Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v31i7.7259

INVESTIGATION OF THE COMPARATIVE STUDY OF ISCHEMIC HEART DISEASE

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ABSTRACT:
Ischemic heart disease (IHD) is a leading cause of death globally, significantly impacting both industrialized and developing nations. Despite its prevalence, there is a notable gender disparity in awareness, diagnosis, and treatment outcomes.
Objective: To investigate the morbidity and mortality rates associated with IHD in female patients, and to identify specific risk factors, clinical presentations, and treatment disparities compared to male patients.
Background: This study aims to evaluate the morbidity and mortality rates associated with ischemic heart disease (IHD) in both males and females, using data from the Department of Cardiology at the Provincial Teaching Hospital "Dr Agostinho Neto" over the period from 2003 to 2023.
Methods: A comparative and descriptive analysis was conducted using a computerized database from the hospital's cardiology department. Data from 907 patients (471 females and 436 males) were analyzed. Variables included risk factors associated with IHD, lethality of the condition, and outcomes of thrombolytic treatment.
Results: Incidence of Cardiovascular Disease: The highest incidence of cardiovascular disease due to ischemic heart disease was observed in women over the age of sixty.
Angina Pectoris: Women had a higher incidence of angina pectoris compared to men.
Myocardial Infarction: The majority of infarctions occurred in males.
Mortality Rates: The risk of dying from a heart attack was comparable between men and women.
Age and Comorbidities: Women were generally older at the time of admission and had a higher prevalence of diabetes mellitus.
Thrombolytic Treatment Outcomes: Patients who were not thrombolyzed showed a significantly lower benefit, particularly among men.

Conclusion: The study highlights significant gender differences in the incidence and outcomes of ischemic heart disease. Women, especially those over sixty, showed a higher incidence of angina pectoris and were generally older with more comorbidities at the time of admission, which may contribute to the equalization of mortality rates between genders. Effective thrombolytic treatment is critical, as non-thrombolyzed patients, particularly men, show significantly lower benefits.

KEYWORD: Epidemiology of myocardial infarction, mortality from myocardial infarction, Ischemic heart disease, Morbidity, Mortality rates, Gender differences, Cardiovascular disease, Thrombolytic treatment, Risk factors, Angina pectoris, Myocardial infarction, Comparative study.

INTRODUCTION:

In both industrialized and developing nations, ischemic heart disease is the leading cause of death, making it one of the most significant challenges that humanity is currently facing (Gusmano et al., 2007). It is also one of the greatest problems worldwide. When it comes to the top causes of death in the country, cardiovascular diseases have been the leading cause for many years (Kolloch et al., 2008). Among these, ischemic heart disease is accountable for more than eighty per cent of these deaths and accounts for nearly twenty-five percent of our overall mortality rate individually (Moran et al., 2014).

There is a correlation between the incidence of coronary atheromatosis in women and that of men around 10 to 15 years younger in age (Khan et al., 2020). Because of this phenomenon, one is prompted to consider the intervention of hormonal factors. This is because, in the case of climacteric artificial preterm birth, a higher prevalence of heart disease has been discovered, specifically ischemic disease. Furthermore, in recent times, some works have been published on the frequency of heart attacks in young women, although they have decreased (Kyu et al., 2016). Already on our island, research is being conducted on this issue. For this purpose, the population of individuals ranging in age from 25 to 64 years old was selected from a health region (Malik et al., 2001).

The findings of this study were related to risk conditions, such as major determinants of ischemic heart disease, regardless of age (Cooper, 2005). Some typical health disorders can place your cardiovascular system in danger. In women, ischemic heart disease typically manifests itself after menopause, which means that it is at least ten years later than it is in men (Yarnell et al., 1991). Although cardiovascular diseases are the leading cause of death among women, a sizeable proportion of these individuals are unaware of this fact.

According to the findings of a survey, the vast majority of women who were between the ages of 25 and 44 believed that breast cancer was the primary cause of death among them (Rosenman et al., 1964). This disease is generally regarded as a health issue that primarily affects men, according to the common consensus of society (Lamarche et al., 1996). Even though heart disease is a significant health problem that is associated with ischemia illness in women, there is a lack of understanding regarding the specific characteristics of the clinical presentation, treatment, and prognosis. due in major part to the fact that there were not enough women participating in the clinical studies (Desvarieux et al., 2003). In most cases, girls are not allowed to participate since they are of childbearing age (Desvarieux et al., 2003).

