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ORIGINAL ARTICLE

Pattern of Rheumatological Diseases in Children in A Tertiary Care Hospital of Bangladesh

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Abstract

Background: *The spectrum and importance of Rheumatic Diseases in children are increasing day by day globally as well as at national level. These diseases are chronic intractable considered as important cause of childhood morbidity and disability.*

Objective: *To estimate the pattern of different types of rheumatologic diseases in Pediatric Rheumatology Department of Bangladesh Shishu Hospital & Institute.*

Method: *A retrospective study was done in the department of Pediatric Rheumatology unit from July 2022 to June 2023. Data were collected from the departmental registry.*

Results: *A total of 58 patients were enrolled. Highest number of patients had JIA (59%) followed by pediatric systemic vasculitides (17.24%) and SLE (8.6%). Among vasculitides, IgA vasculitis [Henoch–Schönlein purpura (HSP)] was predominant (8.6%) followed by Kawasaki Disease (5.2%), ANCA-associated vasculitis (AAV-1.7%), Polyarteritis nodosa (PAN-1.7%). Juvenile dermatomiositis (JDM) and systemic sclerosis (SS) was found in 3.4% and 1.7% cases respectively. Septic arthritis and reactive arthritis was also found in 6.9% and 3.4% cases. Polyarticular JIA was the commonest type (20.7%) in this series, followed by systemic onset, enthesitis related arthritis (ERA) and oligoarthritis.*

Conclusion: *Juvenile Idiopathic Arthritis (JIA) was the most prevalent paediatric rheumatologic condition in this study, followed by systemic vasculitides and systemic lupus erythematosus (SLE). Among the vasculitides, Henoch–Schönlein purpura (IgA vasculitis) and Kawasaki disease were most frequently observed.*

Keywords: *Disease pattern, rheumatologic diseases, children.*

Introduction

Although infectious diseases are major burdens in the pediatric population that lead to mortality attract much of the attention. As non-infectious, pediatric rheumatic diseases (PRDs) are not uncommon. They result in significant morbidity globally, having a substantial influence on health and quality of life, and inflicting an enormous burden of cost on health systems. In children, these are chronic intractable inflammatory diseases often with systemic life threatening complications.[1] Recent years have seen critical advances in understanding the nature of inflammation, the cells and the molecules that mediate it and the therapeutic possibilities of regulating the aberrant immune response. One of the most important advances in pediatric rheumatology is the realization that varieties of rheumatic diseases affect children frequently and can impede normal growth and development.[2] It is recognized that early recognition and diagnosis as well as timely intervention can improve the outcome. Importance is increasing throughout the world day by day. But it had been difficult to establish the extent of PRDs in defined populations.[3] Prevalence of JIA, which is the commonest rheumatologic problem in children varies from 19.8 to 400 per 100000 children in different areas

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of the world.[4] Vasculitis in children appears to have an incidence of about 50 cases per 100,000 children per year.[5] Pediatric SLE ranges from 1.89 to 25.7 per 100000 which is the second most common PRDs.[6]

The dedicated and comprehensive pediatric rheumatology clinical programme was established at KK Women's and Children's Hospital (KKH) in Singapore in 2009, first pediatric rheumatology clinic population in Asia. They showed that almost half of the patients referred to their programme were non-rheumatic conditions which is the same issue faced in other developed countries. ERA was the most common JIA subtype while uveitis related to JIA was rare.[7] However, limited data are available for Southeast Asia and shortage of pediatric rheumatologists where certain life threatening PRDs may be prevalent, such as systemic vasculitis and SLE. Among pediatric systemic vasculitides, the most common encounters were with IgA vasculitis and Kawasaki disease (KD) being the top two.[8] A single center study in Bangladesh over 5 years revealed highest number of patients had JIA (77%), followed by SLE (10%), IgA vasculitis (4.2%), Polyarteritis Nodosa (1.9%) and Kawasaki Disease (0.6%).[9] Epidemiological studies of chronic arthritis in childhood are meaningful to allow disease classification, description of the natural history and outcome in different disease entities, the identification of early prognostic factors, health care planning and, eventually, the identification of possible etiological factors.[10] Number of pediatric rheumatologic diseases are increasing throughout the world as well as at national level.[11] In Bangladesh few study about rheumatologic diseases. A small community based study found that prevalence of JIA was 60 per 100000 children in rural Bangladesh.[12] So, the present study was done to estimate the disease pattern of pediatric rheumatologic diseases in Bangladeshi children in a tertiary care hospital.

Materials and Methods

This is a retrospective study carried out in the department of Pediatric Rheumatology unit of Bangladesh Shishu Hospital & Institute from July 2022 to June 2023. Data were collected from the registry of Rheumatologic department. All the patients fulfilling the ILAR classification criteria of Juvenile Idiopathic Arthritis (JIA),[13] revised ACR classification criteria 1997 for systemic lupus erythematosus (SLE),[14] PReS-EULAR-PRINTO classification criteria of childhood vasculitis,[15] Bohan A, Peter JB Classification criteria for Juvenile Dermatomyositis (JDM),[16] and preliminary criteria for the classification of systemic sclerosis (SS)[17] were enrolled in this study. A total of 58 patients were enrolled with rheumatological diagnosis during one year period. Statically analysis was done using Microsoft Excel 2025.

