, examinations (Troponin- T test), ECG monitoring optimization of risk factors at early level, early nutritional and psychological assessment.
5. Individual to individual detection and early treatment maybe planned by using digital methods such as health apps which will help to analyse subjective chief complaints/symptoms related to heart attack such as anxiety, chest pain, palpitations, dizziness, shortness of breath, irregular heart rhythm normal pulse rate etc.
6. Health apps will also help to detect ECG pulse rate during physical activity and resting state. This will help the individuals to keep in touch with health professionals digitally especially when they will not be able to take regular follows in health facilities or centers.

SUMMARY & CONCLUSION

The people have a poor understanding of and response to the signs and symptoms of HA. In a similar vein, the majority of respondents did not know about all five HAS, while the majority of respondents knew about chest pain as a HAS but were unaware of other HA symptoms, and roughly one third of respondents did not know about any HAS. However, when asked whether the trap question is a sign of HA, more than half of respondents responded "yes," indicating that they were unaware of HAS. Only a small percentage of respondents correctly identified all five HAS and took the proper action, calling an ambulance, when someone had HAS, whereas one-third of respondents said that calling an ambulance was the acceptable response. To reduce mortality and morbidity, there is an urgent need to raise knowledge of and response to HA symptoms and indications. A few excellent sources of knowledge on HA are social media, educational institutions, and medical camps. Therefore, they should be emphasized when communicating with the general public, given that these methods may assist in reaching the youngest and/or least educated, who appeared to have lesser levels of knowledge.

CONFLICTS OF INTEREST

The authors state that they have no known financial or interpersonal conflicts that would have appeared to have an impact on the research presented in this article.

ABBREVIATIONS USED

1. **MI**: myocardial infraction.
2. **CVD** : Cardiovascular disease.
3. **ACS**: Acute coronary syndrome.
4. **STEMI**: ST segment elevation myocardial infarction.
5. **NSTEMI** : non-ST segment elevation myocardial infarction .
6. **CAS** : coronary artery spasm.
7. **IHD** : Ischemic heart disease.
8. **WHO** : World Health Organization.

9. **Cad:** coronary artery disease.
10. **Et al.:** and others

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