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## Original Article

# A clinical study of Rheumatic Valvular Heart Disease in patients above forty years of age admitted in Assam Medical College and Hospital, Dibrugarh



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## ABSTRACT

**Background:** It is thought uncommon for Rheumatic Heart Disease (RHD) to present in the 5th decade or later with their first symptom. Only few studies are available on RHD in elderly.

**Aim:** To study the clinical profile of RHD in patients above 40 years of age presenting for the first time.

**Methods and material:** All patients aged 40 years and above, presenting for the first time with clinical features of RHD during a period of one year from May 2011 to April 2012, were studied. Other valvular heart diseases of non-rheumatic origin and congenital valvular heart diseases were excluded from the study. Patients were then evaluated with detailed history, clinical examination, electrocardiography, chest x-ray and echocardiography and relevant blood investigations.

**Results:** A total of 42 cases were enrolled in the present study. Most of patients presented with exertional dyspnea (38.1%), orthopnea (19.05%) and palpitation (35.71%). Atrial fibrillation (AF) was found in 64.29%, cerebrovascular accident (CVA) in 26.19%, congestive cardiac failure (CCF) in 16.67% and infective endocarditis (IE) in 9.52%. Isolated Mitral Stenosis (MS) was the most common valvular lesion, observed in 47.62% cases. Surprisingly, all the female patients did not have any cardiovascular symptoms during their pregnancies.

**Conclusion:** This study revealed that a large number of patients of RHD presenting for the first time are elderly. Even the female patients were asymptomatic during their previous pregnancies. Complications were fairly common at presentation. The factors which could be responsible for these need evaluation. Burden of RHD in elderly also need estimation.

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## 1. Introduction

RHD is the most serious complication of Rheumatic Fever (RF). Acute Rheumatic Fever follows a group A streptococcal infection of the tonsillo-pharynx, and leads to an inflammatory reaction that involves many organs including the heart, joints and central nervous system. Over ensuing years, usually as a result of recurrent episodes, leaflet thickening, scarring, calcification, and valvular stenosis may develop.<sup>1</sup>

Approximately 40%–60% of RF episodes result in RHD,<sup>2</sup> with progression dependent on the severity of carditis, recurrences of RF, and availability of and compliance with secondary prophylaxis. With chronic RHD, patients develop valve stenosis with varying degrees of regurgitation, atrial dilation, arrhythmias and ventricular dysfunction. Mitral valve stenosis appears to be one of the leading causes of chronic RHD requiring valve replacement in adults in the world.<sup>1</sup>

RHD is a major public health burden. The World Health Organization (WHO 2004) estimates that Acute Rheumatic Fever and subsequent RHD affect about 15.6 million people worldwide.<sup>2,3</sup> According to recent studies prevalence per 1000 population in United States is 0.6, Japan 0.7, India 6.0–11.0, Asia 0.4–21.0, Africa 0.3–15.0, South America 1.0–17.<sup>4</sup> The surveys conducted by the Indian Council of Medical Research (ICMR), indicate a decline in the prevalence of RHD over decades.<sup>5–7</sup>

ARF is mainly a disease of children aged 5–14 years. It follows 0.3% of cases of group A beta-hemolytic streptococcal pharyngitis in children.<sup>1</sup> Initial episodes become less common in older adolescents and young adults and are rare in persons aged >30 years. By contrast, recurrent episodes of ARF remain relatively common in adolescents and young adults. This pattern contrasts with the prevalence of RHD, which peaks between 25 and 40 years.<sup>8</sup>

The incidence of RHD in elderly patients is much higher than is commonly realized. There are very few studies of RHD in elderly and RHD is frequently missed or undiagnosed in elderly patients.<sup>9</sup>

It is observed in the recent years that patients attending Medicine and Cardiology Department, Assam Medical College and Hospital, Dibrugarh, are having RHD and most of them are elderly. It is more so in the ladies in the postmenopausal period. It is also observed that most of the postmenopausal woman attending the Medicine and Cardiology out patients department for the first time with some complications had more or less uneventful pregnancies and deliveries in spite of having Rheumatic Valvular Heart Disease.

Therefore it is thought to be appropriate to conduct a study on Rheumatic Heart Disease in patients above the age of 40 years of age presenting for the first time in the hospital with or without some complications.

Assam Medical College & Hospital, Dibrugarh is a tertiary care center in the upper Assam of the north-east region of India rendering services to the patients of few Districts of Assam, Arunachal Pradesh, Nagaland and Manipur. Therefore, the present study is undertaken to study this problem in this part of the country.

## 2. Aims and objectives of the study

- To study the clinical profile of Rheumatic Valvular Heart Disease in patients above the age of 40 years of age in this part of country.

## 3. Materials and methods

The present study was conducted on 42 patients who attended and/or were admitted in the Department of Medicine and Cardiology, Assam Medical College and Hospital, Dibrugarh, Assam during a period of one year from 1st May 2011 to 30th April 2012.

**Type of study:** The present study was a hospital based observational study.

**Selection of cases:** All patients aged 40 years and above, presenting for the first time with the symptoms and signs of Rheumatic Heart Disease with or without complications attending Medicine and Cardiology out patients department and admitted in Medicine and Cardiology Department were included in the study.

### 3.1. Inclusion criteria

- Patients above the age of 40 years presenting for the first time with symptoms and signs of Rheumatic Valvular Heart Disease with or without complications.

### 3.2. Exclusion criteria

- Other valvular heart diseases which were non-rheumatic in origin like rheumatoid arthritis, SLE, atherosclerotic, other connective tissue disorders etc.
- All other valvular heart diseases of congenital origin.

### 3.3. Case definitions

**RHD:** RHD was diagnosed on the basis of a medical history of ARF and/or cardiovascular abnormalities including presence of a cardiac murmur and standard echocardiographic criteria.<sup>10</sup>

Rheumatic Mitral Stenosis was typically diagnosed on the basis of thickening or calcification of the leaflets, especially the posterior leaflet and by involvement of the sub-valvular region leading to fusion, shortening, fibrosis and calcification of the mitral chordae.

Isolated or concomitant Mitral Regurgitation (MR) was diagnosed by any definitive evidence of regurgitation seen in two planes by Doppler evaluation using semi-quantitative measures. Severe MR was diagnosed by detection of additional systolic flow reversal in the pulmonary veins. Patients with trivial MR and no structural valve changes were excluded.

Rheumatic Aortic Stenosis or regurgitation (AR) was diagnosed on the basis of commissural fusion of the aortic leaflets,

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