

## Frequency of mitral valve prolapse in patients with mitral regurgitation

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**Objective:** To determine the frequency of mitral valve prolapses in patients with mitral regurgitation in our population.

**Methodology:** This cross sectional study was conducted at the Cardiology Department of Hayatabad Medical Complex, Peshawar, Pakistan. A total of 121 cases of Mitral regurgitation were included through consecutive sampling technique.

**Results:** Out of 121 patients with mitral regurgitation, 20 had mitral regurgitation that was due to MVP. There were 55% females with mitral regurgitation. Mean age was  $25.6 \pm 6.95$  years (range 21 to 40 years). The different percentage of

mitral regurgitation due to MVP among patients with mitral regurgitation was 16.52%, whereas 83.47% had rheumatic mitral regurgitation. 55% patients affected with mitral regurgitation due to MVP were between 21 to 30 years of age, predominantly affecting males in this age group (72.72%).

**Conclusion:** Mitral regurgitation due to MVP is less common in our population as compared to regurgitation due to RHD and predominantly affects females. (Rawal Med J 201;42:427-428)

**Key words:** Mitral regurgitation, mitral valve prolapse, valvular heart disease.

### INTRODUCTION

Mitral regurgitation (MR) is the most common valvular problem in developed countries. MR is classified as primary (degenerative with valve prolapse or rheumatic carditis) or secondary (mainly due to deformed valve structure resulting from Ischemia).<sup>1</sup> Most studies show that whenever there is multivalvular problem the etiology is usually rheumatic and such valvular lesions usually necessitate replacement of the damaged valve/valves. Isolated mitral regurgitation is rarely an expression of rheumatic valve disease.<sup>2</sup> In our local population, rheumatic heart disease is the very common cause of valve dysfunction,<sup>3</sup> mitral valve prolapse (MVP) is about 2-3% in US population<sup>4</sup> but it is 0.4-35% in our population.<sup>5</sup> Our study here focuses mainly on the mitral regurgitation as manifestation of MVP in local population presenting to tertiary care center with symptomatic valvular heart disease so that we should have proper diagnostic and theoretical approach for our local population. Severity of MVP was classified based on the MR associated as mild, moderate and severe MR

### METHODOLOGY

This cross-sectional study was conducted after obtaining approval from Institutional Ethics Committee, in the Cardiology unit of Hayatabad Medical Complex Peshawar, Pakistan. It was a cross sectional study where patients presenting with MR were admitted in the cardiology ward after evaluation and consecutively included in the study. The purpose and benefits of the study were explained to all patients and written informed consents were obtained. All adult patients of ages more than 15 years of both genders were included in this study. Patients with multivalvular disease, congenital heart disease, ischemic heart disease and atrio-ventricular (AV) canal defect detected by echocardiography were excluded from this study.

History, clinical examination and echocardiography were carried out to detect MR among patients with valvular heart disease. All the echocardiographic evaluations were done by expert cardiologist and valve evaluated on 2D Color Doppler echocardiography with standard echo techniques on Toshiba Aplio Xv machine Data was recorded on a proforma. Data were analyzed using SPSS version 10.

## RESULTS

Out of 121 patients with MR, 20 patients had mitral regurgitation due to MVP. The problem of mitral valve prolapse with mitral regurgitation was more in females and also in age group between 21 to 30 years, both at 55%. Etiology of non rheumatic mitral regurgitation was solely identified to be mitral valve prolapse.

**Table 1. Frequency of MVP among patients with MR (n=121).**

Age Group	Number	Percentage
21-30	11	55
31-40	9	45

**Table 2. Distribution by age for patients with MVP and MR.**

	Number	Percentage
Patients with RHD	101	83.47%
Patients with MVP	20	16.53%

## DISCUSSION

Rheumatic heart disease remains to be a main cause of carditis and valvular heart disease in developing countries like Pakistan.<sup>6</sup> In our study, females were mainly affected by mitral valve prolapse just like study by Jones et al in American Indian participants in the Strong Heart Study. However, unlike the study of Jones et al, our study population was younger.<sup>7</sup> We do accept the small sample size evaluated in our study that might be responsible for such difference. In this study, there were 101 (83.47%) cases of Mitral Regurgitation were due to Rheumatic Heart Disease. Only 16.52% cases were due MVP. Much large sample studies are required to further clarify the statistics, but from our study, it seems that mitral valve prolapse is second leading cause of severe mitral regurgitation in our population. Mitral valve prolapse is the leading cause of severe mitral regurgitation in developed countries where rheumatic heart disease is extinct.<sup>8,9</sup> If such eradication of rheumatic heart disease is accomplished in Pakistan, it can be easily predicted that mitral valve prolapse would be the major next problem to face in patients with mitral regurgitation, as our study shows. We found out that in 21 to 30 years age group male patients were more as compared to females and we cannot find a proper reason in the literature that could

justify such a gender related issue.

## CONCLUSION

Mitral valve prolapse is the second most common cause of mitral regurgitation in our population.

### Author contributions:

Conception and design: Javid U Rehman  
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 Analysis and interpretation of the data: Asif Ullah  
 Drafting of the article: Asif Ullah  
 Critical revision of the article for important intellectual content: Asif Ullah  
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