

Angina Pectoris (Pharmacological and Acupuncture Therapy)

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ABSTRACT

Angina is the most common symptom of ischemic heart disease (IHD), it occurs when the heart muscle doesn't get enough blood as it needs. This usually happens when one or more of the heart arteries is narrowed or blocked, also called ischemia. Which is the major cause of morbidity and mortality worldwide. Approximately 9.8 million patients in the USA have symptoms of angina, through its treatment is challenging. This activity describes the evaluation of management of angina and reviews the role of the health care team improving care for the patients with this condition. It is a common presenting symptom (typically, chest pain) among patient with coronary artery disease (CAD). The atherosclerosis is the main cause of coronary artery obstruction. The pain is typically severe and crushing, and it is characterised by a feeling of squeezing, pressure, heaviness, tightness, or pain in the chest. It can be sudden or repeatedly over a time. Depending on severity, it can be treated by lifestyle changes, especially smoking cessation and regular exercise, medication, angioplasty or surgery and acupuncture therapy can also reduce the symptoms and frequency of angina pain intensity. Angina can accompany or be a precursor or a heart attack. Other cause include abnormal heart rhythms, anaemia, and heart failure.

KEYWORDS: Ischemia, coronary artery disease, angioplasty, rhythms, atherosclerosis

INTRODUCTION

Ischaemic heart disease (IHD) remains the very common leading global cause of death and lost life year in adults, notably in younger (<55 years) women. Angina pectoris (derived from the Latin verb 'angere' to strangle) is chest discomfort of cardiac origin [5]. The most often symptom of ischemic heart disease is angina, or chest pain. Among cardiovascular (CV) disease, coronary artery disease (CAD) remain the leading cause of worldwide, 1, 2 and in India, 3, 4 the burden of CAD is growing remarkably in India which is evident by more than doubling of mortality and disability rates from CAD in the last 30 years. In line with this fact, the world health organization (WHO) has projected a loss of about 237 billion USD with the current encumbrance of CV disease over a 10-year period (2005-2015), which is 1.5% of India's GDP. The most up to date from Indian consensus on Optimal Treatment of Angina (OPTA) in 2018 that the prevalence of CAD had significantly increase. The prevalence of CAD in urban areas was 2.5% 12.6% and in rural areas, it was 1.4% 4.6%.² The projected data was showing that from 1990 to 2020, there will be a 117% and 105% rise in mortality from CAD in men and women in India. 1 Further, CAD is known to be the leading cause of heart failure arrhythmias, and sudden death [18]. Chest pain can be because of non-cardiac causes, and through history and physical is critical in differentiating these causes and identifying patients experiencing acute coronary syndrome. Angina is one of the sign of acute coronary syndrome (ACS) and can further subdivide into stable and unstable angina. Stable angina defines as the occurrence of symptoms with exertion only. Unstable angina or symptoms occurring at rest requires more prompt evaluation and management.

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Approximately 9 million patients in the United States have symptoms of angina, and recognizing these symptoms is imperative in improving patient outcomes [1]

