Review Article

ERA'S JOURNAL OF MEDICAL RESEARCH VOL.11 NO.2

DOI: 10.24041/ejmr2024.42

MYTHS AND FACTS OF STABLE ANGINA

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Received on : 05-10-2024
Accepted on : 11-12-2024

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ABSTRACT

Stable angina, characterized by chest pain from decreased blood flow to the heart, is a typical sign of CAD. Stable angina is a common illness, but there are many misconceptions about it, including its origins, symptoms, and available treatments. The purpose of this review is to dispel these myths and offer factual data to enhance our comprehension and treatment of stable angina. Although epicardial coronary stenoses account for over half of angina cases, the symptoms can also be caused by other conditions such microvascular dysfunction or spasms in the epicardial arteries. For people with stable angina, a variety of drugs have been demonstrated to enhance their quality of life and long-term results. Only when the best medical therapies are unable to effectively control the symptoms are revascularization techniques taken into consideration.

KEYWORDS: Angina, CAD, Anxiety, Oxygen, Heart rate.

INTRODUCTION

Angina, which frequently results in feelings of discomfort, pressure, or tightness in the chest, can happen when the heart doesn't obtain enough oxygen. It's critical to realize that angina is a warning indication of a more serious problem rather than an illness in and of itself. Ischemia basically occurs when there is insufficient oxygen-rich blood in a portion of the heart muscle, usually as a result of constricted or blocked coronary arteries. Angina can mimic a heart attack and is frequently linked to coronary heart disease even though it is not a dangerous for life condition in and of itself. It's critical to see a healthcare provider if you suffer from abrupt, chronic angina that doesn't go away with rest or medicine. Angina comes in a variety of forms, including (1).

Stable Angina: When the heart must work harder than normal, such during exercise, stable angina develops. This kind often lasts five minutes or less and has a consistent rhythm. Although the soreness usually goes away with rest or therapy, it might last for months or even years.

Unstable Angina: Even while you're at rest, this kind of angina can strike without warning and without warning. It is mostly brought on by atherosclerosis, A medical disorder marked by the accumulation of plaque, which impedes the heart's functionality in pumping blood. The soreness, which frequently becomes worse over time and lasts longer than five minutes, may continue even after rest or medicine. Since unstable angina might be a warning of an imminent heart attack, anybody suffering abrupt angina should get medical help right once.

Coronary microvascular disease (MVD): The smaller coronary arteries are impacted by coronary microvascular disease (MVD), which is associated with microvascular angina. People may also have sleep issues, exhaustion, poor energy, and shortness of breath in addition to chest discomfort. Microvascular angina usually persists for 10 minutes or more, in contrast to stable angina.

Prinzmetal Angina: Also referred to as variant angina, this uncommon form of the condition frequently manifests while at rest, especially in the early morning or during night. It is brought on by coronary artery spasms, which can be brought on by a number of things, including stress, certain drugs, smoking, cocaine usage, and cold exposure. Despite being a chronic illness, medicines can successfully manage it.

Signs and Symptoms: Angina can cause a variety of chest pains, most typically beginning below the breastbone. Pain, tightness, weight, pressure, squeezing, or scorching are some examples of these

feelings. Other parts of the body, including the throat, back, arms, shoulders, neck, mouth, and teeth, may also experience discomfort. Other symptoms include be weakness, perspiration, heartburn, indigestion, cramps, and nausea and dyspnea. The kind of angina determines how long these symptoms last.

Women's Symptoms: Angina can strike anybody and is frequently brought on by coronary heart disease (CHD) or myocardial infarction (MVD). However, women may have distinct symptoms since MVD is more prevalent among them. Women may experience nausea, vomiting, exhaustion, shortness of breath, and stomach pain in addition to chest pain. It's crucial to keep in mind that cardiovascular disease is the primary cause of mortality for American women, and it disproportionately affects African American women (2).

Risk Factors: Stress, heavy drinking, and recreational drug usage can all cause angina, exposure to smoking-related particle pollution at work, for example, very little action A poor diet caused cholesterol levels to rise. Being overweight or obese For women over the age of 55 and males over the age of 45, hereditary factors are responsible for diseases such as anemia, metabolic syndrome, diabetes, low blood pressure, and heart disease. certain medical procedures and treatments.

Stable Angina

Angina's stability Brief episodes of chest discomfort, tightness, pressure, or squeezing are indicative of stable angina. Frequently, stable angina serves as an indicator of coronary heart disease, wherein obstructed arteries prevent adequate blood flow to the heart. The discomfort experienced is attributed to ischemia, which refers to a reduction in blood supply to the cardiac muscle. Individuals may feel pain during exercise or stressful events, although such episodes generally resolve rapidly. This condition is also known as angina pectoris. Angina discomfort may indicate the imminence of a heart attack (3).