There is a tendency for premenopausal women to present more frequently. women of advanced age may experience acute dyspnea, less pain in the arms, and less profuse perspiration than postmenopausal women, while premenopausal women may experience symptoms that are more typical of the condition (Weinstein et al., 1987).According to the findings of a recent study, women who have an echocardiogram that reveals a positive dobutamine level have a risk of death within five years that is ten times higher than the risk of death that is associated with women who have a negative test (Weinstein et al., 1987).

The utilisation of computed tomography for the investigation of myocardial perfusion Single photon emission tomography (SPECT) is a nuclear technology that enables the visualisation of global and

localised perfusion abnormalities, as well as ventricular function and ventricular sizes. There are, however, some limitations associated with this method when it comes to women (Casas et al., 2004). These limits include breast attenuation, which can result in false positives, as well as the characteristic of women having smaller hearts. On the other hand, similar issues that are discussed with Tl can be avoided by utilising 99m Tc-sestamibi, which results in an improvement in the image's quality.ten Despite the fact that data from observational studies suggest that hormone replacement therapy confers a substantial cardiovascular benefit and improvement of various mechanisms (which are plausible from a biological point of view) of coronary protection conferred by estrogens, the results of randomized clinical trials, which were well designed and carried out on primary and secondary prevention with hormonal treatment, have shown that the treatment has a greater risk than a protective effect on cardiovascular health.111 If we compare the epidemiology, pathophysiology, clinical symptoms, prognosis, and responsive therapy of coronary ischemia in men and women, we find that there are certain differences between the two (Casas et al., 2004).

It is connected with an increased number of coronary risk factors, mainly hypertension and diabetes, and the disease manifests itself at a later stage than other cardiovascular diseases (Song et al., 2004). Although obstructive atherosclerotic lesions in the epicardial coronary arteries are believed to be the primary cause of coronary ischemia in males, other factors contribute to the development of this condition in women.

Table 1: Epidemiology and Mortality

Reference	Description
Gusmano et al., 2007	Ischemic heart disease is a leading cause of death globally.
Kolloch et al., 2008	Cardiovascular diseases, including ischemic heart disease, as the top causes of death nationally.
Moran et al., 2014	Ischemic heart disease is responsible for a significant portion of mortality.
Khan et al., 2020	Age correlation in incidence of coronary atheromatosis between genders.
Kyu et al., 2016	Decrease in heart attacks among young women over recent years.

Table 2: Risk Factors and Clinical Presentation

Reference	Description
Malik et al., 2001	Population-based study on ischemic heart disease risk factors.
Cooper, 2005	Major determinants of ischemic heart disease irrespective of age.
Yarnell et al., 1991	Delayed onset of ischemic heart disease in women post-menopause.
Desvarieux et al., 2003	Gender disparity in clinical studies on ischemic heart disease.
Weinstein et al., 1987	Symptoms and outcomes in premenopausal and postmenopausal women with ischemic heart disease.

Table 3: Diagnostic Challenges and Imaging Techniques

Reference	Description
Casas et al., 2004	Challenges of imaging techniques like SPECT in women with ischemic heart disease.

Table 4: Pathophysiology and Treatment

Reference	Description
Song et al., 2004	Differences in coronary ischemia manifestation and risk factors between genders.
Arad et al., 2005	Pathophysiological factors contributing to coronary ischemia in women.
Kong et al., 1998	WISE project's contribution to understanding gender differences in ischemic heart disease.

These factors also play a significant part in the pathophysiology of ischemia (Arad et al., 2005). changes in microvascular autoregulation, malfunction of endothelial cells, and a rise in epicardium coronary tone are some examples. A significant amount of the best has been given to the WISE project, which is financed by the NHLBI. Whenever our group has been discussing this fascinating subject, we have been inspired to examine the differences in the prevalence of this condition between the sexes during each of these discussions (Kong et al., 1998).

