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PREVALENCE OF MYOCARDIAL INFARACTION AT TERITARY CARE HOSPITAL (SGTH)

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Abstract

In our study we explore patient history, current illness and symptom intertwined together to point a view picture of health condition in the admitted patient myocardial infarction (MI) is a term used for an event of heart attack which is due to formation of plaques in the interior walls of the arteries resulting in reduced blood flow to the heart and injuring heart muscles because of lack of oxygen supply. The symptoms of MI include chest pain, which travels from left arm to neck, shortness of breath, sweating, nausea, vomiting, abnormal heart beating, anxiety, fatigue, weakness, stress, depression, and other factors. The immediate treatment of MI includes, taking aspirin, which prevents blood from clotting, and nitro-glycerin to treat chest pain and oxygen. The heart attack can be prevented by taking an earlier action to lower those risks by controlling diet, fat, cholesterol, salt, smoking, nicotine, alcohol, drugs, monitoring of blood pressure every week, doing exercise every day, and loosing body weight. The treatment of MI includes, aspirin tablets, and to dissolve arterial blockage injection of thrombolytic or clot dissolving drugs such as tissue plasminogen activator, streptokinase or urokinase in blood within 3 h of the onset of a heart attack. The painkillers such as morphine or meperidine can be administered to relieve pain. Nitroglycerin and antihypertensive drugs such as beta-blockers, ACE inhibitors or calcium channel blockers may also be used to lower blood pressure and to improve the oxygen demand of heart. The ECG, coronary angiography and X-ray of heart and blood vessels can be performed to observe the narrowing of coronary arteries. In this article the causes, symptoms and treatments of MI are described. Cardiovascular mortality differs across Asian American subgroups, but myocardial infarction (MI) hospitalization outcomes or quality of care have not been reported in these populations. MI quality and outcomes differ among Asian Americans, with worse outcomes compared with non-Hispanic White (NHW) adults.

1. INTRODUCTION:

1.1 Background

The first to clearly describe the syndrome of myocardial infarction (MI) was James Herrick, a Chicago internist, in 1912. Herrick's observations included the clinical and electrocardiographic evolution of the phenomenon, before ancient studies. The American College of Cardiology reports that the earliest documented case of coronary atherosclerosis a build-up of plaque in the arteries that can cause a heart attack was in an Egyptian princess who lived between 1580 and 1550 B.C. The study found that heart disease was more common in ancient times than previously thought. Myocardial infarction (MI) has a rich

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history that reflects the evolution of medical understanding and treatment of heart diseases. Here is an overview: Early Descriptions: Ancient civilizations, including the Egyptians and Greeks, recognized symptoms of chest pain (angina), but their understanding of heart disease was rudimentary. Hippocrates (460–370 BCE): Referred to sudden deaths, which may have included MI, but attributed them to imbalance in bodily "humors. Late 20th Century: Modern Cardiology1970s: Introduction of coronary artery bypass grafting (CABG) to restore blood flow.1980s: Percutaneous coronary intervention (PCI) and angioplasty emerged as minimally invasive techniques to reopen blocked arteries.1990s: Widespread use of medications like beta-blockers, ACE inhibitors, statins, and aspirin transformed MI treatment. The first to clearly describe the syndrome of myocardial infarction (MI) was James B. Herrick, a Chicago internist, in the early 20th century. Herrick's observations included the clinical and electrocardiographic evolution of the condition.21st Century: Personalized and Preventive Care Advances in imaging, biomarkers (like high-sensitivity troponins), and interventional techniques have further refined MI diagnosis and treatment Focus shifted to primary prevention (e.g., managing risk factors like hypertension, diabetes, and high cholesterol). Research into genetics and personalized medicine is shaping the future of MI care.

Cardiovascular disease encompasses a range of conditions that affect the heart and blood vessels. These include coronary artery disease (like heart attacks), heart rhythm problems (arrhythmia), heart defects (congenital heart defects), and conditions of the blood vessels like hypertension (high blood pressure) and stroke. CVD is a leading cause of death globally, but many forms can be prevented or managed through lifestyle changes and medical intervention are among the most common causes of morbidity and mortality worldwide [1,2] that account for 35% of global deaths. These diseases lead to complications, significant disability, and reduced productivity putting them on top of costly problems in the health-care system. [3,4] According to the Third Report by the World Health Organization (WHO), 12 million people die annually of CVD worldwide, and it is predicted that until 2020 will reach to 25 million/year.[5] Myocardial infarction (MI), commonly known as a heart attack, occurs when blood flow decreases or stops in one of the coronary arteries of the heart, causing infarction (tissue death) to the heart muscle.[6 The most common symptom is retrosternal chest pain or discomfort that classically radiates to the left shoulder, arm, or jaw.[6] The pain will be occasionally feel like heartburn.[6] where there is evidence of an MI, it may be classified STEMI results from complete and prolonged occlusion of an epicardial coronary blood vessel and is defined based on ECG criteria. ST elevation myocardial infarction is a common ECG finding that can indicate myocardial ischemia, infarction, or other conditions mainly in one or more coronary artery. or non-ST elevation myocardial infarction based on the results of an ECG in arise symptoms shortness of breath, nausea, feeling faint, NSTEMI is either the complete blockage of a minor coronary artery or the partial obstruction of a major coronary artery. Old tired decreased level of consciousness. [6] About 30% of people have atypical symptoms. [9] Women more often present without chest pain and instead have neck pain, arm pain or feel tired. [10] Among those over 75 years old, about 5% have had an MI with little or no history of symptoms.

[11] An MI may cause heart failure, an irregular heartbeat, cardiogenic shock or cardiac arrest.[12] [13].

