



STUDY OF DEMOGRAPHIC PROFILE OF RHEUMATIC MITRAL STENOSIS PATIENTS

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ABSTRACT

BACKGROUND: Rheumatic fever (RF) and Rheumatic heart disease (RHD) continue to be a major health hazard worldwide. In present study, the demographic profile along with symptomology of Rheumatic Mitral stenosis patients was assessed

MATERIAL AND METHODS: In this cross-sectional study, a total of 70 consecutive patients above age of 12 years of, either previously diagnosed or clinically suspected but undiagnosed Rheumatic mitral valve stenosis, coming to medicine department of a tertiary care hospital were included. All patients were interviewed using a standard questionnaire and detailed history was taken. Patients were subjected to thorough clinical examination, 12 lead electrocardiography, X-ray chest and 2D transthoracic echo cardiography and spectral and colour flow Doppler and diagnosis of Rheumatic Mitral Stenosis (MS) was confirmed.

RESULTS: Out of total 70 subjects, 57.1% subjects (N=40) were females while 42.9% (N=30) were males. Majority of the patients were below 40 years (60%) while only 5.7% were above 60 years of age. Mitral stenosis was more symptomatic at 3rd decade of age. Most common symptom observed in study subjects was dyspnoea (84.3%), followed by chest pain (62.9%), palpitation (47.1%), pedal oedema (31.4%) and cough (27.1%). 61.43% subjects were previously diagnosed cases of rheumatic MS and 38.57 % subjects were newly detected cases of rheumatic MS

CONCLUSION: Mitral stenosis is more common in females in age group of patients above 12 years and commonly affected age group is below 40 years. Dyspnoea and chest pain are commonest symptoms in rheumatic mitral stenosis and most patients are symptomatic at 3rd decade of age.

KEYWORDS : Rheumatic mitral stenosis, Echocardiography

INTRODUCTION:

Rheumatic fever (RF) and Rheumatic Heart Disease (RHD) continue to be a major health hazard in most of the developing countries as well as sporadically in developed economies. RHD accounts for 30-40% of cardiac cases hospitalized in India. It is a most common cause of cardiac morbidity and mortality in India. Mitral stenosis occurs in approximately 40% of people with rheumatic heart disease. Each year, there are approximately 470,000 new cases diagnosed and 233,000 deaths attributed to RHD.¹

In present study, the demographic profile along with symptomology of rheumatic mitral stenosis patients was assessed.

MATERIAL AND METHODS:

The present cross sectional study was carried out in a tertiary care hospital serving to rural population predominantly. Approval for the study was obtained from local ethics committee. A total of 70 consecutive cases of rheumatic mitral valve stenosis coming to medicine department were included in the study after taking prior informed consent.

Patients of both genders above the age of 12 years, clinically suspected cases of rheumatic mitral stenosis, diagnosed cases rheumatic of mitral stenosis and patients who were accidentally diagnosed as rheumatic mitral stenosis while doing echocardiographic evaluation for other disease were included in the present study.

Patients who were less than the age of 12 years and patients who have undergone mitral valve replacement were excluded in the present study.

All patients were interviewed using a standard questionnaire. Patients were identified by their name and address and their IP/OP Numbers were recorded. Age and sex at the time of study were recorded to study the incidence and sex distribution of mitral stenosis. Detailed history examination of each patient was taken and the following points were stressed -History of dyspnea on exertion, along with duration, grading and mode of onset, presence of paroxysmal nocturnal dyspnea and orthopnea; history of palpitation; history of pedal edema, distension of abdomen, right upper quadrant discomfort, fatigue, generalized weakness and syncope; history of chest pain; history of cough; history of hoarseness of voice and dysphagia was taken.

Past history was taken with special reference to acute rheumatic fever, age at onset and the number of episodes. History of acute rheumatic fever was taken according to modified Jones criteria applicable in the Indian context - Migratory polyarthritis, carditis, sydenham's chorea and subcutaneous nodules were taken as major criteria whereas polyarthralgia, fever, raised ESR or C-reactive protein (CRP) or prolonged PR interval on ECG were taken as minor criteria. Past history of repeated episodes of fever and cough with mucopurulent expectorations for the presence of chronic bronchitis and past history of other medical illness and medications was recorded. Personal history of smoking, alcoholism and dietary habits were noted. Family history of similar disease were noted.

