E-ISSN 2250-0944

ISSN 2250-1150
doi: 10.48047/ijprt/15.02.193

Research Article

PREVALENCE AND PATTERN OF RHEUMATOLOGICAL DISORDERS IN CHILDREN'S LESS THAN 18 YEARS OF AGE IN A TERTIARY CARE HOSPITAL

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Received date: 10-08-2025, Accepted date: 18-08-2025, Date of publication: 23-08-20205.

Abstract

Introduction: Rheumatological diseases in children are chronic intractable inflammatory diseases that impede growth and development, and are often associated with systemic life-threatening complications. The common pediatric rheumatological disorders include Juvenile idiopathic arthritis (JIA), Systemic lupus erythematosis (SLE), Kawasaki disease, Henoch-Schonlein Purpura (HSP), Juvenile dermatomyositis (JDM), Mixed connective tissue disease, Juvenile Scleroderma and Fibromyalgia. They share many common symptoms like fever, constitutional symptoms like weight loss and loss of appetite, joint symptoms, dermatological manifestations and many other systemic manifestations depending on the type of rheumatological condition.

Materials and methods: A retrospective study was conducted in Department of Paediatrics, Kurnool Medical College, Kurnool from June 2023 to July 2025. The study population included about 56 children diagnosed with rheumatological diseases. Clearance from institution ethics committee was obtained before the study was started. An informed assent form was obtained from the parents of the children. The children fulfilling ILAR, ACR and EULAR criteria were enrolled in the study. The children with rheumatological diseases were subjected for detailed, clinical, hematological, immunological and other relevant history and findings. The patients were recategroized as systemic arthritis, oligoarthritis, polyarthritis (RF + ve & RF – ve), SLE and others. The parameters included age at diagnosis, gender, consanguinity, family h/o rheumatological diseases, joint swelling and limitation of joints, fever, rash, systemic manifestations & investigations like CBP, ESR, CRP, Proteinuria, LFT, RFT, ANA, Anti-ds DNA, RF, C3, C4, accordingly the clinical criteria for probable diagnosis of Pediatric rheumatological disease were used. The data was collected from medical records of the patients.

Results: The overall mean age in this study is 8.28 ±3.75years. Out of 56 children with rheumatological disorders, 41.071% children were 11-15 years and 37.5 % children were 6-10 years of age and 21.42% children were 1-5 years of age. As the p value for the above data was 0.168, suggests that there was no statistical significance. Out of 56 children of rheumatological disorders, Female children were 53.57%, while male children were 46.43%. The p value for the observed distribution was 0.022, which is statistically significant. Out of 43 children of rheumatological disorders, 51.1 % of children were having history of consanguinity.

Conclusion: This study was undertaken in order to know prevalence and pattern of rheumatological diseases in children. This study has shown that, most of the children were aged more than 8 years with females predominance. Rash and fever were the most common presenting complaints in this study. SLE and JIA was the most common disease followed by Henoch schonlein purpura in this study. This study had brought out important facts about the rheumatological manifestations in children. But the study sample size was small to generalize the findings. Further research in this direction can bring out more facts about rheumatological disorders.

Key Words: Rheumatological diseases, Systemic lupus erythematosis, Juvenile idiopathic arthritis.

INTRODUCTION

Rheumatological diseases in children are chronic intractable inflammatory diseases that impede growth and development, and are often associated with systemic life-threatening complications.[1] The common pediatric rheumatological disorders include Juvenile idiopathic arthritis (JIA), Systemic lupus erythematosis (SLE), Kawasaki disease, Henoch-Schonlein Purpura (HSP), Juvenile dermatomyositis (JDM), Mixed connective tissue disease, Juvenile Scleroderma and Fibromyalgia. They share many common symptoms like fever, constitutional symptoms like weight loss and loss of appetite, joint symptoms, dermatological manifestations and many other systemic manifestations depending on the type of rheumatological condition.[2]

Global data suggest that 2%–5% of the population suffers from rheumatological disorders, which when extrapolated to the Indian population, have increased numbers. There are 6-7 million children globally living with rheumatic diseases with a large majority of these residing in low resource income countries. Rheumatological diseases in children have varied clinical presentations which may mimic infections, metabolic disorders, and malignancies leading to delay in diagnosis.[3]

About 10-20% of the rheumatological disorders have their initial presentation in the paediatric age group. Significant disability affecting economic productivity and disability adjusted life years are the consequences of delayed diagnosis and appropriate interventions.[4] When compared

to the western nations there is a difference in the clinical spectrum of many rheumatological disorders in India. It is of utmost importance for a paediatrician to be cognizant of varied conditions that cause such symptoms in childhood and adolescence and its assesment to arrive at the correct diagnosis and plan further management.[4,5] hence this retrospective study was carried out with the aim of studying the clinical, epidemiological an laboratory profile of rheumatological disorders in the paediatric age group in a tertiary care hospital in South india.