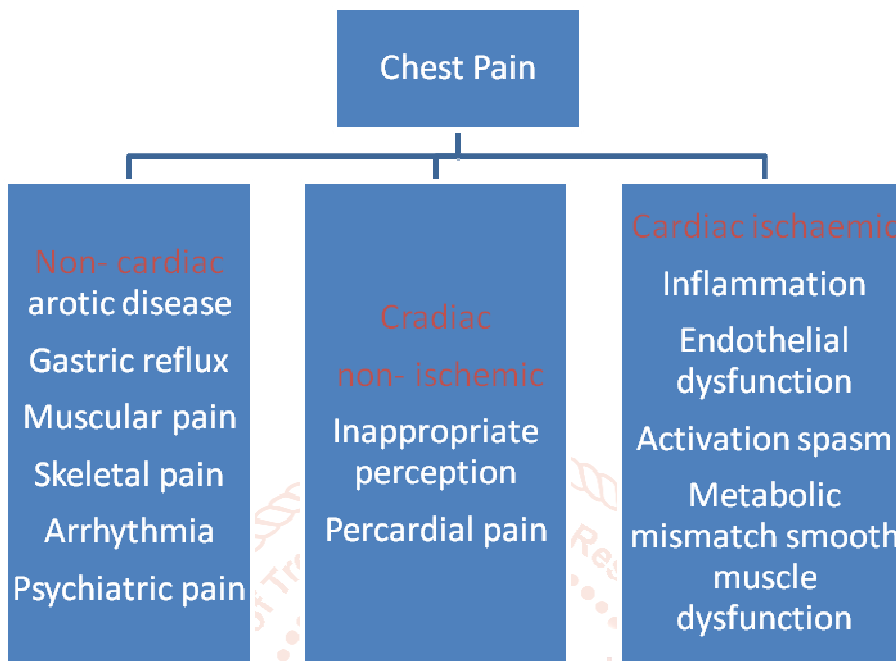
Incidences: - The most up-to-date epidemiological data from the Global Burden of Disease (GBD) dataset were analysed. This dataset includes annual figures from 1990 to 2017 for IHD in all countries and regions. In 2017, IHD affect around 126 million individual globally (1, 655 per 100, 000), which was estimated to be 1.72% of the world's population. Forecasts of prevalence based on predictive models indicate that by 2030, the prevalence of IHD could increase to more than 1, 845 per 1000, 000, with an upper confidence estimate of 1, 917 per 100, 000[7]. The increasing incidence of IHD is expected to continue, due not only to the increased prevalence of obesity, diabetes, and metabolic syndrome but also to population aging [8]. The past two decades have witnessed a sleep rise in global population aging[9]. Indeed, the united Nations estimates an increase in the population aged over 65 years from one in 11 in 2019 to one in six by 2050 [10]. According to Indian consensus on Optimal Treatment of Angina (OPTA) in 2018 that the prevalence of CAD had significantly increase. The prevalence of CAD in urban areas was 2.5% 12.6% and in rural areas, it was 1.4% 4.6%.² The projected data was shown that from 1990 to 2020, there will be a 117% and 105% rise in mortality from CAD in men and women in India [13]. Angina was significantly more prevalent in India (27% vs. 21.9%) [14].

Etiology:-

Chest pain normally can be also occur from non-cardiac causes, non-ischemic cardiac disease, and finally ischemic

cardiac diseases. The etiology of chest pain caused by cardiac ischemia is largely accepted to be due to atherosclerosis of coronary arteries and coronary vasospasm [1]. This condition will lead to myocardial oxygen supply and demand mismatch. In stable angina, the increased demand only occurs with exertion, but in unstable angina, it happens at rest as well. Increased myocardial oxygen demand from exercise is most notably due to increased heart rate, increased blood pressure, and increased myocardial

contractility, among other factors [2]. Under normal functioning of the heart, increased oxygen demand will occur with exertion is followed with coronary vasodilation, but in the case of coronary artery atherosclerosis, this function will obstruct, and ischemia and chest pain occur [1]. Vasospastic angina, also known as variant angina or Prinzmetal angina, like stable angina, also occurs at rest but it is unrelated to coronary atherosclerosis [4].



Epidemiology

The prevalence of stable angina is difficult to identify as it is a diagnosis based upon history and therefore requires clinical judgement. The prevalence of stable angina increases with age in both sexes. Women aged 45-64 years have a prevalence of 5-7%, whilst men in the same age range have a prevalence of 10-12% in women aged 65-84 years and 12-14% in similarly aged men [16]. Has decreased from 27.8% to 11.2% over 5- year period in India (p<0.0001). A persistent decline in mean SBP, DBP and HR measured by pulse palpation was observed over 5 years. However, there was no significant change in mean HR measured by ECG (p=0.1330). Chronic stable angina affects approximately 30000 to 40000 people per million people in western countries. Prevalence increases with age in both men and women. The estimates are prevalence for men and women 45 to 64 years old are 4 to 7% and 5 to 7%, respectively. In men and women 65 to 85 years old, the estimated prevalence is 14 to 15% and 10 to 12%, respectively [1]. Modifiable risk factor for angina include hyperlipidemia, hypertension, current or past tobacco use, diabetes mellitus, obesity/metabolic syndrome. Increasing BMI is an independent risk factor for coronary arterial disease (CAD) [2]. Non- modifiable risk factors include increasing age, male sex, family history of CAD, and ethnic origin [3].