Cardiovascular diseases (CVDs) are the main source of worldwide mortality and incapacity. As per the Worldwide Weight of Cardiovascular Illnesses and Hazard Variables, 1990-2019, there is a pattern of a continually expanding number of CVD deaths, from 12.1 million out of 1990 to 18.6 million out of 2019 [9]. Specifically, ischemic coronary illness (IHD) causes 49.2% of all CVD deaths [9]. Intense myocardial dead tissue (AMI) is extraordinary in youthful people, and its frequency fluctuates somewhere in the

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range of 2% and 10% [10-12]. In spite of the better forecast at more youthful ages and its generally low rate, AMI at youthful ages can be a dangerous condition and cause long haul handicap. Additionally, it can cause financial and annihilating mental ramifications for both the patient and their loved ones. In this manner, to alter some gamble factors (RFs), clinical interest in AMI in youthful patients is expanding. A few examinations have shown that youthful patients with AMI have different clinical introductions, RFs, angiographic profiles and forecasts contrasted and their more established partners [13]. Rubin and Borden

[13] demonstrated that youthful patients with CVDs are prevalently smokers and stout guys with a positive family ancestry. In addition, in these patients, forward thinking RFs and etiologies, for example, unusual coronary veins, connective delicate tissue and immune system sicknesses and illegal medication use, are more successive reasons for AMI than in more established patients. Chen et al. affirmed the fundamental job of these RFs yet in addition noticed that dyslipidemia and ST-rise AMI are regularly seen in patients more youthful than 45 years. Youthful AMI patients were bound to have single-vessel inclusion and a lower level of left ventricular brokenness. At last, the two examinations presumed that regardless of harmless forecasts, the adjustment of RFs in youthful patients is essential [13] Eastern Europe is a locale with one of the greatest age-normalized rates for incapacity changed life (DALYs) [9]. In any case, there is scant data concerning the particular profile of the p decreased level of consciousness. previously mentioned attributes in youthful patients with AMI around here. Thusly, the point of this study was to portray segment and pattern qualities, RFs, angiographic highlights, in-medical clinic confusions and results in youthful AMI patients (≤Eastern Europe is a locale with one of the greatest age-normalized rates for incapacity change Eastern 45 years). Moreover, the distinctions between these patients and more established patients (>45 years) were investigated.

1.2 Rationally of the study

In Pakistan particularly swat region, comprehensive data on myocardial infarction in admitted patient at CCU Casualty SGTH. Despite the ongoing debates in myocardial infarction eradication, efficacy there is critical need for prevalence data estimates in swat. Understanding associated risk factors is equally crucial undefined high-risk groups in developing targeted public interventions limited report on prevalence in admitted patient in the area highlights the necessity of research to guide patient management, public health strategies and treatment approaches. This study aims to fill the gap by determining the prevalence of myocardial infarction in admitted patient at tertiary care hospital.

1.3 Objective:

a) General objective

- To assess the prevalence of myocardial infarction in admitted patient in CCU casualty at Saidu group of teaching hospital swat

b) Specific objectives

- To identify its associative factors that involves in myocardial infarction disease.

1.4 Operational definition

Hypertension:

Sustained elevated blood pressure in a quiet state is called hypertension, The force of blood against the wall of the arteries Blood pressure is expressed by two measurements Systolic - as the heart contracts. Diastolic - as the heart relaxes.

– History of hypertension is a frequent finding in patients with acute myocardial infarction (AMI).

Smoking:

Smoking is a practice in which a substance is burned and the resulting smoke breathed in to be tasted and absorbed into the bloodstream. Most commonly the substance is the dried leaves of the tobacco plant which have been rolled into a small square of rice paper to create a small round cylinder called a: Cigarette; Cigarette smoking is associated with an

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increased risk of acute MI.

Diabetes:

Diabetes can significantly increase the risk of myocardial infarction (MI), commonly known as a heart attack. This is because diabetes often leads to conditions like high cholesterol, and obesity, which are major risk factors for heart disease. myocardial infarction, diabetes can cause damage to the blood vessels and nerves that control the heart, making it more likely for a person with diabetes to experience a heart disease.

Obesity:

Increase in prevalence of obesity has become a worldwide major health problem in adults. Furthermore, total adiposity and truncal subcutaneous fat accumulation during adolescence are positively and independently associated with atherosclerosis at adult ages. Centrally accumulation of body fat is associated with insulin resistance, whereas distribution of body fat in a peripheral pattern is metabolically less important. Obesity is associated with a large decrease in life expectancy.

BMI	Nutritional status
Below 18.5	Underweight
18.5–24.9	Normal weight
25.0–29.9	Pre-obesity
30.0–34.9	Obesity class I
35.0–39.9	Obesity class II
Above 40	Obesity class III

Sedentary lifestyle:

A sedentary lifestyle refers to a lack of significant physical activity. It is becoming a significant public health issue and relates to a range of chronic health conditions. Most people living a sedentary lifestyle are unlikely to be meeting the national physical activity guidelines. According to the government's 2008 Physical Activity Guidelines for Americans, adults should be getting at least 150 minutes of moderate-intensity physical activity each week.

1.5 Significance of Myocardial infarction:

- Understanding the prevalence of Myocardial Infraction will help us to modifies public efforts and better manage the disease burden
- The study finding will help us and the management of Myocardial Infraction.

1.6 EXPACTED OUTCOME:

- The prevalence of Myocardial Infraction in admitted patients at the tertiary care hospital will be determine.

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- Risk factors and clinical characteristic associated with Myocardial Infraction will be identified.

