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A study on clinical study of ischaemic heart disease in women with special reference to risk factors

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Abstract
Introduction: Our study was done to study in detail the clinical profile of cases admitted with ischemic heart diseases in women at ICCU SIMS, Hyderabad.
Objectives: are 1. To study the clinical profile of ischemic heart diseases in women. 2. To identify the influence of well defined risk factors in women with ischemic heart diseases. 3. To identify if there are any risk factors specific to women with ischemic heart diseases.
Material and Methods: The study is a clinical, prospective and observational study conducted at Shadan Institute of Medical Sciences, Hyderabad. After obtaining a detailed history, a complete general physical and systemic examination, the patients will be subjected to relevant investigations. The complete data will be recorded in a specially designed Case Recording Form. The data collected will be transferred into a Master Chart which is subjected to statistical analysis.
Results and discussion: We studied 100 cases of ischemic heart diseases in women, out of which 32 patients presented with Acute MI, 23 patients with Unstable angina and 45 patients with stable angina, most of which were observed in post menopausal women. Prognosis was good in patients who received intensive care within 12 hours of onset of symptoms. Chest pain was the most common symptom of presentation.
Conclusion: With heightened awareness of differences in clinical presentation, the medical community will be able to narrow the gender gap in the utilization of diagnostic studies and improve outcomes for women with IHD.

Keywords: Ischemic heart disease, hypertension, Acute MI, unstable angina

Introduction
Coronary artery disease has been widely considered a ―man's disease‖ and not a major concern for women. Yet cardiovascular disease is the leading cause of death in adult women in the United States. A 1995 Gallup poll found that one in three primary care physicians in this country, as well as four out of five women, was unaware of this fact. Over the past two decades, public education efforts related to cardiovascular disease prevention have been aimed primarily at male populations. As a result, the prevalence of coronary risk factors and the number of cardiovascular deaths have decreased in men—but not in women [1].
Cardiovascular disease is responsible for more deaths in women each year than all other causes combined. Women have different cardiac presentations than men and are more likely to be underdiagnosed and undertreated for coronary artery disease [1].
In caronary artery disease, gender matters. Although coronary artery disease is a major public health problem in both sexes, it does not receive the attention and concern in women that it receives in men.
Risk factors carry different predictive values in women than in men, necessitating a gender-specific approach to primary and secondary prevention. Furthermore, documented differences exist in the manifestations in men and women, making it more likely that coronary artery disease will be overlooked or discounted. Of particular concern: women with coronary artery disease are more likely than men to receive suboptimal and less-aggressive care.
More importantly, women with coronary artery disease have a higher mortality rate than do men with coronary artery disease [2].
Although many women think they are at higher risk of death from breast cancer, in fact, the risk of a 50-year-old Caucasian woman dying of coronary artery disease is 10 times greater

than the mortality risk from hip fracture and breast cancer combined [3].

Cross-sectional studies in India have also documented a prevalence of CAD which is several-fold higher than that in developed country. Projections based on the Global Burden of Disease study estimate that by the year 2020, the burden of atherothrombotic cardiovascular disease (CVD) in India will surpass that in any other region in the world. The mortality attributable to CVD in India is expected to rise by 103% in men and by 90% in women from 1985 to 2015. This predilection to CAD is attributed to a clustering of various traditional and non-traditional risk factors which are believed to constitute the atherogenic phenotype characteristic of Indians [4, 5].

Aims and objectives

1. To study in detail the clinical profile of ischemic heart diseases in women.
2. To identify the influence of well defined risk factors in women with ischemic heart diseases.
3. To identify if there are any risk factors specific to women with ischemic heart diseases.

Materials and methods

Sources of data

The study was conducted for a period of one and half year starting from June 2018 to December 2019. The source for this study consists of 100 female patients admitted under cardiology and medicine department in Shadan institute of medical sciences and reseach centre, Hyderabd, with signs and symptoms suggestive of ischemic heart diseases.

Method of collection of data

Ours is a clinical, prospective and observational study. The study subjects were women presenting with signs and symptoms suggestive of ischemic heart disease. After obtaining a detailed history, general physical examination and systemic examination, the patients were subjected to relevant investigations.