MATERIALS AND METHODS

Study design: A Retrospective study

Age group: 1-14 years

Study period: 2 years

Total no of cases: 56

Study Duration: June 2023 to July 2025.

A retrospective study was conducted in Department of Paediatrics, Kurnool Medical College, Kurnool from June 2023 to July 2025. The study population included about 56 children diagnosed with rheumatological diseases. Clearance from institution ethics committee was obtained before the study was started. An informed assent form was obtained from the parents of the children. The inclusion and exclusion criteria was as follows,

Inclusion criteria

Children under 16 years fulfilling EULAR, ILAR, ACR criteria.

Exclusion criteria

Children with maqueraders like septic arthritis acute rheumatic fever, malignancy, HIV, metabolic diseases.

The children fulfilling ILAR, ACR and EULAR criteria were enrolled in the study. The children with rheumatological diseases were subjected for detailed, clinical, hematological, immunological and other relevant history and findings. The patients were recategroized as systemic arthritis, oligoarthritis, polyarthritis (RF + ve & RF – ve), SLE and others. The parameters included age at diagnosis, gender, consanguinity, family h/o rheumatological diseases, joint swelling and limitation of joints, fever, rash, systemic manifestations &

investigations like CBP, ESR, CRP, Proteinuria, LFT, RFT, ANA, Anti-ds DNA, RF, C3, C4, accordingly the clinical criteria for probable diagnosis of Pediatric rheumatological disease were used. The data was collected from medical records of the patients.

Statistical Analysis

The data thus obtained was entered in Microsoft Excel sheet and transferred and analysed using Statistical Package for social services. The data was then transferred and analysed using statistical package for social services (SPSS ver 20). The categorical variables were presented as frequencies and percentages. The continuous variables were presented as mean and standard deviations.

RESULTS

The overall mean age in this study is 8.28 ±3.75years. Out of 56 children with rheumatological disorders, 41.071% children were 11-15 years and 37.5 % children were 6-10 years of age and 21.42% children were 1-5 years of age. As the p value for the above data was 0.168, suggests that there was no statistical significance. Out of 56 children of rheumatological disorders, Female children were 53.57%, while male children were 46.43%. The p value for the observed distribution was 0.022, which is statistically significant. Out of 43 children of rheumatological disorders, 51.1 % of children were having history of consanguinity.

S.No	Age group	No of patients	Percentage
1	1-5 year	12	21.42%
2	6-10 years	21	37.5%
3	11-15 years	23	41.071%
		56	100

Table 1: Age distribution

S.No	Gender	No of patients	Percentage
1	Male	26	46.43%
2	Female	30	53.57%

Table 2: Gender distribution

S.No	Symptoms	Number of patients	Percentage
1	Fever	9	16.07

2	Rash	8	14.28
3	Joint pain	9	16.07
4	Joint swelling	15	26.78
5	Muscle pain	8	14.28
6	Back pain	4	7.14
7	Fatigue	11	19.64
8	Paleness	9	16.07
9	Oral ulcer	10	17.85
10	Swelling all over the body	4	7.14
11	Shortness of breath	7	12.5
12	Chest pain	3	5.35
13	Cough	3	5.35
14	Distension of abdomen	4	7.14
15	Headache	3	5.35
16	Convulsions	2	3.77
17	Weakness of one side of body	2	3.77

Table 2: Symptoms

In our study, the most common presenting complaints were joint swelling (26.78%), followed by back pain 7.14%, oral ulcers (17.85%), fever, joint pain, paleness (16.07%).