2. Literature review:

Myocardial infarction (MI) is the leading cause of mortality in many developed and developing countries. The substrate for MI is atherosclerosis and MI occurs at the site of pre-existing atherosclerotic lesions, usually following local plaque disruption with subsequent occlusive thrombosis. In general, factors that promote atherosclerosis also promote myocardial infarction. While therapeutic targeting of cholesterol with statins has been shown to prevent events and reduce progression of atherosclerosis, it is clear that other lipid independent factors, such as inflammatory cytokines, also affect progression of atherosclerosis. Atherosclerosis may be considered a chronic inflammatory disease with influx of leukocytes leading to plaque growth. Factors that promote leukocyte pro-inflammatory activity may therefore lead to progression of atherosclerotic plaques. (Kazemi T, J health sci [PUBMED]2011;77[Google scholar]. Identification of conditions in which the likelihood of MI is increased may uncover important novel triggers or pathways involved in progression of atherosclerotic vascular disease. Individuals with the metabolic syndrome are twice as likely to die of the cardiovascular disease as those who do not, and their risk of an acute myocardial infarction or stroke is threefold higher the others. The approximate prevalence of the metabolic syndrome among these patients with coronary heart disease (CHD) is50%, with a high prevalence of ~35% among patients with premature coronary artery disease (before or at age 45) and a particularly high prevalence among women. With appropriate cardiac rehabilitation and changes in lifestyle (e.g., diet control, nutrition, physical activity, weight reduction, and in some cases pharmacologic therapy), the prevalence of the syndrome can be reduced. The relative risk for the new onset CVD in patients with the metabolic syndrome who do not have diabetes averages 1.5-3. fold risk. (UNIV Med Sci 2013,14101 [PUBMED]2011;77 Google scholar

2.1 Definition

A myocardial infarction (MI), commonly known as a heart attack, occurs when blood flow decreases or stops in one of the coronary arteries of the heart, causing infarction (tissue death) to the heart muscle.[6] The most common symptom is retrosternal chest pain or discomfort that classically radiates to the left shoulder, arm, or jaw.[6] The pain may occasionally feel like heartburn.

2.2 Clinical manifestation

- chest pain
- Shortness of Breath
- Nausea/vomiting
- Cold sweat
- Light dizziness
- arm, neck, back, jaw, or stomach pain
- Decreased loss of consciousness

2.3 Diagnose

A myocardial infarction, according to current consensus, is defined by elevated cardiac biomarkers with a rising or falling trend and at least one of the following:[20] e.g. troponin, Creatinine kinase and Myoglobin. Symptoms relating to ischemia Changes on an electrocardiogram (ECG), such as ST segment changes, new left bundle branch block, or pathologic Q waves. Changes in the motion of the heart wall on imaging Demonstration of a thrombus on angiogram or at autopsy.

2.4 Risk Factors

The most prominent risk factors for myocardial infarction are older age, actively smoking, high blood pressure, diabetes mellitus, and total cholesterol and high-density lipoprotein levels.[21] Many risk factors of myocardial infarction are shared with coronary artery disease, the primary cause of myocardial infarction,[21] with other risk factors including male sex, low levels of physical activity, a past family history, obesity, and alcohol use. Many risk factors for myocardial infarction are

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potentially modifiable, with the most important being tobacco smoking (including secondhand smoke).[23]

2.5 complication

Complications may occur immediately following the myocardial infarction or may take time to develop. Disturbances of heart rhythms, including atrial fibrillation, ventricular tachycardia and fibrillation and heart block can arise as a result of ischemia, cardiac scarring, and infarct location.[16][21] Stroke is also a risk, either as a result of clots transmitted from the heart during PCI, as a result of bleeding following anticoagulation, or as a result of disturbances in the heart's ability to pump effectively as a result of the infarction.[22] Regurgitation of blood through the mitral valve is possible, particularly if the infarction causes dysfunction of the papillary muscle.[22] Cardiogenic shock as a result of the heart being unable to adequately pump blood may develop, dependent on infarct size, and is most likely to occur within the days following an acute myocardial infarction. Cardiogenic shock is the largest cause of in-hospital mortality.[22] Rupture of the ventricular dividing wall or left ventricular wall may occur within the initial weeks.[23] Dressler's syndrome, a reaction following larger infarcts and a cause of pericarditis is also possible.[73]

2.6 Treatment

Emergency Treatment

1. Call Emergency Services: Immediate medical attention is crucial.
2. Oxygen Therapy: If oxygen levels are low.
3. Medications: Aspirin: Chewable aspirin is given immediately to reduce blood clotting. Nitroglycerin: Administered to improve blood flow and relieve chest pain. Morphine: Used for severe chest pain unresponsive to nitroglycerin. Oxygen Therapy: For patients with low oxygen saturation levels. Anticoagulants: Heparin or other blood thinners to prevent further clot formation.

Medical treatment

The medical treatment for a myocardial infarction (MI), or heart attack, involves urgent interventions to restore blood flow to the heart and prevent further damage. Cardiac Rehabilitation: Structured programs including exercise, dietary changes, and psychological Lifestyle Modifications: Stop smoking, maintain a healthy diet, control weight, and reduce stress. Risk Factor Control: Manage hypertension, diabetes, and high cholesterol.

Surgical treatment

Percutaneous Coronary Intervention (PCI): A catheter-based procedure to open blocked coronary arteries. stent is often placed to keep the artery open. Best if performed within 90 minutes of arrival at the hospital. Thrombolytic Therapy: Clot-dissolving drugs (e.g., alteplase, streptokinase) may be used when PCI is not available. Coronary Artery Bypass Grafting (CABG): Surgery to reroute blood flow around blocked arteries.

2.7 Prevention

Physical activity can reduce the risk of cardiovascular disease, and people at risk are advised to engage in 150 minutes of moderate or 75 minutes of vigorous intensity aerobic exercise a week.[99]Keeping a healthy weight, drinking alcohol within the recommended limits, and quitting smoking reduce the risk of cardiovascular disease.[24] Public health measures may also act at a population level to reduce the risk of myocardial infarction, for example by reducing unhealthy diets (excessive salt, saturated fat, and trans-fat) including food labeling and marketing requirements as well as requirements for catering and restaurants and stimulating physical activity. This may be part of regional cardiovascular disease prevention programs or through the health impact assessment of regional and local plans and policies.[24] Most guidelines recommend combining different preventive strategies. A 2015 Cochrane Review found some evidence that such an approach might help with blood pressure,

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body mass index and waist circumference. However, there was insufficient evidence to show an effect on mortality or actual cardio-vascular events.[25]

3. METHODOLOGY:

3.1 Study design:

The current study was a cross-sectional observational study conducted at selected tertiary care hospitals in Swat.