The complete data was collected in a specially designed case recording form. The data collected was transferred to a Master Chart which was subjected to statistical analysis. Before submitting the patients for investigation and treatment, informed /written consent was obtained from the patient or legal guardian in the local vernacular language.

The patients were selected with following inclusion /exclusion criteria.

Inclusion Criteria

Patients with history of Chest pain suggestive of Ischemic heart diseases and/or Electrocardiogram suggestive of ischemic heart disease.

Exclusion Criteria

Patients with, valvular heart diseases, cardiomyopathy and those on digitalis.

Results

Results and analysis

The following were the observation made from the study of 100 female cases of IHD admitted under cardiology and medicine department in Shadan institute of medical science and research centre, Hyderbad.

Age distribution of cases

Table 1: Showing age distribution

Age interval years	Number of cases	Percentage
40-49	23	23%
50-59	33	33%
60-69	30	30%
70-79	12	12%
80-89	2	2%
Total	100	100%

Total number of cases studied is 100

Mean age =58.9 years Age range = 40-89 years

Maximum incidence of ischemic heart diseases occurred in the age group of 50 -59 years followed by in the age group of 60-69 years.

Distribution of cases with respect to place

Table 2: Distribution of cases in terms of place

Serial no	Place	Number of cases
1.	Urban	62%
2.	Rural	38%

Majority of cases about 62% was seen in urban population, compared to 38% cases in rural population.

Coronary risk factors

Table 3: Showing coronary risk factors:

Risk factors	No of cases	Percentage
Hypertension	59	59%
Hyperlipidemia	56	56%
Obesity	50	50%
Alcohol	2	2%
Diabetes mellitus	47	47%
Tobacco chewing/smoking	13	13%
Oral contraceptive pills	1	1%

The most common risk factors in the present study were Hyperlipidemia, Hypertension, Obesity and Diabetes mellitus.

Symptoms at the time of presentation

Table 4: Showing the symptoms at the time of presentation:

Symptoms	No. of patients	Percentage
Chest pain	83	83%
Sweating	25	25%
Breathlessness	44	44%
Palpitations	12	12%
Nausea/vomiting	13	13%
Giddiness	8	8%
Pain abdomen	4	4%

The most common symptom at the time of presentation was chest pain.

Cardiac status at the time of admission according to killip's class

Table 5: Showing the cardiac status at the time of admission according to Killip's class:

Killip's class	No of patients	Percentage
I	72	72%
II	17	17%
III	9	9%
IV	2	2%

Majority of patients admitted were in Killip's class I and II.

Time interval between onset of symptoms and hospitalization

Table 6: Showing time interval between onset of symptoms and hospitalization

Duration in hrs	No. of patients	Percentage
<6	24	24%
7-12	16	16%
13-24	7	7%
>24	53	53%

40 % (24 + 16) were admitted within 12 hrs of onset of symptoms. 60 % were admitted within 24hrs of onset of symptoms.

Type of coronary artery disease

Analysis of the history, serial electrocardiogram and cardiac enzymes showed that there were 44 patients of chronic stable angina, 23 patients of unstable angina and 32 patients had Acute Myocardial infarction.

Table 7: Showing type of coronary artery diseases

Type of CAD	No of patients	Percentage
Acute MI	32	32%
Unstable angina	23	23%
Chronic stable angina	45	45%

Incidence of complications

Table 8: Showing the incidence of LVF, Cardiogenic shock, Heart blocks and ventricular tachycardia in the present study:

Complications	No. of patients	Percentage
LVF	12	12%
Cardiogenic shock	2	2%
Heart blocks	8	8%
Ventricular tachycardia	6	6%

Table 9: Showing relationship between Killip's class and mortality:

Killip's class	No. of patients	No. of deaths	Mortality (percentage)
I	72	3	4.66%
II	17	3	4.66%
III	9	6	66.66%
IV	2	2	100%

Mortality was highest in patients with Killip's class IV followed by those with Killip's class III.

