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## An incidence of ischemic heart disease in women of South India

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### Abstract

**Background:** Ischemic heart disease also known as Coronary artery disease is a most common condition in Indian population which allows inadequate supply of blood and oxygen to a portion of the myocardium. It stands as one of the primary causes of death in both men and women and hence need for clinical investigation of IHD in our population is important.

**Aim:** The study is designed to know the clinical profile of female participants attending tertiary care hospital in south India.

**Materials and Methods:** All participants included in the study are symptomatic to IHD and biochemical and electrocardiogram was performed to screen the participants and participant's history is collected.

**Results:** A total of 140 participants were considered for the study and 120 were identified as IHD positive. Mean age of participants was 55 and most of the incumbents reported chest pain as the major complication followed by other complications like hypertension and diabetes.

**Conclusion:** The incidence of IHD is found to be highest in 53-57 year age group with diabetes, hypertension and Dyslipidaemia as the major risk factors. Lack of awareness in participants also delayed them in their arrival to hospital. Hence there is an immediate need to conduct awareness campaigns in rural areas of our democratic country.

**Keywords:** cardio vascular disease, electrocardiogram, ischemic heart disease

### Introduction

Apart from various non-communicable diseases like cancers, chronic respiratory illness and diabetes, that account for 60% of deaths, cardiovascular diseases occupies a major place. The variants of CVDs like ischemic heart disease and cerebrovascular diseases like stroke accounts for 17.7 million deaths [1]. World Health Organization reports that in India most of the young population accounts for one-fifth of these deaths. Global Health Burden of Disease study state age-standardization in India proclaims that CVD death rate is 272 per 100000 people that is at peak than global average of 235 [2].

Cardiovascular diseases being the major cause for mortality in both men and women are in rise heading further in upcoming decades. The most common risk factors include diet, physical inactivity, consumption of alcohol and tobacco. Additional effects like raised blood pressure, glucose and lipids in adjuvant with obesity increase its risk. There are certain other determinants of CVDs like socio-economic and cultural change- urbanisation and population aging along with stress, hereditary factors and poverty. The average rate of CVD differs from state to state as it is predominant in Kerala, Punjab and Tamil Nadu due to high levels of blood pressure and cholesterol. CVD accounts for 32% of deaths in women and 27% in men all over the world [3].

Among CVDs, Ischaemic heart disease causes more number of deaths in developing countries and remains to be a major health burden. It stands in third place in mortality rate of women globally. The reasons like longer life span of women than men is demanding a rise of deaths in the upcoming decades [4]. Disease diagnosis is also another limitation for IHD as women report atypical symptoms like back pain, shortness of breath and nausea [5]. Women tend to report varying complaints and overall prognosis and hence there is lacunae in research on women specific to IHC. This research gap enabled us to focus on determining the clinical profile of women with IHD and also aimed to knock out the hidden reasons in our population.

## Materials and Methods

Clinical subjects for the study were included from the Department of General Medicine, Maharajah's Institute of Medical Sciences, Nellimarla. Women with suggestive symptoms of IHD were diagnosed and included in the study between August 2018 to February 2020. Total of 140 women diagnosed with IHD were included in the study.

Other clinical examinations, family history of the patient and socioeconomic status were collected. History of co-morbid conditions like diabetes, hypertension and obesity were noted. An Electro cardiogram (ECG) was taken to evaluate the onset of infarct and if necessary other biochemical tests were performed. Participant's age, blood pressure, height, weight and pulse rate were taken into consideration and BMI was calculated. All the collected data was analysed by using appropriate statistical tools and the results were noted.

## Results

Out of 140 participants recruited in the study, 120 women were diagnosed as IHD with a mean age of 57 years. Most of the women presented after 6 hours of onset of symptoms and very minimal women presented with in the first 6 hours. None of the participants reported with symptoms within 3 hours. Majority of the participants were in the age group of 50-59 with a series of complications like chest pain, breathlessness, sweating and nausea. Out of 120 participants, 23 women were reported with a positive family history of cardiac diseases and hypertension and diabetes were the leading risk factors associated with IHD followed by obesity and dyslipidaemia. None of the participants reported positive with alcohol and tobacco consumption. The analysed results are tabulated in the below given table.

**Table 1:** Demographic and other parameters of IHD participants (women)

S. No	Parameter	No. of patients	Total/ Percentage
1.	Age 50-53 years	9	13%
	53-57 years	84	70%
	58-60 years	22	18%
	> 60 years	5	4%
2.	Chief presenting complaint	95	79%
	Chest pain and others	25	20%
3.	Positive family history (CAD)	22	18%
4.	Reporting Time		
	< 1 hour	Nil	-
	1-3 hours	Nil	-
	3-6 hours	20	16%
	> 6 hours	93	77%
5.	Type STEMI	99	82%
	NSTEMI	19	15.8%

A total of 99 participants constituting 82% were diagnosed as STEMI and the remaining cases were NSTEMI based on the ECG findings. The main complication in our study was cardiac failure seen in seven participants.

## Discussion

A vast number of studies reported an increased incident rate in woman with IHD among Indian population. The present study had maximum number of cases ranging from 53 to 57 year age group i.e., similar to several other published articles [6-8]. Dyslipidaemia and loss of protective effect of oestrogen in post-menopausal women are the major attributing factors for the increased incidence of IHD which are similar to the other studies. Another study performed in Framingham Heart Study proved that incidence of IHD increased with age in both men and women though gender neutrality diminished with increasing age. Our study results showed that majority of the participants reacted the hospital only after 6 hours and none of them reported in initial ours. This gives an idea that participants do not have enough awareness about the scenario and seriousness of symptoms. This paves a way for organism awareness campaigns with respect to IHD in rural areas of our country. This findings disagree with other study findings were the participants reported wit in 6 hours of onset of symptoms [9-11]. Another important findings from our study was almost 90% of the participants were reported with chest pain and radiation followed by breathlessness that is in coordination with the study results of Sing *et al.* [12].

The most common complication seen in the present study was cardiac failure in few patients and 82% are diagnosed as STEMI on electrocardiography and these results are similar to other study results [13, 14]. This study gives knowledge that socioeconomic status also aids in increased prevalence of diabetes, dyslipidaemia, hypertension and obesity which are the modified risk factors of CVD. The study results also showed strong correlation between high rate of BMI and diabetes, dyslipidaemia and hypertension. The aetiology of CAD is multifactorial with various risk factors influenced by lifestyle. Low physical activity and varying dietary habits might partly influence the risk of CAD in India. While India is experiencing an epidemiological transition with high rates of urbanisation [15-18].

The rate of CAD can be controlled by prevention of risk factors which need the community level change trough broadcasting awareness programs in television. Limitation of the study was less samples and hence recommends a cohort study to specially emphasize on women living in rural community.

## Conclusion

The study findings demonstrate a high incidence of IHD in women in Indian population and reflect the rising trend in rural as well as urban community. This may further increase due to accompanying life style changes. Therefore there is a need to inculcate knowledge among public to reduce the risk. Findings conclude that hypertension and diabetes

followed by dyslipidaemia are the major attributing factors for IHD.

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