

Research Article

Copyright © All rights are reserved by Pallavi

Rheumatic Heart Disease Down but Not Eliminated - A Case Study for Community Action

Pallavi^{1*} and K Suresh²

¹BSc (Nursing), (MPH) Scholar, Karnataka State Rural Development & Panchayat Raj University (KSRDPRU) Gadag, 582101, Karnataka, India.

Email: pallavijyo7971@gmail.com, Tel No: 919902936341

²MD, DIH, FIAP, FISCD, FIPHA, Public Health Consultant, Bengaluru, and Visiting Professor- MPH. KSRDPRU Gadag, Karnataka, India.

Email: Ksuresh.20@gmail.com, Tel No: 919810631222

***Corresponding author:** Pallavi, Karnataka State Rural Development & Panchayat Raj University, Gadag, 582101, Karnataka, India. Tel No: 91990293634
Email: pallavijyo7971@gmail.com

Received Date: July 26, 2021

Published Date: August 18, 2021

Abstract

Acute rheumatic fever, a multisystem inflammatory disease beginning in childhood with manifestations of episodes of fleeting joint pains, skin, and central nerve system. Such episodes if not treated well or preventive steps not taken will pave way for rheumatic heart disease, after many years. RHD involves immune inflammatory injury to cardiac valves. Here I present one such case I witnessed in March 2020. A 40-year-old female with known history of RHD since 2013 sought treatment in KMC super specialty hospital. Patient was under medication for RHD. In the current episode she reported with the complaints of chest pain, sore throat, fever, and fatigue on 27th March 2020. Based on echocardiogram, cardiologist confirmed that she has Rheumatic heart disease with mild mitral valve and tricuspid valve regurgitation. She was asked to continue Pentids 400 mg and metoclopramide that she was already taking and added Tab. Paracetamol 500 mg, Domperidone, Omeprazole, table B complex 400 mg. She was advised for routine check-up and follow up care. There was an improvement in patient condition within 2 days. Patient is under routine follow and under medications as of 31 May 2021 and doing well. Public Health Professional opine that RHD control program by the national health authorities is the need of the time.

Keywords: Rheumatic fevers; Rheumatic Heart Diseases; Mitral Valve Regurgitation; Heart failure

Introduction

Rheumatic heart disease is a group of acute and chronic heart disorders following rheumatic heart fever a non-communicable streptococcal childhood infection. It is one of the serious public health problems in low- and middle-income countries. Rheumatic heart disease is a result of damage to heart valves caused by several episodes of rheumatic fever and sore throat caused by group A streptococci. Generally, it affects the mitral valve by reducing the functional capacity of the valve and scarring of valves. Atrial fibrillation and stroke are the common complication of RHD.

The rheumatic heart disease continues to be an important cause of disease burden in India, affecting the population in their prime and productive phase of the life. Based on the hospital records there appears to be a diminishing trend in the country but

establishing a population-based surveillance system in the country for monitoring trends is the need of the time as the data on incidence and prevalence on a nationally represented sample are lacking [1].

I report an episode of a rheumatic heart disease during the period of lockdown which required routine follow up care and the patient receiving follow up care regular basis.

Case Presentation

A female of 40 years with known RHD fever episodes for 8 years. She was on tablet penicillin G Potassium and penicillin injection from 2013 since diagnosed by ASO titre test in 2013. In the Current Episode she complained of chest pain, breathlessness, palpitation, joint pain, sore throat, fatigue on March 27th 2020. In a medical

College Hospital (KMC Manipal popular super specialty hospital) in Dakshina Kannada district of Karnataka, India. Physician on clinical assessment recorded BP as 120/90 mm Hg and pulse was 65 beats per minute. She was conscious and well oriented. No signs of heart failure (Pedal oedema, breathlessness etc).

Investigations done

- I. Hb was 11.5 g/dl,
- II. complete blood count that indicated WBC is 9400 cells, platelet 2.19 lakhs.
- III. echo: the findings showed thickened mitral leaflets, AML doming PML mobility strictly restricted, mild mitral regurgitation, mild tricuspid regurgitation and EF level is 63%.

Treatment

She was treated as an outpatient as there were no indications for hospitalization. She was given with treatment Metoprolol Succinate (a long-acting Beta blocker for improving the efficiency of heart's pumping blood) 25mg BD, Pentids (Oral Penicillin) 400 mg OD and Sorbiterate 5 (isosorbide dinitrate- a vasodilator), and Paracetamol 500 mg for fever, Omeprazole (proton pump inhibitor that decreases the amount of acid produced in the stomach), Domperidone (anti-sickness medicine) and tablet B complex 400 mg for 15 days. She was advised to take long-acting Penicillin injection 12 lakh unit in every 28 days and undergo Echo every 6 month. After starting treatment chest pain, palpitation, sore throat diminished in two days. She is continuing the medication and doing well as of 31 May 2021.

History

The Patient could recall that she the first episode of fever, sore throat, feeling of fatigue while walking and climbing steps when she was 10-year old. There were recurrences of similar episodes almost every year and was given symptomatic treatment of antipyretics and analgesics each time. A Proper diagnosis and treatment of RHD was done only in 2013 when she was 32 years old. Patient had joint pain and fatigue during her first pregnancy but no other complaints. Antenatal check-up had not revealed RHD and delivery of first baby had no other complication.

Confirmation of Diagnosis

She was diagnosed as having RHD with mild mitral valve involvement in 2013 during one similar episode of fever and joint pains and was put on Pentids.