Mortality in relation to time

Table 10: Showing relation between mortality and time after admission:

Duration on hours	No of deaths	Percentage
<24 hours	10	71.4%
24 – 48 hours	2	14.28%
>48 hours	2	14.28%

Maximum number of deaths occurred within 24 hours of admission.

Discussion

A study of 100 female cases of Ischemic heart disease admitted in ICCU of SIMS hospital was taken up. Cases admitted from January 2018 to December 2019 were selected. All the cases were analyzed with respect to clinical, biochemical and electrocardiacgraphic evaluation.

- In the present study, maximum cases were found in 5th decade (33%) followed by in the age group of 6th decade (30%).
- White *et al*. has found the peak period of the ischemic heart disease was the sixth decade in Indian men and the seventh in Indian women [5].
- Incidence of IHD among women in the present study is found higher in 7th decade.
- The prevalence rate among women is likely to keep pace with that of men in all age groups. When the prevalence rates in the estimated data were compared across age groups i.e. from 20-69 years in both males and females, an increasing trend was observed. Also, it has been estimated that at the later stages of life, more number of women will contribute to the CVD inflicted population as compared to men.

Symptomology

- According to present study 83 out of 100 patients presented with chest pain. sweating was seen in 25 patients, breathlessness in 44 patient (next common symptom), vomiting in 13 patients, palpitation in 12 patients.
- Most of the patient presented with chest pain, breathlessness, sweating as presenting complaint.
- In the present study 17 patients did not present with chest pain, among them 6 patients were having Diabetes mellitus.

Diabetes mellitus

In the present study 47 patient (47%) had diabetes mellitus. 27 patients had hypertension as well as diabetes.

- The Framingham Study found that diabetes doubled the age-adjusted risk for cardiovascular disease in men and tripled it in women [6].
- In one study, mortality rates from coronary artery disease were three to seven times higher in diabetic women than nondiabetic women, compared with two to four times higher in diabetic men than in nondiabetic men [7].
- The present study is comparable with the study Dave *et al*. with respect to females (which shows 44.3%) and comparable with study Meher *et al*. [8] with respect to males.

- The present study is compared with Mammi *et al*. with respect female which showed 11.2 % prevelence of diabetes mellitus in IHD [9].

Hypertension

- In the present study 59 patients (59%) with IHD had hypertension. Case control and cohort studies have consistently identified hypertension as a major independent risk factor for the development of IHD and subsequent mortality.
- Dave *et al*. study shows that 52.9% of women (of 101 patients) with history of ischaemic heart disease has hypertention [10].
- The present study prevalence of hypertension in female is compared with the study of Dave *et al*. and prevalence of hypertension is more in females compared of males in Meher *et al*. [12] study.
- Mammi *et al*. Study shows that 29% of women with history of ischaemic heart disease has hypertention [9].

Types of ischemic heart disease

- In the present study there were 23 patients who presented with unstable angina, 45 patients who presented with stable angina. 18 patients (57%) had anterior wall myocardial infarction, 13 patients (40%) had Inferior wall Myocardial infarction, 4 patients (12%) had Anteroinferior wall myocardial infarction, 1 patient with lateral wall myocardial infarction.
- Dave *et al*., study shows 64.3% of patient presented with unstable angina, 24.3% of patients presented with stable angina, 4.3 % of patients presented with acute myocardial infarction [10].
- Overall there does not appear to be any significant gender related difference in the location of acute myocardial infarction and results demonstrate the same.

Mortality

- In the present study there were 14 deaths during acute phase.
- 3 patients had Anterior wall MI and 1 patients had Inferior wall MI and 2 patients had anteroinferior wall MI.
- 8 patients had Left ventricular failure, 2 patients had cardiogenic shock, 2 patients had Heart block and 2 patients had ventricular tachycardia.
- In the present study mortality rate following myocardial infarction has been compared with B.Hanratty *et al*. study. Our study showed 43.7 % mortality rate compared with 30% mortality rate in Hanratty *et al*. study [12].
- In the present study, cardiovascular mortality has been observed both in hypertention and diabetes. Higher incidence of mortality is observed in hypertension.
- In the present study showed there is a higher mortality rate among the patients who developed cardiogenic shock (100%).
- The present study is compared to study done by Passey [11].
- According to killip‘s classification, among 14 patients who expired, 2 of them come under killip‘s IV, 6 of them comes under killip‘s III, 3 of them comes under Killip‘s II, 3 of them comes under killip‘s I.