S.No	Symptoms	Number of patients	Percentage
1	Kawasaki disease	10	17.85%
2	Henoch schonlein purpura	11	19.64%
3	Takayasu arteritis	4	7.14%
4	Juvenile dermatomyositis	2	3.57%
5	Mixed connective tissue disorder	2	3.57%
6	Systemic lupus erythematosus	13	23.214%
7	Betchets disease	1	1.78%

8	JIA	13	23.214%

Table 3: Pattern of distribution

S.No	JIA	Number of patients	Percentage
1	Oligoarticular	6	10.714
2	Polyarticular	4	7.14
3	Systemic	3	5.35

Table 4: Juvenile idiopathic arthritis (JIA)

Variables (Total Cases)	Mean ± SD
Hb (gm/dL)	9.54 ± 1.98
WBC (Cells/Cumm)	9195.91 ± 4265.93
platelet (Lakhs/Cumm)	2933.09 ± 15233.16
Neutrophils %	57.12 ± 13.13
Lymphocyte %	36.05 ± 15.19
Esinophils %	4.75 ± 2.19
Raised Creatinine (mg/dL)	1.34 ± 0.42
S.albumin (g/dL)	2.90 ± 0.58
ESR (mm/hr)	44.76 ± 23.69
RF IU/ Ml	73.40 ± 20.13

Table 5: Investigations (Mean ± SD

Lab parameters	Abnormal	Percentage
CRP	23	41.071%
ESR	20	35.71%
Anemia	27	48.21%
Leucocytosis	5	8.92%
Low platelet count	3	5.35%
LFT (Transaminitis)	15	26.78%
RFT	12	21.42%
RFT(Raised creatinine)	22	39.28%
CUE(Proteinuria)	8	14.28%

Tablet 6: lab Parameters

In our study, most of the children had elevated CRP 23(41.07%) & ESR 20 (35.71 %). Most of the children were anemic 27 (48.21 %), 5 cases were having elevated leucocyte count (8.92 %), 3 cases were having low platelet count and 26.78 % of children were having deranged LFT, 39.28% were having deranged RFT and proteinuria in 8 children (14.28%).

DISCUSSION

In this retrospective observational study, on analyzing over a period of 24 months, after checking all the patients records, we have found 56 children were found to have rheumatological diseases Of 56 children, 30 (53.57 %) were females, 26 (46.43%) were males, with M:F ratio of 1:1.2.[6] While in Tushar et al study, out of 35 children, number of males and females were 15(42.85%), 20(57.1%) respectively with M:F ratio was1:1.2. Seifu et al, study shown that out of 52 children, males were 19(36.5%) and females were 33(63.4%) with M:F ratio of 1:2. Furia et al, in their study, had a population of 52 children showed dilated coronary arteries ,diagnosed as incomplete kawasaki and IVIG Transfusion, methypredinsolone along with aspirin, clopidogrel.[7]

Among the spectrum of rheumatological diseases, SLE, JIA was found to be the most common disease followed by HSP, Kawasaki, Takayasu arteritis, Juvenile dermatomyositis, Mixed connective tissue disorder and Betchets disease. The Mean age in this study group was 8.28 ± 3.75 years. Most of the studies on children with rheumatological disease had mean age > 8years with exception of study done by Seifu et al.[8]

In Seth et al, study done on JIA cases, out of 361 children diagnosed with JIA, frequency of occurrence of polyarticular, pauciarticular, systemic disease was 166(46%), 108(30%), 87(24%) respectively and RF positive in 15 %of polyarticular JIA ,7% of pauciarticular and 9% of patients with systemic subtype. ANA was positive in only 3 out of 66 patients whom test was done.[9]

In Tushar et al, study, in 35 children, anemia seen in highest percentage of 71.42% (in 25 childrens), with deranged RFT in 7(20%), deranged LFT in 3(8.57%). In the study by Furia et al, anemia was reported in 35 (67.3%) of the patients. Singh et al, study, reported anemia in 26 out of 74 patients (35.13%). which is quite less than our study. In our study, anemia was of highest percentage, which is similar to Tushar et al, and Furia et al.[10]

CONCLUSION

This study was undertaken in order to know prevalence and pattern of rheumatological diseases in children. This study has shown that, most of the children were aged more than 8 years with females predominance. Rash and fever were the most common presenting complaints in this study. SLE and JIA was the most common disease followed by Henoch schonlein purpura in this study. This study had brought out important facts about the rheumatological manifestations in children. But the study sample size was small to generalize the findings. Further research in this direction can bring out more facts about rheumatological disorders.

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