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CLINICAL PROFILE OF RHEUMATIC HEART DISEASE AMONG OLD AGED PATIENTS: A STUDY FROM WESTERN RAJASTHAN.

Geriatrics

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ABSTRACT

Introduction: Rheumatic heart disease (RHD) is a life-threatening heart condition which results from damage to heart valves caused by one or several episodes of rheumatic fever, an autoimmune inflammatory reaction to infection with streptococcal bacteria (streptococcal pharyngitis or strep throat). It is usually associated with young age. There are little evidences of new cases of RHD in elderly patients. **Material & Methods:** A total of 50 patients newly diagnosed with RHD above the age of 60 years were included as study group and RHD patients under the age of 50 years were included as control group. Comprehensive clinical evaluation, relevant laboratory investigation and 2 D echocardiography with doppler performed for every subject. **Result:** Breathlessness (65/100) was found to be common feature in both groups while chest pain was seen much higher in study group (8/50) than control group (2/50). The severe cases of aortic stenosis were seen only in study group (2/50). Atrial fibrillation were present more in study group (29/50) than control group (15/50). Hypertension (n=4) was the most common co-morbidity present in control group**. Conclusion:** Atrial fibrillation and co-morbid illness are commonly associated with elderly patients which modify the course and management of illness.

KEYWORDS

Rheumatoid factor; Heart failure; Geriatrics; Atrial fibrillation; Hypertension

INTRODUCTION:

Rheumatic heart disease (RHD) is a serious, systemic immune condition which occurs as a complication of Acute Rheumatic fever (ARF), an autoimmune sequel of a mucosal infection by *Streptococcus pyogenes* (Group A streptococcus).[1] RDT is the commonest cause of heart diseases in children and young adults leading to higher rate of morbidity and mortality especially in developing countries.[2-3] RHD prevalence is highest in the third and fourth decade of life as it represents the cumulative heart damage of previous ARF episodes.[4]

Evidences of old rheumatic involvement of the heart are common finding at autopsy of elderly population still rheumatic activity is not often considered in dealing patients above 60 years of age.[5] Evidences also indicates the little realized importance of initial attacks of Rheumatic fever and of clinical rheumatic activity in old age.[6-7]

At old age the heart most commonly start to fail leading to arteriosclerotic heart diseases and hypertensive heart diseases.[8] The current study was designed to evaluate the evidence that rheumatic heart disease is also significant and hitherto under recognized etiological factor in heart disease and in congestive heart failure of elderly population.

MATERIALS & METHOD:

The study was conducted in the department of Medicine & department of Cardiology at MDM Hospital, Dr. S.N. Medical College, Jodhpur for a period of 19 months (January 2012 to August 2013). A total of 50 patients above 60 years of age, diagnosed with RHD were included as test group in the study after taking their consent. Similarly 50 patients diagnosed as RHD before the age of 60 years were included as control group.

Comprehensive clinical evaluation, relevant laboratory investigation and 2 D echocardiography with doppler performed for every subject. Laboratory investigations included Hemogram, CRP, ASO titre, Blood sugar, Serum creatinine, blood urea, liver function test, lipid profile, ECG and Chest X-ray PA view.

D echocardiography with Doppler: ECG was measured by GE Vivid 9 Dimensions ECG Machine, GE Healthcare, Chicago. Mitral valve area (MVA) was calculated by mitral valve planimetry in short axis view taken at a tip of the leaflet line as well as by pressure half time (PHT) method, where PHT was calculated by pulse Doppler at mitral valve (sample size 2mm) in apical 4 chamber view. The final mitral valve area was calculated using mean of the above 2 methods.

MVA (cm^2)= 220/PHT (in milliseconds)

Statistical Evaluation:

The data was entered into MS Excel sheet and SPSS version 25 was used to analyze the data. A p value <0.5 was considered statistically significant.

RESULT:

The male to female gender ratio among the control group 0.92:1 (males=24; females=26) while among the study group it was 0.56:1 (male:18; females:32).

Breathlessness was the most common feature observed in both groups. Significant difference was seen in chest pain which was much higher in study group when compared to control group.

Table No. 1 Symptoms distribution of study group and control group.

Symptoms	Study Group	Control Group	P value
Breathlessness	30	35	0.295
Orthopenea	16	12	0.373
Palpitation	14	15	0.826
Cough	10	5	0.161
Hemoptysis	8	7	0.779
Chest Pain	8	2	0.046
Pain Abdomen	10	15	0.248
Fever	3	3	1
Stroke	5	3	0.461
Fatigue	8	7	0.779
Others	17	16	0.832

Table No. 2 Distribution of subjects according to severity of various conditions.

	Study Group			Control Group		
	Mild	Moderate	Severe	Mild	Moderate	Severe
Mitral stenosis	8	16	17	8	14	19
Mitral Regurgitation	15	5	20	15	10	17
Aortic stenosis	3	1	4	4	2	0
Aortic Regurgitation	16	8	2	10	6	3

Mixed Mitral valve disease was the most common clinical feature

present in both the groups. The frequency of atrial fibrillation was observed more commonly among study group in comparison to control group followed by mitral & Aortic valve disease. (Table No. 3)

Table No. 3 Various heart diseases among the subjects of study and control group.