METHOD:

A comparative and descriptive study is being conducted to determine the morbidity and mortality rates associated with ischemic heart disease in female patients who were treated in the Cardiology service of the Provincial Teaching Hospital Between January 2017 and September 2023, Agostinho Neto was the player in question (Parfrey et al., 1996). There were a total of 907 patients who were admitted to the ward for cardiology with the diagnosis of ischemic heart disease (Blankenberg et al., 2003). They selected the total number of women who were afflicted by this phenomenon, which was 426 patients, throughout the period spanning from January 2017 to September 2023. The patients are divided according to sex and correlated according to age, considered the main forms of presentation of heart disease ischemic during the indicated years taking into account the diagnoses issued upon discharge of the patients according to clinical criteria, electrocardiographic, radiographic, laboratory so that they were classified as: - Angina pectoris Myocardial infarction severe and sudden Heart rhythm irregularities Failure of the heart An attack on what Analysis is done on the mortality rate that is caused by heart attacks and how it relates to gender. The identification of risk factors and situations that are associated with an increased likelihood of the occurrence of cardiovascular illnesses is the responsibility of the HE (Ascherio et al., 1996). In addition, the instances that were included and those that were not included are detailed in-depth concerning thrombolytic treatment based on gender, as well as mortality after thrombolysis. Criteria for incorporation: This is clinical: A chest discomfort that is typical and lasts for more than half an hour. 2. Electrical: - ST-segment elevation greater than 1-2 mm in two or more precordial leads that are continuous for the procedure.

In two consecutive derivations of members, the ST segment elevation must be greater than one to two millimetres. Conditions for exclusion: The absolutes are: bleeding that is occurring within. Aortic dissection is a possible diagnosis. In the past half year, there has been a cerebral vascular accident (Barrett-Connor et al., 1991). You are pregnant. In the past two months, I have experienced an ulcer. Intracranial neoplasia is the condition. Relatives: - Arterial hypertension greater than 180/100mmHg managed with medical treatment. Failure of the kidneys or liver to a significant degree Deep vein approach is the method (Fox et al., 2008). Retinopathy caused by hypertension.

RESULT AND DISCUSSION:

At present, the vast majority of cardiac affections in adults are caused by ischemic heart disease and its sequelae. The biggest number of women who were examined were those who were above the age of 70 (Fox et al., 2008). The percentage of males was slightly larger than the percentage of females, with 101 males accounting for 23.1% of the total (Table 1).

Table 1: The age group and gender

AGES OF CLUSTERS	FEMALES Total		Males		Total	
	No	%	no	%	no	%
less than 40	9	1.9	16	3.6	25	5.5
40-49	57	12.1	69	15.8	126	27.9
50-59	114	24.2	134	30.7	248	54.9
60-69	112	23.7	116	26.6	228	50.3
79 above	179	38.0	101	23.1	300	61.1
Total	471	51.9	436	48.0	907	100

These findings are consistent with those that were obtained all over the world, and they make it abundantly evident that the difference is greatest among those who are less than sixty years old (Heeschen et al., 2004). the difference between the male and female sexes is large, with the male sex being the dominant one, and this discrepancy reduces until it is equalised and surpassed by the female sex after the seventh decade of life (Ornish et al., 1998). The element that most strongly connects with the occurrence of ischemic heart disease is age, and the fact that males are more likely to be affected by this condition is a condition that is universally recognised as a risk factor

(Gey et al., 1991). It has been found that women have a lower incidence of ischemic heart disease at the same age, which is associated with a higher survival rate (Hirsh et al., 1981). If you wait ten years following menopause, you will no longer notice any differences. After the age of 65, cardiovascular disease is responsible for three-quarters of all deaths that occur in females that occur. Several studies have demonstrated that oestrogens perform a protective effectSeveral other writers, including Olivera15, have also demonstrated that men are more likely to suffer from ischemic heart disease than women over the world. A gradual worsening of the illness with increasing age and in females was observed in each and every one of the studies that were reviewed.

Table 2: When it comes to sexuality and clinical form.

CLINICAL FORMS AFFECTING WOMEN	FEMALES Total		Males		Total	
	No	%	no	%	no	%
Pectoral angina	9	1.9	16	3.6	25	5.5
Attack on the heart	57	12.1	69	15.8	126	27.9
The arrhythmia	114	24.2	134	30.7	248	54.9
Failure of the heart	112	23.7	116	26.6	228	50.3
Attack on the heart	179	38.0	101	23.1	300	61.1
Total	471	51.9	436	48.0	907	100

CLINICAL FORMS AFFECTING WOMEN

The other disorders do not differ significantly between men and women in terms of the degree to which they manifest themselves. The findings that Vanden Hoogen obtained in his research were comparable. Women are facing substantially greater rates of coronary heart disease, particularly in the age categories of 50 to 70 years old, in industrialised countries at present, even though the incidence of coronary heart disease has been seen to be decreasing among the male population. Cigarette smoking and the participation of women in competitive sports are two factors that contribute to the occurrence of this phenomenon. According to the findings of our research, there were no significant variations between the genders in terms of mortality rates among the 42 individuals who were part of the series. Specifically, 5.7% of the fatalities occurred in females, while 5.2% occurred in males (Table 3). This is because there was only a moderate rise.