History and Physical

Patient with ACS most commonly present with angina, which patients usually describe as pain, pressure, tightness, or heaviness in the chest, with potential radiation to the jaw or left arm. It may be accompanied by shortness of breath, diaphoresis, nausea, or any combination of the above. The chest pain may be precipitated by exertion and relieved by the rest and/or nitro-glycerine in the case of stable angina.

In case of unstable angina or myocardial infarction (MI) (non-ST segment elevation MI (NSTEMI)/ST segment elevation MI (STEMI), the chest pain will likely not fully resolve with rest or nitro-glycerine[3]. In the case of stable angina, the symptoms may last 5 minutes before resolving after rest or the use of nitro-glycerine. Although these are classic signs of ACS, classic angina may not occur in some patient, especially diabetes, so one must have a high index of suspension in patients with the significant cardiac risk factors.

Evaluation

In patient presenting with angina, the value of cardiac testing is determined by the patients pretest, probably of ACS. Pretest probably is evaluated by considering the patients presentation, along with their cardiac risk factors. In patients with very high or very low pretest probability, diagnostic test are less valuable as they are less likely to change management.[3]The history, examination, ECG and laboratory test provide important prognostic information. Increase age, chronic kidney disease, diabetes, hypertension, current smoking, previous myocardial infarction, hypercholesterolemia and heart failure are predictive of adverse outcomes. [2]

Treatment and management:-

Medical care: - The main goals of treatment in angina pectoris are to relieve the symptoms, slow the progression of disease, and reduce the possibility of future events, especially MI and premature death

Life style changes:-

Smoking: - If you smoke, stop. If you need help quitting, talk to your doctor about smoking cessation therapies.

Poor diet: - Eat a healthy diet with limited amounts of saturated fat, Trans fat, salt and sugar.

Lack of physical activity: - Talk to your doctor about starting a safe exercise plan. If your angina is brought on by exertion, pace yourself and take rest breaks.

Excess weight: - If you are overweight, find a way to achieve and maintain a healthy weight by balancing what and how much you eat with how much physical activity you get.

Medical condition: - Get treatment for conditions that can increase your risk of angina, such as diabetes, high blood pressure and high blood cholesterol.

Stress: - Avoiding stress is easier said than done, but try to find ways to relax. Talk with your doctor about stress-reduction techniques [11].

Pharmacological treatment: -

Aspirin: - Aspirin and other anti-platelet medications reduce the ability of your blood to clot, making it easier for blood to flow narrowed heart arteries.

Nitrates: - Often used to treat angina, nitrates relax and widen your blood vessels, allowing more blood to flow to your heart muscle.

ACUPUNCTURE THERAPY:-

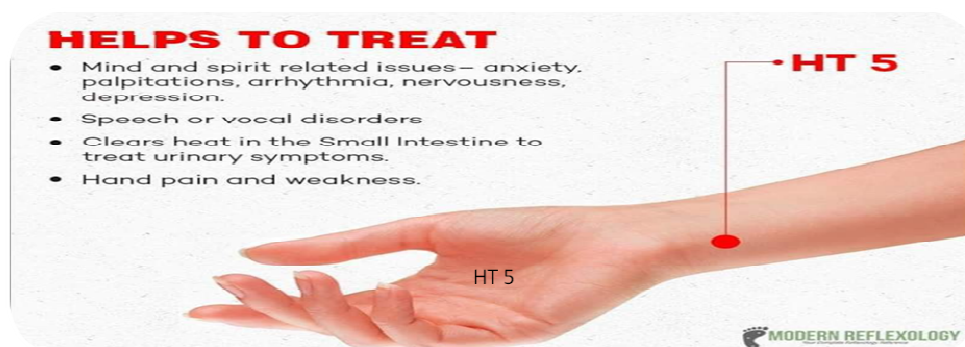
Beta blockers: - These block the effects of the hormone epinephrine, also known as adrenaline. They help your heart beat more slowly.

