ORIGINAL RESEARCH PAPER

Cardiovascular

KEY WORDS: Rheumatic Heart Disease (RHD), Acute Rheumatic Fever (ARF), Mitral stenosis (MS), Mitral Regurgitation (MR), Aortic Stenosis (AS), Aortic Regurgitation (AS), Tricuspid Regurgitation (TR).

OUTCOME OF VALVE SURGERY AT RAJENDRA INSTITUTE OF MEDICAL SCIENCES RANCHI, JHARKHAND, INDIA: 5 YEARS FOLLOW UP

Dr Rakesh Kumar*

MBBS, DLO, MS, M.Ch CTVS Associate Professor Department Of Cardiothoracic And Vascular Surgery Rajendra Institute Of Medical Sciences Ranchi Jharkhand India 834009 *Corresponding Author https://orcid.org/0000-0002-2565-7565

ABSTRACT

Background: Rheumatic heart disease is a disease of poverty and negligence. It is very much prevalent in India leading to arrhythmia, congestive heart failure, multi-Valvular heart disease requiring open heart surgery in the form of valve repair or replacement. Last five years patients operated at RIMS Ranchi were included in this study. **Aims And Objective:** 1. To compare our follow up strategy with recent trend of follow up in valve surgery worldwide. 2. To know complications related to valve surgery, how to minimize and overcome with complications. **Material & Methods:** This retrospective review is based on a single Institution experience between February 1, 2019 and January 31, 2024 with 300 consecutive cases males (n 166) and female (n 134) surgeries, in which RHD was the primary diagnosis to ascertain valve surgery and outcomes expected for surgical treatment. Valve replacement and repair were performed as surgical procedure. Mechanical prosthetic heart valve (Tilting Disk/Bi-leaflet), Tissue valve, valve ring were used as prosthesis. All patients underwent echocardiography to assess successful valve surgery. **Results:** Out of 300 patients underwent valvular surgery on regular follow up we found following complications 1. Deranged INR-6 2. Bleeding: Intracranial or generalized- 4 3. Stuck valve-3 4. Recurrence of Valvular lesson in case of repair-1 5. Infective Endocarditis-1, 6. Stroke-3. **Conclusion:** Rheumatic heart disease is endemic in India. Early diagnosis and prevention is the key to limit the disease burden. Timely intervention and surgical intervention in suitable cases is best way to treat the patient. Regular follow up is compulsory to identify complications and its management. Valvular heart surgery is very safe in Rajendra Institute of Medical Sciences, Ranchi with risks equivalent to National and International standards. Most of the complications can be treated if reported early.

INTRODUCTION:

Rheumatic heart disease (RHD) remains a significant public health issue in India, particularly in rural and underserved areas. It is a condition where the heart valves are damaged by the body's immune response following a streptococcal throat infection, typically in childhood. Rheumatic fever is the precursor to rheumatic heart disease and can lead to permanent heart damage.

Key Aspects Of Rheumatic Heart Disease In India:

1. Prevalence:

India has one of the highest burdens of RHD in the world, with estimates suggesting that approximately 1.5-2.5 million people are affected by the condition. It is most common among children aged 5 to 15 years and is a leading cause of heart disease in young adults in India.

2. Risk Factors:

Streptococcal Throat Infections: Group A Streptococcus (GAS) infections, often resulting in strep throat or scarlet fever, can lead to rheumatic fever if not treated with antibiotics.

Inadequate Healthcare Access: Poor access to healthcare, especially in rural areas, delays diagnosis and treatment, increasing the risk of complications such as RHD.

Socioeconomic Factors: Malnutrition, overcrowded living conditions, and lack of sanitation contribute to the high incidence of streptococcal infections.

3. Pathophysiology:

Rheumatic fever is an autoimmune response to a prior streptococcal infection. The body's immune system mistakenly attacks its own tissues, particularly the heart valves, leading to inflammation and scarring. This can result in chronic valve damage, causing stenosis (narrowing) or regurgitation (leakage) of the heart valves, which can eventually lead to heart failure.