Patients were subjected to thorough clinical examination. Loud S1 (first heart sound), opening snap and a low pitched apical rumbling mid-diastolic murmur with presystolic accentuation in the presence of sinus rhythm were noted in majority patients.^{2,3} Patients were then subjected to 12 lead electrocardiography, X-ray chest and 2D

transthoracic echo cardiography^{4,5} and spectral and colour flow Doppler and diagnosis of Rheumatic Mitral Stenosis (RMS) was confirmed. All the collected data was entered in Microsoft Excel sheet. It was then transferred to SPSS version 17 software for statistical analysis.

Table 1. Distribution of Rheumatic Mitral Stenosis patients based On gender

Gender	Number of Rheumatic Mitral Stenosis patients	% of Rheumatic Mitral Stenosis patients
Male	30	42.9%
Female	40	57.1%
Total	70	100.0%

Out of total 70 Rheumatic Mitral Stenosis Patients, 57.1% (n=40) subjects were females while 42.9% (n=30) were males. Out of 40 females subjects 4 were pregnant.

Graph 1: Pie diagram showing distribution of Rheumatic Mitral Stenosis patients according to gender

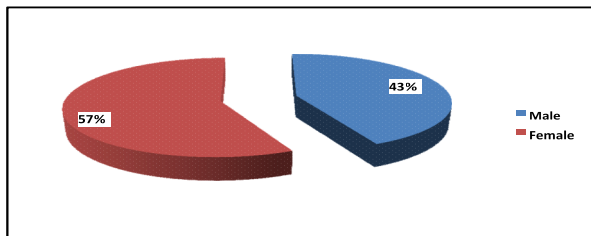


Table 2. Distribution of Rheumatic Mitral Stenosis Subjects (N) based on age

Age (years)	Number of Rheumatic Mitral Stenosis patients	% of Rheumatic Mitral Stenosis patients
< 30	22	31.4%
31-40	20	28.6%
41-50	15	21.4%
51-60	9	12.9%
> 60	4	5.7%
Total	70	100.0%

Majority of the subjects were below 40 years (60%) while only 5.7% were above 60 years of age.

Graph 2: Bar Diagram showing distribution Rheumatic Mitral Stenosis patients based on Age

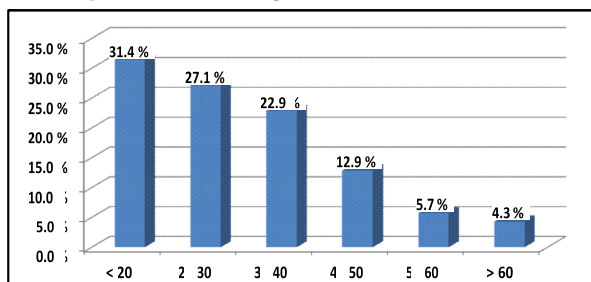


Table 3. Distribution of Rheumatic Mitral Stenosis patients based On Symptoms

Symptoms	Number of Rheumatic Mitral Stenosis patients	% of Rheumatic Mitral Stenosis patients
Dyspnoea	59	84.3%
Chest Pain	44	62.9%
Palpitation	33	47.1%
Cough	19	27.1%
Pedal Oedema	22	31.4%

Most common symptom observed in study subjects was dyspnoea (84.3%), followed by chest pain (62.9%), palpitation (47.1%), pedal oedema (31.4%) and cough (27.1%).

Graph 3: Bar Diagram showing distribution of Rheumatic Mitral Stenosis patients based on symptoms

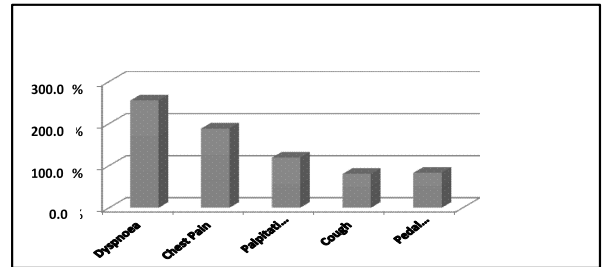
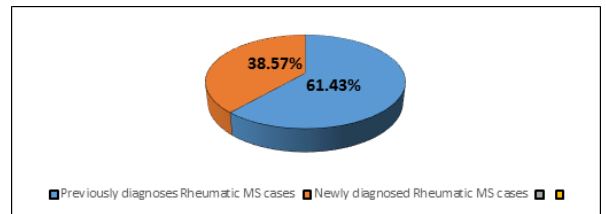


Table 4. Distribution of Rheumatic Mitral Stenosis patients based on previously diagnosed cases & Newly detected cases

Status of Rheumatic Mitral Stenosis patients	Number of Rheumatic Mitral Stenosis patients	% of Rheumatic Mitral Stenosis patients
Previously Diagnosed	43	61.43
New detected	27	38.57
Total	70	100.0%

61.43% subjects were previously diagnosed cases of Rheumatic Mitral Stenosis patients and 38.57 % subjects were newly detected cases Rheumatic Mitral Stenosis patients and they were mostly below 40 years of age.