3.2 Study location:

The research was carried out in Swat, Khyber Pakhtunkhwa, Pakistan. Sample collection took place at Saidu Group of Teaching Hospital Swat (SGTH), patients visiting their CCU Casualty center wing and Saidu wing SGTH as well as lab visitors participated until 130 samples had been gathered.

3.3 Sample size:

The sample size was estimated with the Rao soft ® sample calculator online at a 95% confidence interval, a 5% margin of error. A total of 130 samples were collected to achieve the objectives of research according to the calculation.

3.4 Study population:

A cross-sectional study was conducted between August 2024 to December 2024 to investigate the prevalence of Myocardial infarction and its associative factors. A representative sample was drawn from hospital CCU Casualty Centre wing, Saidu wing SGTH laboratories.

3.5 Data collection:

Data was collected through patient medical record reviews, and laboratory tests. A structured questionnaire was used to gather information about demographics, medical history, and symptoms of patients.

3.6 DATA ANALYSIS:

Descriptive statistics was used to report the prevalence of Myocardial Infraction patients. Chi-square test was done to analyze associations between and related factors.

3.7 Sampling Technique

systematic methods

Inclusion Criteria: Hospital admission for MI in SGTH at chest pain clinic.

Exclusion Criteria: patient with age of less than 20 year due to less prevalence of MI.

3.8 Ethical considerations:

1. Informed consent was obtained from all participating patients.
2. The study was conducted in compliance with the ethical guidelines of the hospital and relevant regulatory bodies.

4. RESULTS:

Table 4.1: socio-demographic characteristics

S.NO	Variable	Options	Frequency
1.	Age	18-30year	8
		31-45 year	15
		46-60 year	44
		61-75 year	63
2.	Gender	Male	74
		Female	56
3.	Occupation	Sedentary	55
		Active	42
		Retired	33

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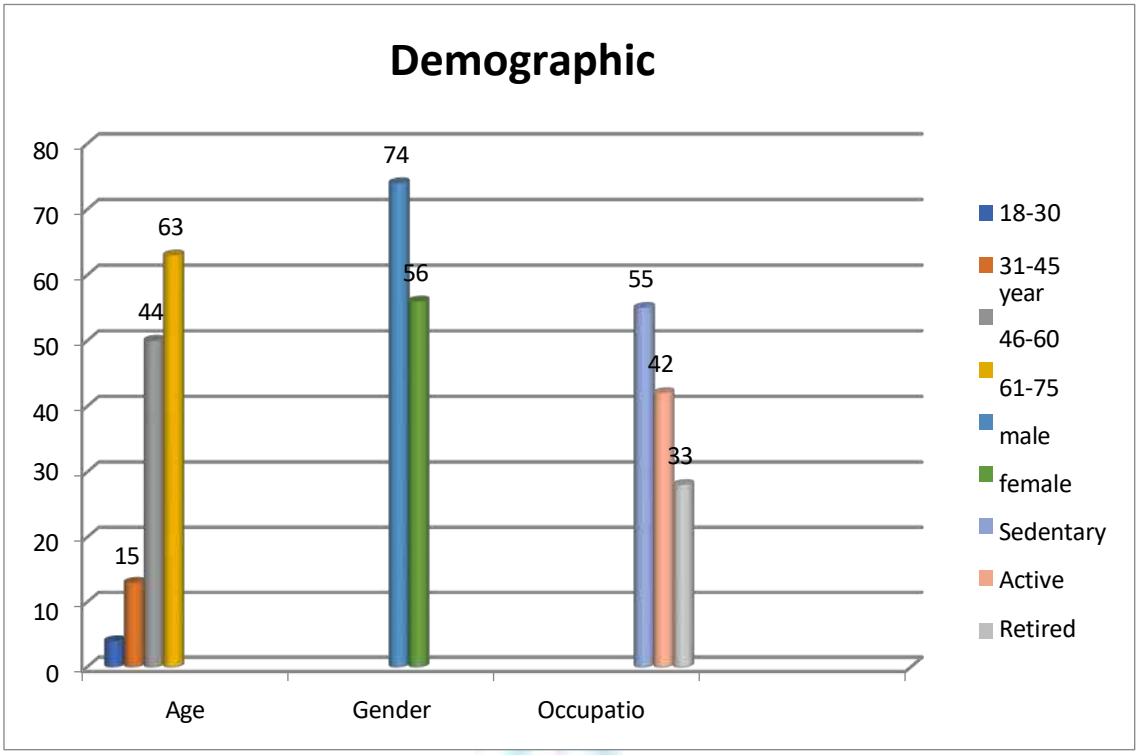


FIGURE 4.1: socio-demographic characteristics

Table 5.2 patient history

S. No		Category "yes"	Category "No"
1	Pervious history of CVD	70	60
2	Have been diagnose with MI	101	29
	If yes how many episodes of MI	1 episode	80
		2 episodes	50
3	Last MI	Less than 6month ago	32
		6month to 1 year ago	50
		1 year to 3 y ago	38
		More than 3 y ago	10
4	Diagnostic test	ECG	80
		Cardiac biomarkers	30
		Both	17
		Other	3
5	Do you have SOB	123	7
6	Do you have dizziness	59	71
7	Do you have vomiting	93	37

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Table 4.2 patient history

Table 4.2 Relationship between the occurrence of SOB with MI and prevalence of myocardial infarction at tertiary care hospital SGTH

Relation between shortness of breath and MI					
Chi-square (x^2) (Formula)		Do you have shortness of breath?			X^2(Cal) 38.902 X^2(tab) 3.841
		no, not always	yes, always	Total	
Shortness a	Positive	3	120	123	Degre of freedom
	Negative	4	3	7	1
Total		7	123	130	

Chi-square test = 38.902

H0= There is no relation between shortness of breath and MI Ha= = There is a relation between shortness of breath and MI Chi- square test calculated value= 38.902

Chi- square test tabulated value= 3.841

Conclusion: As x2 (Cal 38.902) is greater than tabulated (3.841), so we reject H0 and conclude that there is a relation between shortness of breath and MI