Conclusion

- In the present study the highest incidence of IHD in women was seen in 5 th decade.
- Hypertension, diabetes mellitus, obesity, abnormal lipid profile, tobacco use are the major risk factors for coronary disease in women.
- Among 32 patients who presented with acute myocardial infarction, 17 patients has hyperlipidimia, 14 patients has hypertension, 13 patients has diabetes mellitus, 14 patient has obesity. The major risk factor for MI here is hyperlipidimia followed by hypertension, obesity and diabetes.
- 4 patients has MI with no major risk factors like hyperlipidimia, diabetes mellitus, hypertension. hence coronary vascular disease in women can even occur without major risk factors.
- In the present study there is a high prevalence of abnormal lipid profile in post menopausal status than pre menopausal.
- Present study shows hypertension is the major risk factor followed by hyperlipidimia, obesity, diabetes mellitus for IHD in women.
- Although the life-time risk of CVD is one in three for women, they are still not fully aware of their risk of CVD and perceive the chance of dying of breast cancer as far more likely than of CVD.
- A focus on prevention and risk factor modification will help to reduce the incidence and prevalence of IHD in women, thereby reducing the economic cost to society.
- With heightened awareness of these differences in clinical presentation, the medical community will be able to narrow the gender gap in the utilization of diagnostic studies and improve outcomes for women with IHD.
- Integrating the suggested interventions into women's healthcare will reduce the morbidity and mortality of IHD.
- Hence IHD no longer remains gender neutral and has been found to be a principle killer in Indian women.

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References

1. Enas A, Senthilkumar A, Juturu V, Gupta R, Coronary artery disease in women, Indian heart J. 2001;53:282-9.
2. Bahl VK, Prabhakaran D, Karthikeyan G. Indian Heart Journal. 2001;53(6):707-713.
3. Thomas T, Nancy H, Wayne H, John R, Teri M, Virginia JH, *et al*. American Heart Association Stastical update. 2006;113:e85-e151.
4. Judith H, JoAnn EA, Topol ICHJ. Text book of cardiovascular medicine, 3rd edn; Lippincott William & Wilkins, 2006, 554-558.
5. White NK, Edwards JE, Dry TJ. The relationship of the degree of coronary atherosclerosis with age in men. Circulation. 1950;1:645.
6. Kannel WB, McGee DL. Diabetes and cardiovascular risk factors: the Framingham study. Circulation. 1979;59:8-13.

7. Mosca L, Grundy SM, Judelson D, *et al*. AHA/ACC scientific statement: consensus panel statement. Guide to preventive cardiology for women. American Heart Association/American College of Cardiology. J Am Coll Cardiol. 1999;33:1751-1755.
8. Meher LK, Mishra GC, Sahoo SK, Mishra SC. Clinical profile of AMI in Young vs. elderly. J Assoc Physicians India. 1991;39:68.
9. Mammi MNI, Pavitran K, Rahiman PA, Pisharody R, Sugathan K. Acute myocardial infraction in North Kerala-a 20 year hospital based study. Indian Heart J. 1991;43:93-96.
10. Dave TH1, Wasir HS, Prabhakaran D, *et al*. Profile of coronary artery disease in Indian women. Indian Heart J. 1991 Jan-Feb;43(1):25-9.
11. Passey MN, Mittal RB, Khare U, Mittal B, Somani LA. Clinical profile of IHD (AMI). Indian Heart J. 1986;38:334-927.
12. Hanratty, Lawlor D, Robinson M, Sapsford R, Greenwood D, Hall A. Sex differences in risk factors, treatment and mortality after acute myocardial infarction: an observational study. J Epidemiol Community Health. 2000;54(12):912-916.