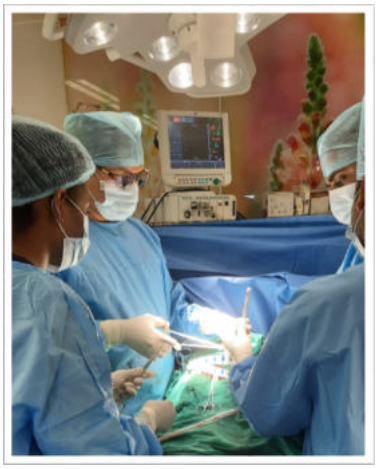
MATERIAL AND METHODS:

1. We included the Valve surgery performed on routine basis at RIMS Ranchi in last 5 years (2019 – 2024).
2. Our Cardiopulmonary bypass time was 40 minutes to 90 minutes with average of 60 minutes.
3. We used mild hypothermia of 32 degree.
4. We used prosthetic heart valve like tilting disc, bi-leaflet, tissue valve and repaired with valve ring in some cases.
5. We started anticoagulant on post of day 1 and continue till 3 months in case of valve repair and tissue valve patients having sinus rhythm with Target PT/ INR 1.5 to 2.
6. In mechanical prosthetic valve we keep the target of 2-3, 2.5 -3.5 PT/INR in single valve and multiple valve patients with lifelong anticoagulants.

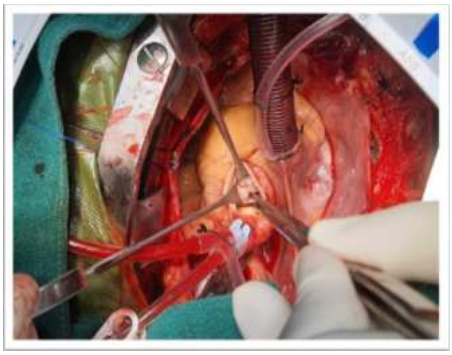
Table 1

Inclusion Criteria:	Exclusion Criteria:
• Elective valve surgery • Age 5 years to 75 years • Isolated single double or triple valve procedure.	• Emergency valve heart surgery. • Patient having NYHA 3 or 4 in preoperatively. • Patients having Infective endocarditis/ Acute Rheumatic fever

- Type of study- retrospective
- Limitation of study- single center and small study group.
- No conflict of interest.
- No disclosure.



Ctvs Ot



Aortic Valve Surgery

Mitral Valve Surgery

DISCUSSION:

Our protocol is for regular patients are to keep the patients in CT ICU till POD 2 or 3 and thereafter in recovery from 3 to 5 days. Discharge on POD 7 or 8.

We follow up at 1 week, 3 weeks, 6 weeks, and 12 weeks till 1 year. After 1 year 3 to 6 monthly on regular basis.

We see vitals, ECG, PT/INR on regular basis. If found any complications then ECHO, Cine fluoroscopy, Cardiac CT, Coronary Angiography.

RESULT:

On regular follow up of selected cases we found these complications with their total numbers:

1. Deranged PT/INR-6
2. Bleeding: Intracranial or generalized -4
3. Stuck valve-3
4. Recurrence of Valvular lesson in case of repair-1
5. Infective Endocarditis-1
6. Stroke-3

These complications were also managed with medications/ brain surgery for clot/thrombolysis of stuck valve/redo valve replacement/IE treatment and physiotherapy with rehabilitation. Most of the complications responded well and cured in due course of time with over all 1 mortality in infective endocarditis.

CONCLUSIONS:

Surgical technique through standard sternotomy and standard cannulation techniques and midline incision irrespective of age and gender of the patient without deterioration in outcome quality. Standard surgical methods can achieve valve repair or replacement to secure the valve functioning.

Durability of surgery is good and post op recovery is also smooth.

Long term regular follow up is very important to identify and treat complications.

REFERENCES:

1. Continuing Burden of Rheumatic Heart Disease in India.Gupta R, Panwar RB, Sharma A, Panwar SR, Rao RS, Gupta BK.J Assoc Physicians India. 2020 Oct;68(10):60-65.
2. Prevalence and outcome of subclinical rheumatic heart disease in India: the RHEUMATIC (Rheumatic Heart Echo Utilisation and Monitoring Actuarial Trends in Indian Children) study. Saxena A, Ramakrishnan S, Roy A, Seth S, Krishnan A, Misra P et al.
3. Epidemiological trends of RF/RHD in school children of Shimla in north India. Negi PC, Kanwar A, Chauhan R, Asotra S, Thakur JS, Bhardwaj AK. Indian J Med Res. 2013 Jun;137(6):1121-7
4. Present status of rheumatic fever and rheumatic heart disease in India. Padmavati S. Indian Heart J. 1995 Jul-Aug;47(4):395-8
5. Incidence of rheumatic fever and prevalence of rheumatic heart disease in India. Vijaykumar M, Narula J, Reddy KS, Kaplan EL Int J Cardiol. 1994 Mar 1;43(3):221-8.