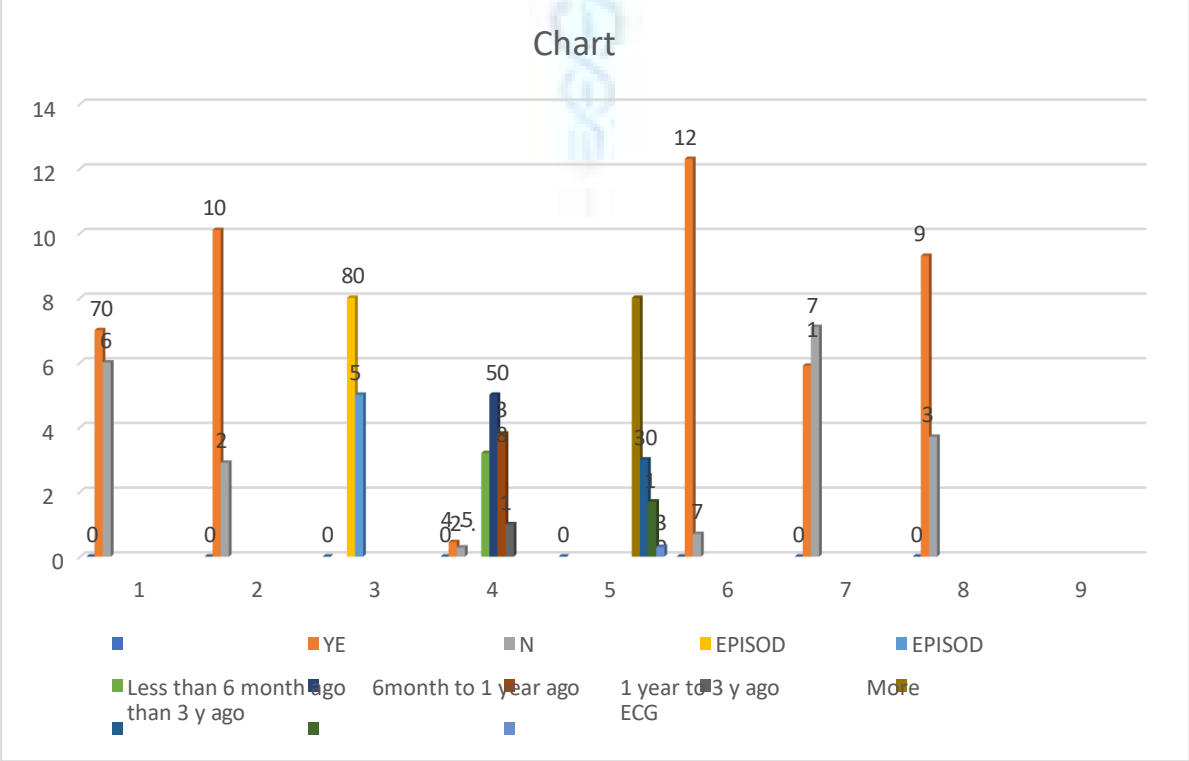


Figure 4.2 myocardial infarction patient history

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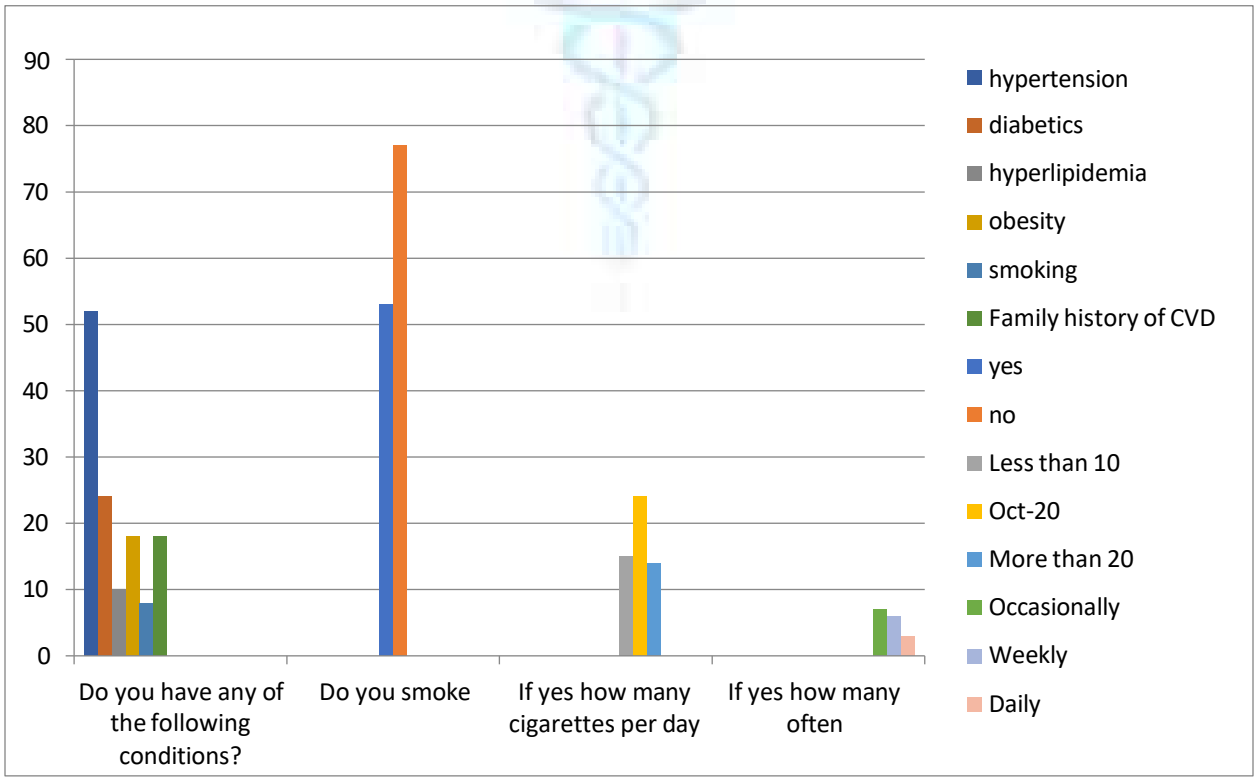
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Table 4.3 Risk factors