In the context of coronary heart disease, stable angina (SA) is a prevalent clinical feature that affects between 2–4% of persons in western European nations. Angina has a substantial influence on quality of life (QoL) in people with cardiovascular disease (4-5) and is inversely connected with the number of angina episodes (6). SA still significantly reduces many people's quality of life and causes significant impairment, despite improvements in interventional cardiology and several successful pharmacological therapies (7). Due to the difficulty in diagnosing angina, clinical decisions rely mostly on the physician's assessment of the symptom load (8). Regretfully, opinions among medical professionals on the severity of the disease and how it affects patients' quality of life frequently diverge (9). A significant portion of patients, even those who have angina often (≥ once a week or daily), are believed to have angina that is successfully managed by general practitioners (GPs), according to CADENCE study (7). In a cross-sectional observational research, Quintar discovered that 43.3% of participants did not report having angina symptoms. Physicians reported significantly fewer anginal episodes, whereas patients with more accurate diagnoses had significantly greater rates of revascularization, hospitalizations, diagnostic testing, and drug escalation (10). These findings imply that the doctor and the patient disagree on the severity of the symptoms, which might negatively impact clinical therapy and the patient's quality of life. Experts may take into account a number of factors when assessing how the sickness affects certain people. Despite the fact that women experienced a more severe kind of angina than men, doctors were unable to distinguish any differences between the diseases of men and women (9).

Signs of Angina Pectoris or Stable Angina: Chest pain, often characterized as a squeezing or pressing sensation, is the main sign of stable angina. Some people feel as though their chest is full, while others feel as though it is tight or uncomfortable. Although every person's experience is unique, the pain is usually very temporary. The chest may remain the site of the discomfort during an episode, thus, the sensation of pain may propagate to the arms, shoulders, jaw, and neck areas. Fatigue, light-headedness, dyspnea, fast breathing, nausea, palpitations, sweating, and anxiety are other symptoms that may coexist with stable angina. These episodes frequently happen while you're exerting yourself or doing things like climbing stairs. They are more often in the morning, however they can occur at any time. Since the symptoms tend to follow a predictable pattern, individuals with stable angina may find that future episodes are less alarming once they have experienced them before. (4-5, 11)

Coronary heart disease: Because they share certain risk factors, stable angina and coronary heart disease (CHD) are closely linked conditions. One important underlying issue that fuels these symptoms is atherosclerosis. The condition known as atherosclerosis is marked by the buildup of plaque within the arteries, leading to their constriction. This plaque, which is made up of fats, cholesterol, and other substances, inhibits blood flow by adhering to the artery walls. Both stable and unstable angina can be caused by blood clots that develop in these constricted arteries. These clots can reduce the amount of blood that reaches the heart by blocking the artery entirely or

partially. Coronary heart disorder (CHD) and stable angina are caused by a number of risk factors, such as an elevated level of LDL (bad) cholesterol, a deficit of high-density lipoprotein, or HDL, cholesterol, smoking, obesity, diabetes, hypertension, and a family history of heart disease (6, 12-13).

Reasons for Angina Pectoris and Its Impact: Angina pectoris, which leads to myocardial ischemia, the two potential causes of this imbalance are either an increase in oxygen demand or a reduction in the flow of oxygen (due to decreased coronary blood flow, anemia, or other conditions that impair the blood's ability to carry oxygen). Because atherosclerotic coronary plaque narrows the arterial lumen, it lowers coronary reserve and increases the oxygen demand on the heart, making it the most common cause of this imbalance. Sometimes, even when there are no noticeable coronary blockages on an angiography, people may nevertheless have ischemic symptoms and tests that show ischemia. Abnormalities in the coronary circulation, such as microvascular malfunction in the heart or vasospastic angina, may be the cause of this (14- 15).

Heart attacks and other acute coronary syndromes are frequently brought on by an abrupt reduction in blood flow, which happens when an atherosclerotic plaque ruptures or coronary thrombosis causes a blood clot to develop in the artery (16). Numerous techniques, such as revascularization procedures, lifestyle changes, and medications that can assist manage symptoms and improve long-term results, can be used to treat chronic stable angina.

Commonly Held Myths and the Truth about Angina

A condition known as angina, which is a condition marked by chest pain or discomfort that results from a reduction in blood circulation to the heart muscles. It usually means that coronary artery disease or another heart issue is present. Unfortunately, a lot of misconceptions exist around angina that can cause miscommunications and unnecessary stress. In order to provide accurate information and promote a better understanding of angina, we shall dispel some of the most common misconceptions about the condition in this blog post.