Graph 4: Pie Chart showing percentage distribution Rheumatic Mitral Stenosis patient based on previously diagnosed cases & Newly detected cases



DISCUSSION:

A total of 70 consecutive cases of Rheumatic mitral valve stenosis coming to Medicine Department were included in the study after taking prior informed consent. In the present study 70 cases of mitral stenosis were studied and an attempt was made to study the demographic profile and symptomatology of rheumatic mitral stenosis patients.

Total 70 patients were studied out of which 30 were males and 40 were females, with the ratio of male is to female was 1:1.3. It is more common in females in our country.³

Saeed M et al⁶ study showed a higher prevalence of mitral stenosis (MS) was found in women than men (76.66% vs 24.44%) evaluated in 90 patients.

Mohammad-Reza Movahed et al⁷ (july2006) in their study analysed that MS was significantly more prevalent in women (1.6%) as compared to males (0.4%) Findings of the present study are in agreement with study of Saeed M et al & Mohammad- Reza Movahed et al.

In the present study, the minimum age of presentation of RMS patients was 18 years and upper limit at which patient presented was 65 years. Majority of the subjects were below 40 years (60%) while only 5.7% were above 60 years of age. These finding of present study are similar to Zhang W et al⁸ study (2013) in which they

studied one hundred and thirty consecutive patients of rheumatic heart disease in which seventy-one per cent of the patients were female with a median age of 33 years. The peak age of the study group was 20 to 39 years.

In temperate climates the latent period between the initial attack of rheumatic carditis the development of symptoms due to MS is generally about 2 decades, most of the patients begin to experience disability in the 4th decade. Once a patient with MS becomes seriously symptomatic, the disease progresses continuously to death within 2 to 5 years. In economically deprived areas such as tropical and subtropical climates, specially in India central America, and in the middle east, MS tends to progress more rapidly and frequently causes serious symptoms in patients < 20 years of age. In India, most cases present in 2nd and 3rd decades.³

Most common symptom observed in study subjects was dyspnoea (84.3%), followed by chest pain (62.9%), palpitation (47.1%), pedal oedema (31.4%) and cough (27.1%). Chest pain were vague and nonspecific.

These finding of present study are in agreement with studies of M silvana et al and Zhang W et al. According to M silvana et al 9 the most prominent symptom of severe MS is dyspnea. Palpitation is observed mostly with cases of severe MS.

Zhang W et al⁸ study : One hundred and thirty consecutive patients of rheumatic heart disease with mitral stenosis were include in which the commonest presenting symptoms were dyspnoea ,palpitations, fatigue and chest pain. Palpitations were the commonest symptom (95.4%), followed by fatigue (89.2%) and dyspnoea (75%). Other symptoms included chest pain (74.6%), syncope (15.4%) and oedema (14.6%).

The most prominent symptom of severe MS is dyspnea. Patients with severe MS may also experience orthopnea as well as significant exercise limitation, largely due to reduced lung compliance causing decreased vital capacity and increased respiratory effort because of pulmonary venocapillary congestion and interstitial edema, occurring as a result of pulmonary venous hypertension.

Palpitations are common and sometimes early symptom of MS. It is due to premature atrial contractions, Paroxysmal tachycardia, Atrial flutter or Atrial fibrillation. Chest pain, possibly related to RV hypertension, occurs in approximately 15% of patients with MS. it is vague and non specific. It may be due to Right ventricular hypertrophy secondary to pulmonary hypertension, Myocardial ischemia secondary to accompanying coronary osteosclerosis, dilated pulmonary artery, Coronary embolization, Pulmonary infarction resulting in pleuritic chest pain. The elevation of pulmonary vascular resistance further increases the R.V. systolic pressure leading to RV failure, characterized by fatigue, right upper quadrant pain due to hepatic congestion, peripheral edema, ascites, raised jugular venous pressure, facial puffiness.

From the findings of the present study we conclude that in age group above 12 years, rheumatic mitral stenosis is more common in females and commonly affects age group was below 40 years. Dyspnoea and chest pain are commonest symptoms in Rheumatic mitral stenosis and most patients are symptomatic at 3rd decade of age.

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