



PROFILE OF RHEUMATIC MITRAL VALVE DISEASE IN A TERTIARY CARE HOSPITAL IN SOUTH INDIAN POPULATION

Cardiology

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ABSTRACT

BACKGROUND: Chronic rheumatic heart disease is the commonest cause of mitral valve disease in India. Atrial fibrillation particularly in mitral valve stenosis is a major factor for mortality and morbidity.

METHODS: This hospital based observational study was performed in the cardiology department of Madras Medical College. All the RHD patients with mitral valve involvement were undergone Electrocardiogram and echocardiography.

RESULTS: In this study consecutive 150 patients with mean age of 39.9 were enrolled. Female 77% and male were 23%. Isolated mitral valve stenosis was found in 49(32.7%) and combined MS with MR was 101(67.3%). Atrial fibrillation was found in 41(27%), of which 53% were aged > 50 years.

CONCLUSION: Rheumatic mitral valve disease is more common in females as compared to males. Out of 150 patients 41 patients had atrial fibrillation. Combined MS with MR is more common than isolated MS. Echocardiography and ECG are the important modality for evaluation and management of patients with valvular heart disease.

KEYWORDS

Echocardiography; Atrial fibrillation; Mitral stenosis;

INTRODUCTION:

Valvular heart disease constitute a major cause of cardiovascular morbidity and mortality in India. Among these, rheumatic mitral valvular disease is commonly encountered in the hospital settings. Approximately 25% of patients have isolated MS, combined MS and MR was found in 40%. Atrial fibrillation usually develops in the presence of left atrial abnormality noted in the prior ECG. Atrial fibrillation is related to the chamber enlargement, duration of the disease and older age. Atrial fibrillation predisposes to LA thrombus formation and systemic embolization. In patients with AF and Mitral valve disease, 5- year survival is only 64% compared to non valvular cause of AF, which is 85%.

The echocardiography and color doppler assessment is the key tool in the management of RHD. Echocardiography assesses the hemodynamics, etiology, severity, therapeutics and prognostic information non-invasively.

MATERIALS AND METHODS:

This is a prospective and observational study done in a tertiary care hospital over a period of 3 months from October 2019 to December 2019. Patients with Rheumatic mitral valve disease who were 12 years of age or above and consented for the study were enrolled in this study. Detailed echocardiographic evaluation along with Electrocardiogram was taken and analysed.

Aim of the study was to assess the echocardiographic and ECG profile of rheumatic mitral valve disease and the prevalence of atrial fibrillation in the study population. Basic epidemiologic data including age, sex and clinical history were noted. Echocardiographic parameters of severity of MS and MR were noted. Mitral valve orifice area calculated through planimetry and mean pressure gradient by continuous wave Doppler. MR severity was analysed according to PISA method. $ERO < 0.2 \text{ cm}^2$ is mild MR, ERO between $0.2 - 0.4 \text{ cm}^2$ is moderate MR and $ERO > 0.4 \text{ cm}^2$ is severe MR. Descriptive statistics were expressed in mean and standard deviation. Statistical analysis was done using SPSS v23 software.

RESULTS:

Total of 150 patients with rheumatic mitral valve disease is enrolled in this study, of which there were 35 males and 115 females. Mean age of the patients was 39.9 years (± 12.6). Mean pressure gradient was 8.5 mm Hg (± 4.9). Mitral valve area by planimetry was 1.36 cm^2 (± 0.47)

Table 1: Baseline Characteristics of patients:

Characteristics (n= 150)	MEAN	SD
Age (years)	39.9	12.6
Mean pressure gradient (mm Hg)	8.5	4.9
Mitral valve area(cm^2)	1.36	0.47

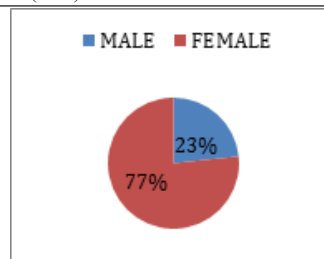


Figure 1. Sex distribution in study population

In this study 32 % (n = 49) had isolated MS. Combined MS with MR was present in 68 % out of which 6.7 % (n = 10) had severe MR, 14 % (n = 21) had moderate MR and 46.6 % (n = 70) had mild MR.

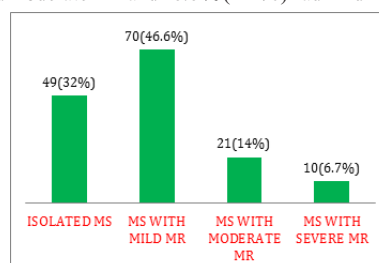


Figure 2. Mitral valve lesion characteristics in study

Table 2. Atrial fibrillation in various age groups.

S.NO	AGE (Years)	PREVALENCE OF AF
1	> 40	78 %
2	> 50	53%
3	> 60	22%

In this study population 27.3%(n=41) had atrial fibrillation. 78% of AF were seen in age group >40 years, 53% of AF were seen in age group >50 years and 22% of AF were seen in age group >60 years.

DISCUSSION:

Echocardiography is the important investigation in the diagnosis, prognosis, management and follow up of patients with rheumatic heart disease. For diagnosing subclinical rheumatic heart disease echocardiography stands superior to clinical examination. In the present study there were 150 patients, 115 were females and 35 were males, the ratio being 3.3:1. Study done by Aurakzai HA et al, the male: Female ratio was 1.17:1 was observed. In our study out of the 150 patients with rheumatic heart disease 77 (51%) were in the age group of 10-40 years. In a study done by Ramakrishna CD et al, in India 33.5 % of patients are younger than 40 years. In a study done by Meenakshisundaram R et al, the mean age of males is 23 years and that of Females is 34 years. In a study done by Aurakzai HA et al, the mean age of males was 42.3 years and for Females was 44.3 years.

In our study, the prevalence of AF in patients coming to hospital with rheumatic heart disease is 27%(n = 41). The prevalence of AF increased with the age of the patients in our study, similar to the observations made by previous studies. The vulnerability to develop AF in mitral stenosis is reported to be higher in enlarged left atrial chamber detected in echocardiography and left atrial abnormality noted in ECG. The advanced age is a major risk factor for the development of AF in our patients with mitral valve disease.

CONCLUSION:

Burden of Rheumatic heart disease in India is high, focusing on primordial prevention will reduce the incidence of rheumatic fever and heart disease. Early diagnosis and management are the key aspects for reducing the burden of RHD. Proper implementation of primary and secondary prevention interventions through nationwide programmes, may effectively reduce the incidence of ARF and RHD. Timely detection of AF and adequate management will reduce the morbidity and mortality.

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