Myth 1: A heart attack is the same as angina.

Fact: Although chest pain is a common feature of both angina and heart attacks, they are two different illnesses. Angina is a momentary pain or discomfort brought on by the heart muscles not receiving enough oxygen-rich blood flow. In contrast, a heart attack happens when the heart's blood supply is totally cut off, permanently harming the heart muscle. Angina is not the same as a heart attack, even if it may be a sign of heart issues.

Myth 2: Angina always signals a heart attack is about to happen.

Fact: Angina can be brought on by coronary artery disease as well as other underlying heart disorders. However, angina is not necessarily a sign that a heart attack is imminent.

Myth 3: Angina is only a problem for the elderly.

Fact: Angina is often thought to primarily affect older adults; however, it can also impact younger individuals. Numerous factors, including smoking habits, increased cholesterol, diabetes, obesity, hypertension, and a family carrier with heart disease, can lead to the early development of this condition.

Myth 4: Severe chest pain is a constant symptom of angina.

Fact: Chest discomfort is a frequent symptom of angina, though its kind and severity might vary. Some people may sense a pressure-like sensation, while others may have pain in their back, shoulders, arms, jaw, or neck. Shortness of breath, nausea, fatigue, and dizziness are other signs of angina. It is vital to acknowledge that not all chest pain corresponds to angina, and any form of chest discomfort warrants immediate evaluation by a healthcare provider.

Myth 5: Angina is a trivial health concern.

Fact: Angina must not be dismissed as a minor problem. It is indicative of a serious underlying heart condition that, if neglected, could have dire consequences. The occurrence of angina suggests that there is not enough oxygen reaching the heart, thereby elevating the risk of a heart attack or other complications. Early identification, suitable treatment, and In order to effectively manage angina and reduce the risk of developing heart disease in the future, lifestyle changes are essential (17).

The Prospects for Individuals with Chronic Angina: For those with stable angina, the prognosis may differ even if the annual mortality rate may be close to 3.2%. Among the factors influencing the long-term prognosis are comorbidities, exercise tolerance or capacity, Systolic performance of the left ventricle and the degree of severity associated with coronary artery disease (CAD) (18).

The therapeutic use of nitrates, beta-blockers, and calcium: channel blockers has been established as effective in the treatment of angina. Beta-blockers and calcium channel blockers also demonstrate comparable efficacy to nitrates in the management of this condition (19). Oral nitroglycerin spray and sublingual nitroglycerin tablets can reduce the risk of MI and

increase exercise tolerance due to their rapid absorption. One of the most frequent side effects of nitrate use is headache, which can get so intense that the medication must be stopped (20). Letting extended periods of time pass without nitrate to reduce nitrate levels prior to the subsequent dosage might help avoid tachyphylaxis, or tolerance to continuous nitrate consumption (21-22).

Because of its negative effects and propensity for tachyphylaxis, long-acting nitrates are presently considered second-line therapy, per guidelines. In the 1970s, beta-blockers (BB) were first used to treat angina and hypertension in the UK (23-24). In individuals diagnosed with stable angina, beta-blockers showed no significant effect on mortality or the occurrence of myocardial infarction. Conversely, in heart failure patients with diminished ejection fraction and a recent myocardial infarction, these medications may lead to reductions in both mortality and morbidity (25) Because of their side effects and propensity for tachyphylaxis, long-acting nitrates are currently considered second-line therapy, per the guidelines. BBs were initially used to treat angina and hypertension in the UK in the 1970s (26).

Nicorandil, Trimetazidine, Allopurinol, Ranolazine, and Ivabradine

As an adenosine-sensitive potassium channel opener that incorporates a nitrate element, Nicorandil contributes to the enhancement of coronary blood flow and serves as a preventive agent against coronary artery spasms. Its clinical approval in Japan and various European countries has been substantiated by numerous trials involving patients with stable angina (27). However, because placebo-controlled trials have not shown that it is effective in treating angina, it is not approved for use in the US or Australia. It is used in Europe either in conjunction with other antianginals or as a substitute for nitrates (28). A piperazine derivative called ranolazine works well when taken orally (29), Studies conducted on animals have provided insights that suggest a reduction in the targeted variables intracellular calcium excess by inhibiting late sodium inward current following ischemia (30). When compared to a placebo, ranolazine is equally efficacious as atenolol in treating ischemia and angina (31-32).

