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To Find Out Various Clinical Characteristics of Patients with Rheumatic Mitral Stenosis Registered in Cardiology OPD from 1992 To 2013

Dr. Nitin Rawat[1], Dr. Vinayak vishwanath Jatale[2*], Dr. Nitin Rawat Clinic, Barwani[1]
[1]General Physician, Dept. of Medicine, Index Medical College, Indore, India
[2]Asst. Prof, Dept. of Medicine, Index Medical College, Indore, India

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***Corresponding author**
Dr. Vinayak Vishwanath Jatale

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Abstract: Mitral Stenosis is a sequel to Rheumatic fever which follows GAS Pharyngitis. Recurrent hospitalization for heart failure, development of atrial fibrillation, systemic embolization and cerebral embolization are associated with high morbidity and mortality seen during natural history of Mitral Stenosis. The Rheumatic Mitral Stenosis affect young people particularly females. Unoperatic patients with significant Mitral Stenosis carry high risk of Cardio embolism and recurrent hospitalization with associated high morbidity and mortality.
Keywords: Clinical, Rheumatic, Mitral Stenosis & Cardiology.

INTRODUCTION

The initial mitral valvulitis, as part of endocarditis occurring during rheumatic fever, results in cicatrization and fibrosis during healing process results in commissural fusion and disease of sub-valvular apparatus causing obstruction to left ventricular inflow.

Mitral valve disease, especially MS is associated with high risk of Cardioemb events. Numerous clinical and echo cardiographic factor are associate with a high ris thromboembolism in these patients. These include atrial fibrillation, left atrial size, left a appendage dysfunction, duaration of mitral valve disease, and presence of spontaneous contrast (SEC) in the left atrium [1-4]. Nearly one fifth of all embolic event in patient mitral stenosis occur in patient in sinus rhythm. However, despite this higher risk, the limited data on predictors of clinical stroke in these patients.

Moreover there is no unanimity amongst various guidelines in the use of anti-coagulants in patients with MS. Currently there is paucity of data on whether to initiate anti-coagulation in patients with mitral stenosis who are in NSR or not as the risk marker for thromboembolism are poorly defined.

MATERIALS & METHODS

This Study was carried out in the Department of Medicine, Mahatma Gandhi Memorial Medical College and Maharaja Yashwant Rao Hospital Indore, from January 2013 to October 2014. We analyzed case files of all the patients who were diagnosed to have Rheumatic Mitral Stenosis as dominant lesion and were registered in cardiology OPD of Maharaja Yashwant Rao Hospital Indore during period of 1992 to 2013, case files with complete information were accepted for analysis. Case files with incomplete information were not analyzed. If required, we tried to obtain information on hospitalizations, Cardioembolic events and mortality by contacting patient's families. The consent for permission to use patient's related data, so obtained, was taken from surviving patients or their relatives.

Inclusion criteria

Case files of patients with diagnosis of mitral stenosis as dominant lesion registered in cardiology OPD from January 1992 to December 2013 were analyzed.

Exclusion criteria

- Case files with incomplete data in form of inadequate clinical and laboratory Information including patient contact details and physical examination were excluded.
- Patients with more than mild mitral regurgitation or more than mild aortic valve stenosis / regurgitation were not included.
- After analyzing case records of these patients, the following information was recorded: age, gender, Cardiac examination findings,laboratory findings, Echocardiographic findings, hospitalization record, OPD follow up record, Therapy received,

Cardioembolic events (cerebral or peripheral), change in NYHA class, change in rhythm, various hospitalization episodes with reasons and mortality.

- Statistical Methods: The data were analyzed using statistical software SPSS IBM Versions 20, The data was subjected to Kaplan Meire analysis and various survival curves were drawn. The complications including mortality were compared among various subgroups.

Criteria for Diagnosis

Definition

Mitral Stenosis - Mitral stenosis is a narrowing of heart's mitral valve orifice which is 4-6 cm2. When the orifices is reduced to approximately 2cm ^{2}, which is considered to represent mild MS. When the mitral valve opening is reduced to 1.5 to 1 cm^2, which is considered to moderate MS.

When the mitral valve opening is reduced to 1 cm^2, which is considered to severe MS. CLINICAL DIAGNOSIS of mitral stenosis was based upon the presence of rough, rolling rasping diastolic or presystolic murmur.