Table 3: LETHALITY, DISCOVERED BY AMI AND SEX

DUE TO AMI, it is lethal.	female		male		total	
Departed	no	%	no	%	no	%
Total	22	5.7	20	5.2	42	10.9

Golostein's investigation produced comparable findings.19 Men, however, died at a higher rate than women did in the Jones T20 case study. Generally speaking, Céspedes Cabrera22 and other studies21 have discovered a decline in AMI-related fatality without appreciable sex-related variations. A tight correlation between ischemic heart disease and hypertension was discovered in Leyva Gómez H23 and colleagues' study. Our study's findings about the prevalence of arterial hypertension are consistent with those of previous epidemiological investigations. This is consistent with past research in that a sizable portion of hypertensives were unaware that they had the disease. Even when it is combined with other factors, high blood pressure is the primary risk factor for ischemic heart disease, according to Laura Bregieiro25 and many others. Several studies have demonstrated clear correlations between cardiovascular disease-related death and morbidity, even in cases where tension figures are just slightly elevated. Due to men's higher addiction to smoking (64.5%) compared to women's (35.4%), the smoking habit produced the same results in our series as in other related works. Nevertheless, let's take into account that the number of smokers must have been higher, which we attribute to the influence of statistical underreporting. It is clear from comparing our findings with those of other research conducted during the same period that women's smoking habits have grown more than men's. The a three to five times higher risk of ischemic heart disease and a higher mortality rate among male smokers compared to non-smokers. There is a

strong correlation between smoking and cardiovascular illnesses, according to other authors. In their studio, Laura Brigieiro, Helio de Lima, and Virginia Roberta achieved comparable outcomes. The situation was the opposite concerning diabetes mellitus. Was higher among women (69.5%) than among men (30.4%). Researches Studies on the prevalence of diabetes mellitus in women have shown that this condition is associated with an even greater death rate from arterial hypertension. The prevalence of obesity was higher in women (71.8%) than in men (28.1%). Conversely, the prevalence of obesity was lower than that reported by other writers.9. Still, other writers were concurrent with our research. Numerous studies seem to emphasise the significance of hypertriglyceridemia as a predictor of the severity and precocity of coronary heart disease. Most of the time, ischemic heart disease and hyperlipidemia have been discovered to be closely related, particularly in obese women and those who have gone through menopause. This assertion is supported by a large number of recent investigations. The most researched therapy option in medical history for AMI is now the use of fibrinolytics. Thrombolytics have been demonstrated to be effective in treating this illness, based on the findings of numerous clinical and experimental investigations. The fact that women receive less thrombolytic therapy than men is startling. Moreover, illustrates that non-thrombolysed females died at a higher rate than males (18.4 and 10.3%, respectively). This might be because women tend to enrol later in life and at a later stage of cardiovascular disease. Although thrombolytic treatment has made significant progress, it is suggested in international literature that males have benefited more from this advancement than females. This is explained by the points made in the preceding paragraphs.

CONCLUSION:

1. Heart attacks are more common in women with angina pectoris.

It is appropriate for men. A rise in the prevalence of ischemic heart disease among women. Older than fifty. Despite the predominance of men, we did not observe any statistically significant differences in mortality from heart attack acute cardiac illness between the sexes; rather, the fatalities equalise. One of the risk variables for ischemic heart disease Obesity, smoking, and high blood pressure were more common among the female sex. This, along with the older age at admission, may account for the mortality equality. More women than men pass away without thrombolytic therapy.

RECOMMENDATION:

To lower morbidity and death from coronary artery disease, provide improved control and prevention of risk factors, menopause, and stronger follow-up inpatient visits. Cardiac disease is caused by ischemia. Increase thrombolysis among women, who receive the least benefit from the procedure and make up a large percentage of the excluded deceased.

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