Further, it slows the onset of exercise-induced MI and increases treadmill walking duration for angina patients (33). Ranolazine has not, nonetheless, been demonstrated to be helpful in treating ladies with microvascular angina when contrasted with a placebo (34).

Ivabradine inhibits the sinoatrial node current, which lowers heart rate. Because ivabradine's effects are less pronounced at lower heart rates, bradycardia is less prevalent among its users. Because it is use-dependent, greater heart rates are where its effects are most noticeable (35). In contrast to atenolol alone or other BBs, studies have demonstrated that ivabradine, when administered in conjunction with atenolol, considerably enhances exercise duration and lowers angina frequency without inducing severe bradycardia (36). Nevertheless, individuals with severe symptoms may still have symptomatic bradycardia as a side effect of combination treatment. In individuals with stable angina without heart failure, However, in a subset of people with severe angina, it did not function as effectively as a placebo (37).

Antianginal Combination Therapy: Mono therapy often performs as well as combination therapy comprising two or more medications when given at the appropriate dosage (35). There aren't many well-designed studies that show using one class of antianginal drugs together is better than taking another (38). Combining CCB or a long-acting nitrate with BB therapy is often beneficial since it reduces MI, improves exercise tolerance, and decreases the incidence of angina (37). It has been shown that BB and ivabradine function effectively together for patients whose heart rates are higher than 60 BPM, despite safety concerns (35). Prolonged release ranolazine functions effectively either by itself or in combination with BB or CCB, as was previously noted. Additionally, it has been shown that trimetazidine functions effectively when combined with earlier antianginal drugs (39).

DISCUSSION

One prominent symptom of coronary artery disease is stable angina, which arises when the heart muscle lacks adequate oxygenated blood owing to the reduction in the diameter of coronary arteries. Patients frequently report chest pain or discomfort that may radiate to the arms, shoulders, neck, or jaw. The determination of a diagnosis is accomplished through a careful examination of the patient's medical history, an exhaustive physical examination, and the administration of specific diagnostic tests, electrocardiograms (ECGs) and stress tests. Treatment approaches often include lifestyle adjustments. The best treatment for coronary heart disease is a comprehensive strategy that lowers the risk of thrombosis and stops the development of atherosclerosis. The latest ISCHEMIA study revealed that just 41% of patients met all basic goals, demonstrating our continued poor success rate in optimizing risk factor reduction in those with acute heart failure who are stable. Success rates are probably far lower outside of the exacting setting of clinical trials.

More funds and incentives should be set aside for better secondary prevention as a stronger emphasis on reaching preventative objectives in patients with CHD would significantly affect patient outcomes and hospitalization rates. According to the ISCHEMIA study, revascularization is ineffective until angina becomes intolerable even with OMT, Even a tiny percentage of high-risk individuals with a significant ischemia load do not benefit from revascularization. Since patients with severe heart failure, unprotected left main disease, and agonizing angina were not included in ISCHEMIA, our evaluation may have been designed to identify individuals needing revascularization in addition to an initial OMT approach (16, 12-13).

An arterial circulation-affecting systemic illness that is more severe in localized places is called atherosclerosis. The existing framework for ischemia testing may no longer be relevant from an imaging perspective. Findings from recent studies such as COURAGE, PROMISE, SCOT-HEART, and ISCHEMIA indicate that anatomical imaging is more effective than functional testing for assessing inducible myocardial ischemia in the risk evaluation and treatment of patients with suspected or confirmed coronary heart disease (CHD). A considerable amount of evidence suggests that the extent of atherosclerotic disease plays a more pivotal role in the risk of CHD than the degree of inducible ischemia itself. In the PROMISE study, nonobstructive CHD was detected in 55% of participants, and this condition accounted for 77% of cardiovascular deaths and myocardial infarctions during follow-up. This presents a significant opportunity to address the condition early in a substantial population with undetected CHD, (14-15, 40).

CONCLUSION

To sum up, people with stable angina are still at high risk even with a number of advancements in treatment. In example, a worse quality of life and more hospitalizations result from inadequate management of angina symptoms. It has been shown that some medications can improve prognosis and lower the risk of serious adverse cardiovascular events. However, because to their varied effects and behaviors, antianginal drugs enhance quality of life without overtly improving prognosis. Comprehending the truths and misconceptions surrounding stable angina is essential for effective CAD therapy and prevention. By clearing up misunderstandings and sharing correct information, medical professionals may better educate patients and enhance results. The burden of stable angina and its associated repercussions must be reduced, and this requires more research and patient education.

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How to cite this article:
Anwar S., Chaudhary R. Myths And Facts Of Stable Angina. Era J. Med. Res. 2024; 11(2): 253-259.