Outcome and follow up

During follow up visit after a month she had penicillin injection 12 lakh units. The tablet Pentid 400 mg OD and metaclopradol are continued. She was advised to take Sorbiterate sublingual tablets whenever she felt uneasiness or chest pain and palpitation. Adequate rest and sleep were advised. Cardiologist advised family to provide psychological support to patient in home environment.

The 3rd follow-up visits on 30 May 2020. The medication and Penicillin injection were continued. She is continuing the treatment advised by cardiologists and Penicillin injection 12 lakh unit is receiving every month as of May 2021.

Discussion

There more than 3.6 million patients of RHD estimated from 2011 census. Almost 44,000 patients are added every year, and expected mortality is 1.5%–3.3% per year [1]. Many studies report that Rheumatic fever is more frequent in women than men. It results from an auto immune process that develops after pharyngeal infection by group streptococcus A. In the heart mitral valve is most affected value with thickened leaflets, fusion of the commissures and shortening of the chordae.

In developing countries including India the RF and RHD are detected based on symptoms, audible murmurs, and echocardiographic evidence of structural and functional abnormalities of the valves. The ability to detect murmurs and differentiating functional from pathological murmurs depends upon clinical skills of the physician, settings of auscultation [1]. Hospital admission data show a decline in admission rates of RF/RHD overtime period as they accounted for 30%–50% of total admissions until the early 1980s and declined to less than 5% in recent years. ICMR multicentric studies show a decline in prevalence from 11% in 1972-75, to 5.6% in 1984-87 and 1.2% in 2001-07[1].

In a study in rural Haryana prevalence of RHD was found to be 2.2/1000 in 5- to 30-year-old subjects in 2010 [1]. A cross sectional echocardiography screening study was carried out among 6270 randomly selected school children aged 5-15 years in 2018 and mitral regurgitation was detected in five patients and estimated prevalence is 0.8/1000 school children. Echo cardiograph Doppler diagnosed 128 cases giving prevalence of 20.4/1000 school children [2].

Auscultation for pathologic murmur has been the traditional approach to screen school aged children for RHD in India. However, Marijon et al in 2007, showed that echocardiography (ECG) helps ten times more in identifying cases of RHD compared with auscultation [3]. Since then, Indian cardiologists depend upon the ECG for the diagnosis. A cross sectional echocardiography screening study was conducted among 44164 population aged above 15 years and age standardized prevalence of RHD rate 9.7/1000 population. The condition was more common among young population aged less than 44 years and high among females. The most common complication was Pulmonary hypertension followed by CHF, tricuspid regurgitation, and endocarditis. More than 2/3rd of patient could not recall past history of rheumatic fever [4].

A prospective 3-year observational study conducted among 193 Pregnant women with RHD at Menoufia University hospital Egypt. Mitral valve disease was more common in Rheumatic Fever

(51.4%). Patients with NYHA (New York heart Association) class III & IV had poor maternal outcome with heart failure, arrhythmias, thromboembolism and delivered by LACS [5].

A cross sectional study from Uganda among 309 new cases of RHD aged 15 to 65 years, had observed most common complication of heart failure (46.9%), Pulmonary atrial hypertension (32.7%), atrial fibrillation (13.9%), recurrent acute rheumatic fever(11.4%), infective endocarditis (4.5%) and stroke (1.3%) [6].

Conclusion

The rheumatic heart disease continues to be an important cause of disease burden in India, affecting the population in their prime and productive phase of the life. There are more than 3.6 million patients of RHD estimated from 2011 census in India. There is a declining trend in hospital admission of RHD cases, Establishing a population-based surveillance system for monitoring trends, management practices, and outcomes should be national priority. Initiating contextual interventions for prevention and control of rheumatic heart disease is still needs attention

Take home messages

- Poor socio- economic condition and poverty are the common risk factor for RHD
- Early diagnosis and treatment of rheumatic fever is the key strategy to prevent rheumatic heart disease
- Once RHD develops regular follow up and routine care, can reduce the risk of RHD burden.

Acknowledgement

None.

Conflicts of Interest

No conflicts of interest.

References

1. PC Negi, Sachin Sondhi, Sanjeev Asotra, Kunal Mahajan, Ayushi Mehta (2019) Current Status of rheumatic heart disease in India. *Indian Heart Journal* 71(1): 85-90.
2. Sheikh SS, Dahiya S (2018) Socioeconomic Burden of Rheumatic Heart Disease: An Insightful Look at in Indian Population. *Innov Pharm Pharmacother* 6(1): 01-05.
3. Saxena A, Zuhlke L, Wilson N (2013) Echocardiographic screening for rheumatic heart disease: Issues for the cardiology community. *Glob Heart* 8(3): 197-202.
4. Carapetis JR (2007) Rheumatic Heart Disease in Developing Countries. *N Engl J Med* 357(5): 439-441.
5. Sriharibabu M, Himabindu Y, Kabir Z (2013) Rheumatic heart disease in rural south India: A clinico-observational study. *J Cardiovasc Dis Res* 4(1): 25-29.
6. Rezk M, Gamal A (2016) Maternal and fetal outcome in women with rheumatic heart disease: a 3-year observational study. *Arch Gynecol Obstet* 294(2): 273-278.
7. Okello E, Wanzhu Z, Musoke C, Twalib A, Kakande B, et al. 2013) Cardiovascular Complications in newly diagnosed rheumatic heart disease patients at Mulago Hospital, Uganda. *Cardiovasc J Afr* 24(3): 80-85.