Strokes [5]

"Rapidly developing clinical sign of focal (or global) disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death, with no apparent cause than of vascular origin

- Ischemic stroke [6] are caused by sudden occlusion of arteries supplying the brain either due to a thrombus at the site of occlusion or formed in another part of the circulation.
- Transient ischemic attack: TIAs are episodes of stroke symptoms that last only briefly; the standard definition of duration is<24 hours, but most TIAS last <1 hour.
- Silent Stroke: The stroke events diagnosed with MRI and CT examination in patients with no overt symptoms or sign of neurological deficit.
- Cardioembolism is responsible for around 20% of all ischemic strokes. Stroke caused by heart disease is primarily due to embolism of thrombotic material forming on the atrial or ventricular wall or the left heart valves. These thrombi then detach and embolism into the arterial circulation. The thrombus may fragment or lyse quickly, producing only a TIA. Alternatively, the arterial occlusion may last longer, producing stroke. Embolic strokes tend to be sudden in onset, with maximum neurologic deficit at once. With reperfusion following more prolonged ischemia, petechial hemorrhage can occur within the ischemic territory. This is usually of no clinical significance and should be distinguished from frank intracranial hemorrhage into a region of ischemic stroke where the mass effect from the hemorrhage can cause a decline in neurologic function.
- Emboli from the heart most often lodge in the MCA, the posterior cerebral artery (PCA), or one of their branches; infrequently, the anterior cerebral artery (ACA) territory is involved. Emboli large enough to occlude the stem of the MCA (3–4 mm) lead to large infarcts that involve both deep gray and white matter and some portions of the cortical surface and its underlying white matter. A smaller embolus may occlude a small cortical or penetrating arterial branch. The location and size of an infarct within a vascular territory depend on the extent of the collateral circulation.

OBSERVATIONS & RESULTS

Severity of Mitral Stenosis

Among these patients, 26 (17.2%) had mild MS, 47 (31.1%) had moderate MS while 78 (51.7%) had severe MS.

Table-1: Severity of Mitral Stenosis

Severity of Mitral Stenosis	Female	Male	Total
Mild (MVA 1.5-2.0 cm^2)	18	8	26
	15.9%	21.1%	17.2%
Moderate (MVA 1.0-1.5 cm^2)	38	9	47
	33.6%	23.7%	31.1%
Severe (MVA <1.0 cm^2)	57	21	78
	50.4%	55.3%	51.7%
Total	113	38	151
	100.0%	100.0%	100.0%

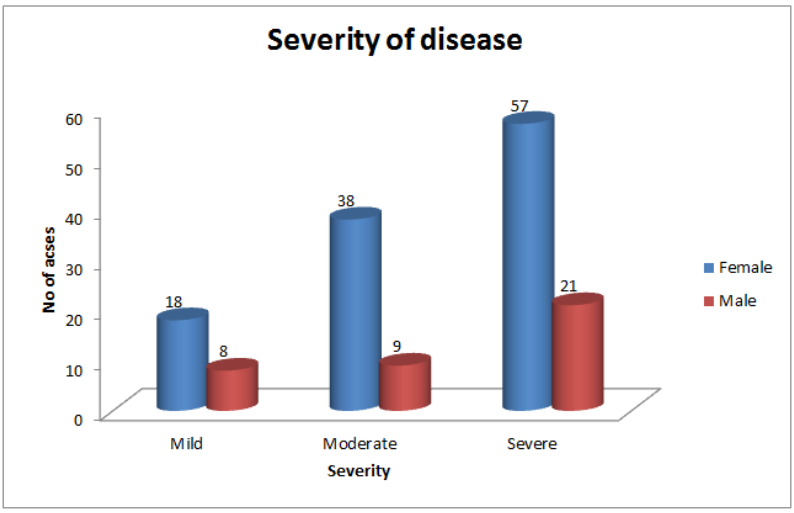

Fig-1: Severity of mitral stenosis and event free survival

Patients of severe mitral stenosis remained event free for mean period of 4.15 years (SD ± 1.47), while patients of moderate MS remained event free for mean period of 4.43 years (SD ± 1.7). Patients with mild MS were event free for mean period of 5.6 years (SD ± 1.58).

DISCUSSION

Mitral stenosis is a sequel to Rheumatic fever which follows GAS Pharyngitis. The initial mitral valvulitis, as part of endocarditis occurring during rheumatic fever, results in cicatrization and fibrosis during healing process results in commissural fusion and disease of sub-valvular apparatus causing obstruction to left ventricular inflow [7].

The recurrent GAS pharyngitis leads to play important role in its causation. Mitral Stenosis is a progressive disease, if rheumatic fever recurrences are not prevented. Its natural history consists of progressive obstruction to left atrial emptying resulting in progressive pulmonary hypertension and its resultant complications.

Recurrent hospitalization for heart failure, development of atrial fibrillation, systemic embolization and cerebral embolization are associated with high morbidity and mortality seen during natural history of Mitral Stenosis.

The study was done to assess the natural history of mitral stenosis in non-operated cases. Severe Mitral stenosis is associated with high mortality and morbidity, if not operated/ intervened in suitable cases. We retrospectively analyzed case records data of patients with Mitral Stenosis registered in cardiology OPD form 1992 to 2013.

Although there were 771 such cases, we could only analyze 151 of the records as other records were not complete .We however, supplemented information on complication and details by contacting patients or their families. Our study has a selection bias introduced by completeness of record.

CONCLUSION

The Rheumatic Mitral Stenosis affect young people particularly females. Unoperatic patients with significant Mitral Stenosis carry high risk of Cardio embolism and recurrent hospitalization with associated high morbidity and mortality.

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