S. No	Variable	Options	Frequency
1.	Do you have any of the following conditions?	• hypertension	52
		• diabetics	24
		• hyperlipidemia	10
		• obesity	18
		• smoking	8
		• Family history of CVD	18
2	Do you smoke	• Yes	53
		• No	77
	If yes how many cigarettes per day	• Less than 10	15
		• 10-20	24
		• More than 20	14
3	Do you consume alcohol?	• Yes	16
		• No	114
	If yes how many often	• Occasionally	7
		• Weekly	6
		• Daily	3

Figure 4.3 Risk fectors



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Table 4.3 Relationship between smoking with MI and prevalence of myocardial infarction at tertiary care hospital SGTH

Relation between smoke and MI					
Chi-square (x^2) (Formula)		Do you have smoke?			X^2(Cal) 45,6754 X^2(tab) 3.841
		No	Yes	Total	
Shortness a	Positive	3	50	53	Degre of freedom
	Negative	50	27	77	1
Total		53	77	130	

Chi-square test = 45.6754

H0= There is no relation between smoking and MI Ha= = There is a relation between smoking and MI Chi-square test calculated value= 45.6754

Chi- square test tabulated value= 3.841

Conclusion: As x^2 (Cal 45.6754) is greater than tabulated (3.841), so we reject H0 and conclude that there is a relation between smoking and MI.

Table 4.3 Relationship between hypertension with MI and prevalence of myocardial infarction at tertiary care hospital SGTH

Relation between hypertension and MI					
Chi-square (x^2) (Formula)		Do you have hypertension?			X^2(Cal) 43.3535 X^2(tab) 3.841
		No	Yes	Total	
Hypertension	Positive	13	43	57	Degre of freedom
	Negative	60	14	73	1
Total		73	57	130	

Chi-square test = 43.3535

H0= There is no relation between hypertension and MI Ha= = There is a relation between hypertension and MI Chi- square test calculated value= 43.3535

Chi- square test tabulated value= 3.841

Conclusion: As x^2 (Cal 43.3535) is greater than tabulated (3.841), so we reject H0 and conclude that there is a relation between smoking and MI.

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Table 4.4: Treatment and Management

S. No	Variable	Options	Frequency
	Are you currently on any medication for heart disease?	Yes	85
		No	45
	If yes	a. Antiplatelet	24
		b. Statins	75
		c. Beta-blockers	19
		d. ACE Inhibitors	12
2.	Have you undergone any procedures for heart disease?	a. PCI	43
		b. CABG	68
		c. Others	19
3	Do you follow any lifestyles changes after MI e.g. diet exercise	Yes	119
		No	11