	Study Group		Control Group	
	Present	Absent	Present	Absent
Mixed Mitral valve disease	31	19	30	20
Mixed Aortic valve disease	6	44	6	44
Mitral & Aortic valve disease	28	22	19	31
Organic tricuspid valve disease	5	45	3	47
Atrial Fibrillation	29	21	15	35
LA thrombus	4	46	2	48

Co-morbidity was seen among study groups. Hypertension was the most common co-morbidity followed by COPD and MI/IHD. (Figure No. 1)

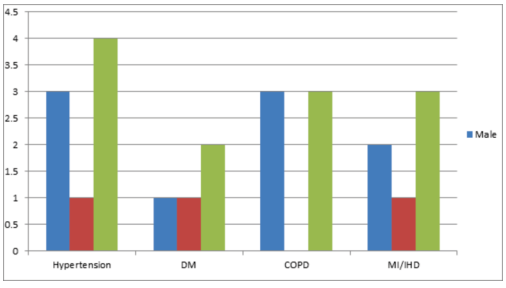

Figure 1. Distribution of co-morbid illness among the study group.

Table No. 4. Distribution of Congestive Heart Failure and Pulmonary arterial hypertension among Study and Control group

	Study Group		Control Group	
	Present	Absent	Present	Absent
CHF	18	32	15	35
Secondary PAH	26	24	24	26

DISCUSSION:

RF & RHD are rare in developed countries but are major public health problem among children and young adults in developing countries. The current study describes the presentation of RHD patients who presented and were diagnosed for the first time after the age of 60 years and compare it with young RHD patients.

A total of 100 subjects were included in the current study including 50 belonging to study group and 50 belonging to control group. Among the 50 subjects in the study group 18 (36%) were male and 32 (64%) were females with a gender ratio of 1:1.8 (M:F). This ratio depicts the higher prevalence of RHD among females after the age of 60 years. Similar higher female ratio to male is also reported from urban African regions.[9]

Most common presenting symptoms in the study group were breathlessness (60%) followed by orthopnoea (32%) and palpitation (28%). Almost similar symptomatolgy was observed in control group. The results of presenting symptoms were very close to previous study from urban Africa.[8] Breathlessness (53%) is also been reported by Hargreaves T who studied the rheumatic mitral valve disease in elderly.[10]

Stroke was a presentation in 10% subjects of study group and 6% subjects of control group and all these subjects had concurrent atrial fibrillation. Chest pain was present in 16% in study group and 4% of control group. Among the study group 6% with chest pain also have acute myocardial infarction/IHD. Age related atherosclerotic lesions are responsible for IHD/MI and furthermore it may be embolic manifestation of RHD in elderly.

Mitral stenosis was found to be the most common valvular lesion in the study group 42(82%). This result is in concordance with various studies.[11-13] Among the control group of current study mitral stenosis was seen in 38 (76%). Mitral regurgitation was the most common valvular lesion in control group 42(84%). This is well supported by previous studies.[14-15] Among the control group of current study mitral regurgitation was observed in 40(80%) subjects. High prevalence of mitral valve involvement among the elderly has also been reported.

Aortic stenosis was present in 8(16%) of study group with 2 severe cases and 6(12%) of control group with no severe case. Higher rate of aortic stenosis among old age compared to young aged has also been reported previously.[15] Aortic regurgitation was present in 26(52%) of study group subjects with 2 severe cases and 19(38%) of control group with 3 severe cases. The involvement of aortic valve was seen higher among the study group could be due to older age and degeneration. Mixed mitral valve disease was recorded in 31(62%) in study group and 30(60%) in control group. Mixed aortic valve disease was present 6(12%) in both groups. Combined mitral and aortic valve disease was found in 28(56%) of study group and 19(38%) of control group. Organic tricuspid valve disease was present in 5 (10%) subjects of study group and 3(6%) of control group. Triple valve disease was found to be in 4 (8%) subjects of study group and 2 (4%) of control group. The current study shows that type and severity of rheumatic valvular involvement in old age patients is similar to young age group.

Atrial fibrillation was seen in 29 (58%) of study group and 15 (30%) of control group. This high prevalence of atrial fibrillation elderly people may be due to advancing age, more severe dilated left atrium and associated combined IHD and other diseases. Atrial fibrillation is the commonest sustained arrhythmia around the globe and is associated with complications such as heart failure, stroke and other embolic phenomenon.[14] In the current study, atrial fibrillation had the strongest association with heart failure and stroke. Such patients are at increased risk of cardio-embolic phenomena, secondary to stasis of blood and clot formation.[16-17]

LA thrombus was present in 4 (8%) of study group and 2 (4%) of control group. The low prevalence of LA thrombus in current study could be due to only trans-thoracic echocardiography was used for diagnosis. Tran-esophageal echocardiography could have increased the number of patients diagnosed with LA thrombus.

Co-morbid illness were absent in control group while they were found in 12 (24%) of study group including hypertension 4 (33.33%), MI/IHD 3 (25%), COPD 3(25%) and DM 2(16.67%). This highlights the need to look for co-morbidity in elderly patients as this may impact the management.

CHF was present in 18 (36%) subjects of study group and 15 (30%) of control group. Majority of subjects in the study group also had biventricular failure while majority in control group had acute pulmonary edema. In a previous study from India heart failure was reported in 36% of subjected newly diagnosed with RHD.[18]

Secondary PAH was present in 26 (52%) of study group and 24 (48%) of control group. In a previous study one third of newly detected RHD patients, pulmonary hypertension was found as initial presentation.[19] Pulmonary hypertension commonly develops as a complication of mitral valve disease. The quality and expectancy of life decreases with the development of hypertension.[20]

Limitation:

The present study is a cross sectional study with small sample size. There is a need of study of RHD among elderly patients in a large sample longitudinally.

CONCLUSION:

Common clinical presenting features of RHD for first time among elderly is similar to young adults; however chest pain with IHD is relatively more frequent. Atrial fibrillation and co-morbid illness are commonly associated with elderly patients which modify the course and management of illness.

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