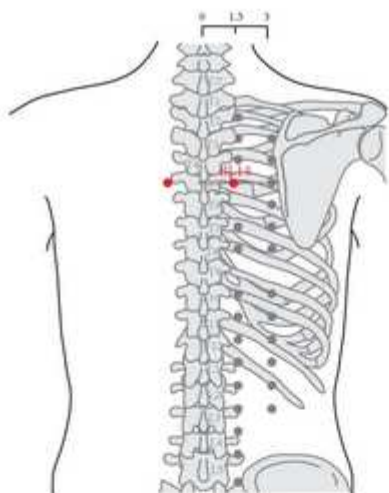
Statins: - Statins lower blood cholesterol by blocking a substance your body needs to make cholesterol.

Calcium channel blockers: - Also called calcium antagonists, these drugs relax and widen blood vessels by affecting the muscle cells in the arterial walls.

Ranolazine (Ranexa):- This anti-angina medication might be prescribed with other angina medications, such as beta blockers. It can also be used as a substitute if your symptoms don't improve with the other medication [11].

Acupuncture: - The well known as an oriental healing technique that originated from ancient China, has been used as a treatment method for over 2, 000 years [14]. Acupuncture is an integral part of traditional Chinese medicine. According to reports in the literature, acupuncture can relieve angina symptoms and reduce the frequency of angina and pain [13]. The therapeutic effect of acupuncture is gradually being recognized in the western world. The National Institute of Health consensus has recommended acupuncture as an alternative and complementary treatment for many health conditions [14].

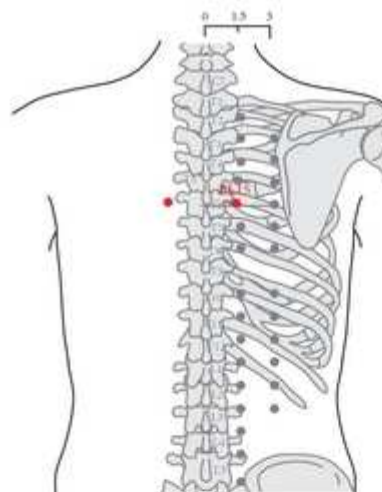




Jueyinsu (BL14)

Location: in the upper back region, at the same level as the inferior border of the spinous process of the fourth thoracic vertebra (T4), 1.5 B-cun lateral to the posterior median line.

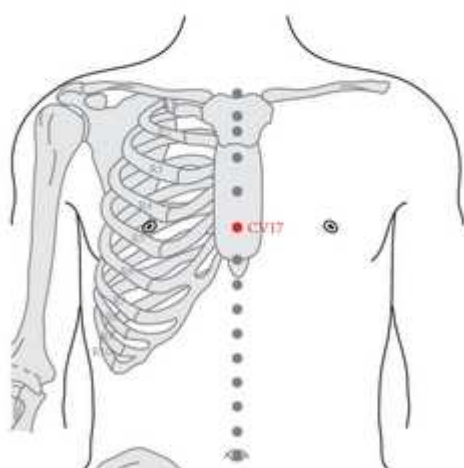
From: WHO standard acupuncture point locations in the Western Pacific region



Xinshu (BL15)

Location: in the upper back region, at the same level as the inferior border of the spinous process of the fifth thoracic vertebra (T5), 1.5 B-cun lateral to the posterior median line.

From: WHO standard acupuncture point locations in the Western Pacific region



Danzhong (CV17)

Location: in the anterior thoracic region, at the same level as the fourth intercostal space, on the anterior median line.

From: WHO standard acupuncture point locations in the Western Pacific region



Neiguan (PC6)

Location: on the anterior aspect of the forearm, between the tendons of the palmaris longus and the flexor carpi radialis, 2 B-cun proximal to the palmar wrist crease.

From: WHO standard acupuncture point locations in the Western Pacific region

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