Figure 4.4 Treatment and Management

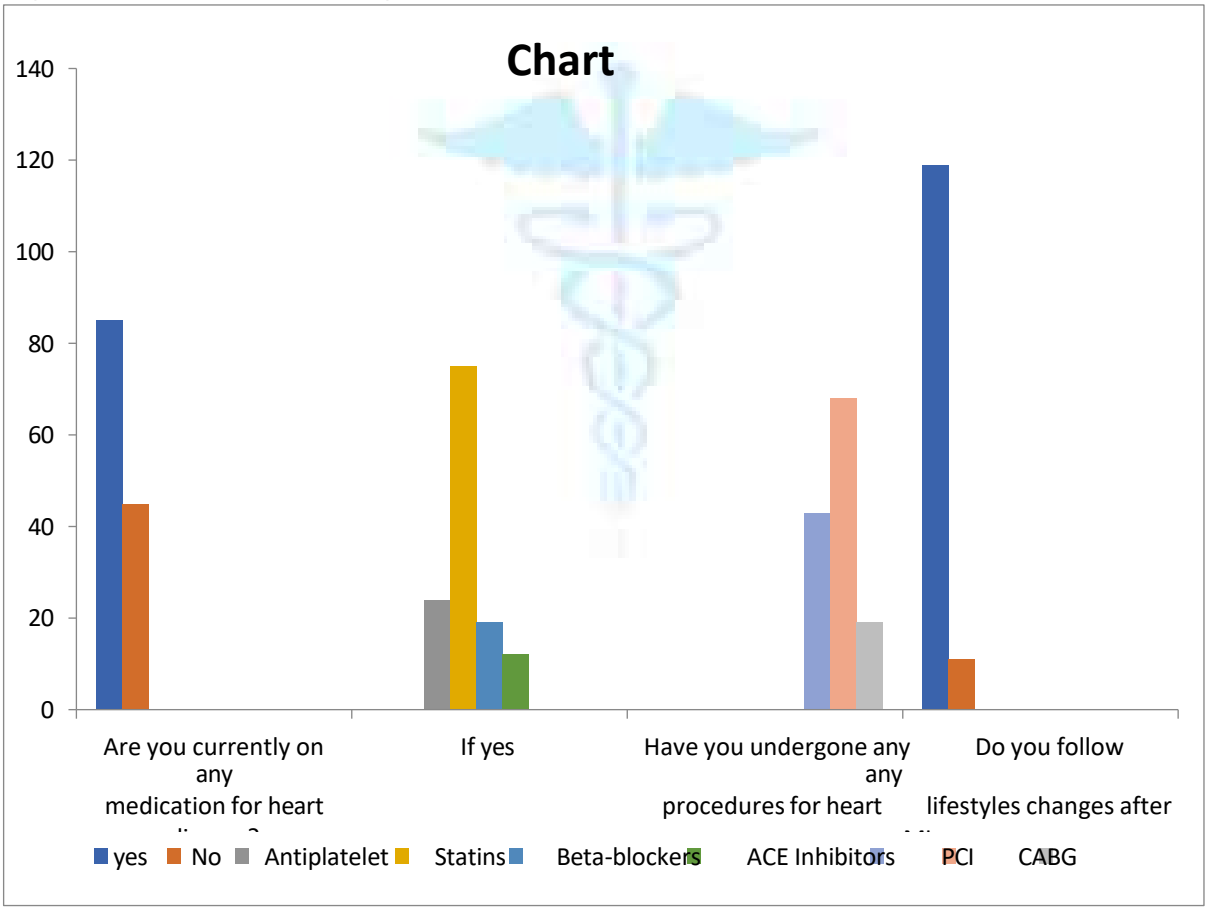


Table 4.5 Hospitalization and Outcome

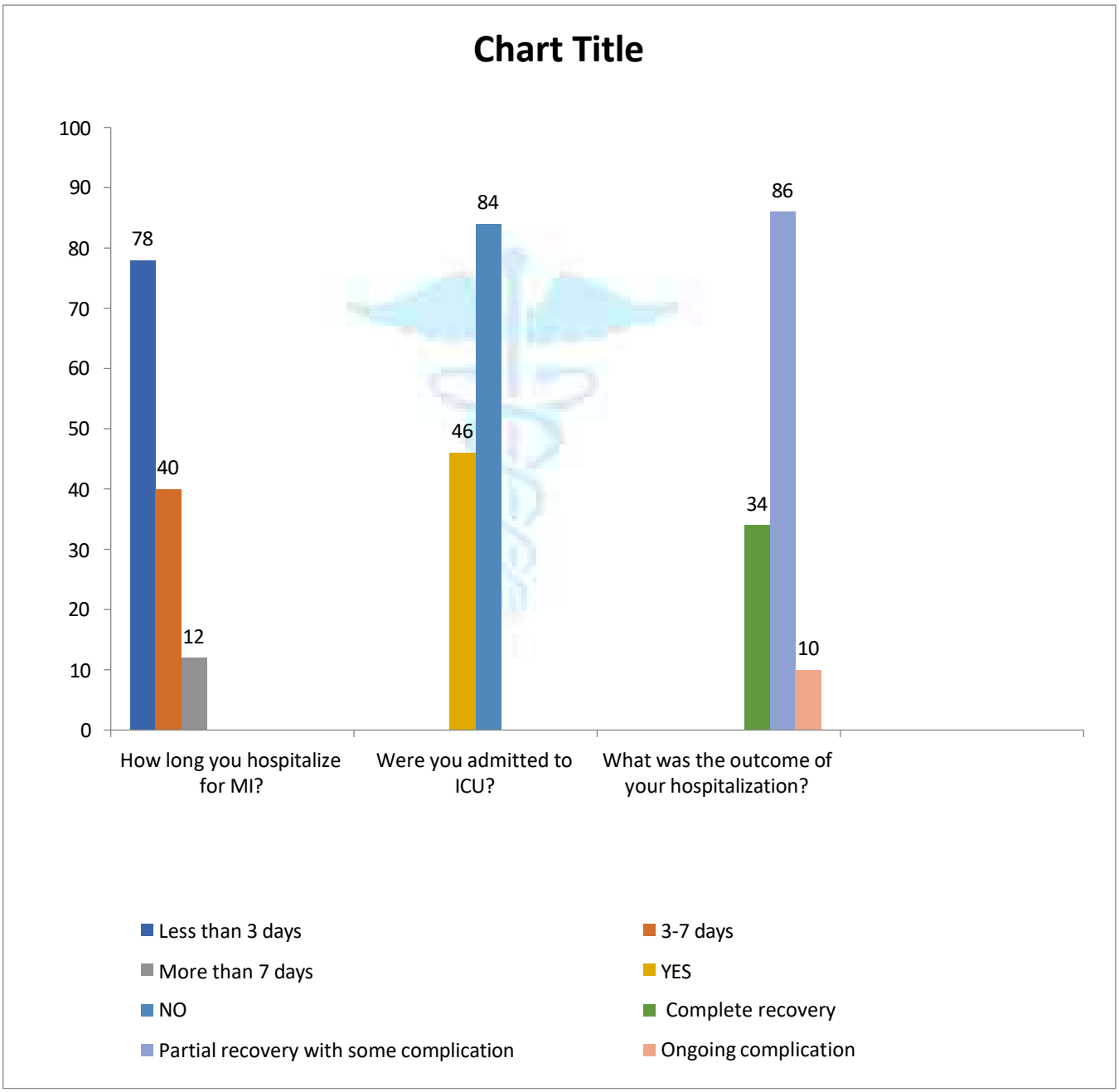
S. No	VARIABLE	OPTION	FREQUNCY
1	How long you hospitalize for MI?	1. Less than 3 days	78
		2. 3-7 days	40
		3. More than 7 days	12

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2	Were you admitted to ICU?	Yes	46
		No	84
3	What was the outcome of your hospitalization?	1. Complete recovery	34
		2. Partial recovery with some complication	86
		3. Ongoing complication	10

Figure 4.5 Hospitalization and Outcome



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Table 4.6 Awareness and prevention

S.NO	VARIABLE	OPTION	FREQUENCY
1.	Were you aware of the symptoms of heart attack before your episode?	Yes	39
		No	91
2.	Do you regularly attend follow up visits of with your cardiologist after MI	Yes	93
		No	37
3.	Are you aware of the risk factors that contribute to MI	Yes	120
		No	10
4.	Would you interest in participating in heart disease in prevention programs at SGTH	YES	84
		NO	46

5.1 DISCUSSION:

A myocardial infarction (MI), commonly known as a heart attack, occurs when blood flow decreases or stops in one of the coronary arteries of the heart, causing infarction (tissue death) to the heart muscle.[1] The most common symptom is retrosternal chest pain or discomfort that classically radiates to the left shoulder, arm, or jaw.[1] The pain may occasionally feel like heartburn. 1. Modifiable Factors: These are lifestyle or health conditions that can be changed or controlled to reduce the risk. Smoking: Increases plaque buildup and promotes blood clots. High blood pressure: Causes stress on arteries leading to damage. High cholesterol: Leads to plaque formation in coronary arteries. Diabetes: Accelerates atherosclerosis. Obesity: Contributes to other risk factors like hypertension and diabetes. Physical inactivity: Reduces heart health. Unhealthy diet: High in saturated fats, sugars, and salt promotes risk. Stress: Triggers unhealthy coping behaviors (e.g., smoking or overeating). T 1. Modifiable Factors: These are lifestyle or health conditions that can be changed or controlled to reduce the risk. Smoking: Increases plaque buildup and promotes blood clots. High blood pressure: Causes stress on arteries, leading to damage. High cholesterol: Leads to plaque formation in coronary arteries. Diabetes: Accelerates atherosclerosis. Obesity: Contributes to other risk factors like hypertension and diabetes. Physical inactivity: Reduces heart health. Unhealthy diet: High in saturated fats, sugars, and salt promotes risk. Once the diagnosis is established, the patient is informed that the condition can be managed. Recurrence may develop; however, Myocardial infarction treated with antiplatelets and thrombolytics medicine to eradicates M. Infarction have a lower recurrence rate than those who not treated with antiplatelets. The goals to eradicates the, M. infraction we use sometime dual therapy combination of thrombolytics and antiplatelets (e.g. lop Arin, AS cards) for daily use to decrease chances of MI. The data from patient history and symptoms provide a comprehensive

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overview of the health conditions observed in the admitted patients. Myocardial Infarction where prevalent conditions are high in male 74(57%) as compare to female 56(46%) patients, respectively diabetes mellitus and hypertension were also notable. Symptoms such as chest pain, nausea vomiting, radiating pain to back, sweat colds, heartburn, were prevalent among the majority of the Myocardial infarction patients. These findings align with the well understand association between MI infarction and CVD disorders, including pericarditis and cardiac regurgitation. The presence of diabetes and hypertension and other conditions are also important further need for the patient care. We already discuss it the Myocardial infraction have some genetic predisposition so the study shows that the 60(46%) patients have family history of myocardial infarction are positive and use of statins medications 75(57.5%) is prevalent of myocardial infarction.

The results of the present study indicates that a strong association between smoking/alcohol and myocardial infarction patient consuming 3 or more than smoking /alcohol drinks per day show that the higher prevalence of myocardial infarction compare to those consuming not use of smoking or alcohol. Metabolic syndrome is a cluster of cardiovascular disease risk factors characterized by abdominal obesity, raised fasting blood glucose, elevated triglycerides, reduced high density lipoprotein cholesterol (HDL-C) and hypertension. The metabolic syndrome is a predisposing factor for endothelial dysfunction and atherosclerotic cardiovascular disease.

5.2 Conclusion:

The comprehensive analysis of prevalence of myocardial infarction in admitted patients at tertiary care hospital (SGTH). Studies have consistently shown that myocardial infarction (MI), A diet for high cholesterol use, smoking, sedentary lifestyle, alcohol consumption, and psychological stress factors are significant risk factors for peptic ulcers. The prevalence of peptic ulcers varies globally, with a higher incidence in developing countries. Additionally, demographic factors such as age, sex, and socioeconomic status also play a role in the development of myocardial infraction. Understanding the prevalence of myocardial infarction is crucial for developing effective prevention and treatment strategies. Furthermore, public health initiatives should focus on promoting healthy lifestyles, improving socioeconomic conditions, and increasing access to healthcare services to reduce the burden of myocardial infraction.

Healthcare providers should emphasize the importance of Myocardial Infraction eradication, high cholesterol avoidance, smoking cessation, proper daily exercise, and moderate alcohol consumption to reduce the risk of myocardial infarction. The association of myocardial infarction with symptoms such as chest pain, radiated to left shoulder involve left hand, stomach discomfort like nausea and vomiting, underscores the need for a thorough understanding of the impact of this myocardial infarction patient health. Noteworthy findings include the potential links between higher cholesterol consumption and increased prevalence of myocardial infarction, emphasizing the importance of dietary habits in MI prevalence of the metabolic syndrome is high worldwide and increasing day by day due to sedentary lifestyles, the findings of the present study have important implications for clinical practice. Emphasis must be placed on the intake of balanced diets and the control of blood lipid levels, particularly that of triglycerides. So, it is recommended that every patient who presents with myocardial infarction with metabolic syndrome should be given intensive care and early intervention with aggressive risk factors modification. However, it is also required that every setup should have their surveillance in order to know the frequency of the problem. The observed correlation between the myocardial infarction and use of cholesterol were high, emphasizing to stop the use of high cholesterol diet or proper exercise to prevent the occurrence of MI. Furthermore, the gender-wise and age-wise variations in prevalence of MI provides valuable insights for tailored interventions and targeted screening efforts. In

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the end, myocardial infarction cases are a significant public health concern, and addressing the associated factors is essential for preventing and managing this condition.

5.3 RECOMMENTAIONS:

1. Develop public awareness campaigns:
Create campaigns to raise awareness about the risks and prevention of myocardial infarction, targeting high-risk populations.

2. Educate healthcare providers:
Provide healthcare providers with the latest guidelines and recommendations for the prevention and treatment of myocardial infarction.

3. Promote healthy lifestyles:
Encourage healthy lifestyles, including a balanced diet, regular exercise, and stress management to prevent the risks of prevalence of myocardial infraction.

4. Establish screening programs:
Establish screening programs for myocardial infarction, especially in high-prevalence areas. Encourage individuals to seek medical attention if they experience symptoms of myocardial infarction or history of CVD in family.

5. Encourage smoking cessation:
Encourage smoking cessation programs and social media companies and provide resources for individuals who want to quit smoking.

6. Conduct epidemiological studies:
Conduct epidemiological studies to better understand the prevalence of Myocardial infraction and also establish surveillance systems to monitor the incidence and prevalence of myocardial infarction.

7. Improve access to health care:
Improve access to healthcare services, especially in rural or underserved areas. Develop guidelines and protocols, enhance healthcare provider training on the diagnosis, treatment, and prevention of myocardial infraction.

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