Results

A total 58 patients were enrolled as Paediatric Rheumatological Diseases (PRDs) during the study period. Among them 56.9% were male and 43.1% were female (Fig.1). Highest (58.62%) number of patients was in the 5 to 10 years age group followed by 24.14% of patients in the 11-16 years group (Table I). In aspect of Paediatric Rheumatological diseases male were affected more than female (1.3:1). Among all PRDs, highest number of patients had JIA (58.58%) followed by paediatric systemic vasculitides (17.24%) and SLE (8.6%) (Table I and Fig.-2). Among the subtypes of JIA, polyarticular JIA was highest (20.7%) followed by Systemic JIA (15.5%) and enthesisitis related arthritis (ERA-15.5%) and oligoarthritis (6.9%). Among vasculitides, IgA vasculitis was predominant (8.6%) followed by Kawasaki Disease (5.2%), *ANCA*-associated vasculitis (1.7%), Polyarteritis nodosa (PAN- 1.7%). Juvenile dermatomiositis (JDM) and systemic sclerosis (SS) was found in 3.4% and 1.7% cases respectively. Septic arthritis and reactive arthritis was also found in 6.9% and 3.4% cases (Fig.-2).

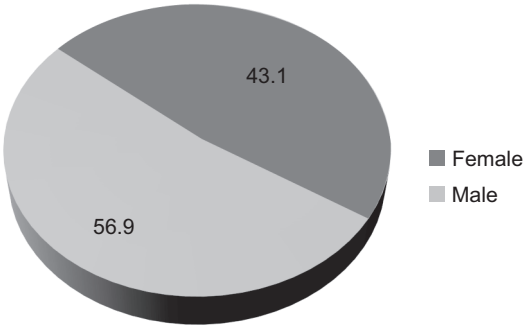

Fig.-1 *Gender Distribution of study patients*

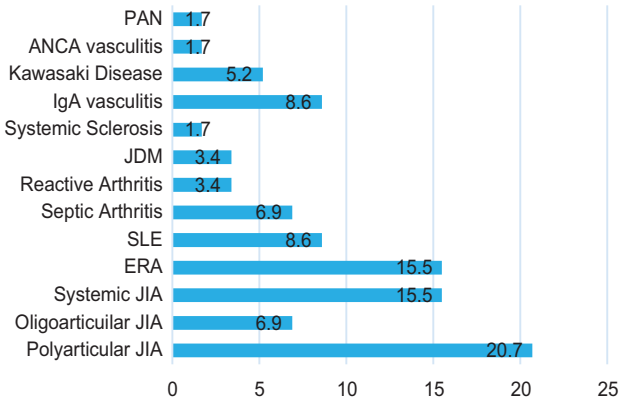

Fig.-2 *Disease pattern of Paediatric Rheumatologic patient*

Table I
Age of presentation of study patient (n=58)

Rheumatologic Diseases in childhood	Age		
	12 m-60 m	61 m-120 m	121 m-192 m
Poly Articular JIA	2	8	2
Oligo Articular JIA	1	3	0
Systemic Onset JIA	2	6	1
ERA	0	4	5
IgA vasculitis	1	3	1
Kawasaki Disease	1	2	0
ANCA-vasculitis	0	1	0
PAN	0	1	0
SLE	0	3	2
Septic Arthritis	2	1	1
Reactive Arthritis	1	0	1
JDM	0	2	0
Systemic Sclerosis	0	0	1
Total	10(17.24%)	34(58.62%)	14(24.14%)

Discussion

Epidemiological studies for uncommon diseases like Pediatric Rheumatological Diseases (PRDs) are sometimes difficult because of less available of the diseases and difficulties in diagnosis. Data are difficult to compare due to differences in diagnostic criteria, study designs and small sample size. In this retrospective study, valuable information about JIA, SLE, HSP, systemic sclerosis, JDM and polyarteritis nodosa (PAN) were found. During one year of this retrograde study period, 58 patients were enrolled, among them 33 were male and 25 were female, male: female ratio being 1.3:1. Pediatric male children suffer frequently from rheumatic diseases than female in our study. The similar view like as in this point in other study. [18,9] It is well established that PRDs are female predominating diseases.[19-21] In this study males were the main bulk of JIA patients. This might be due to the socio-cultural background where male children are given more importance and more care. Majority of children in this study presented at the age group of 5-10 years. All other studies done in our country in a hospital setting found similar results where male sex and late presentation with long duration of disease were common.[22,23] A nationwide surveillance study on PRDs in Japan found 51.3% cases with JIA, 29% with SLE, 10.2% with JDM, 0.9% with systemic sclerosis (SS) and 0.6% cases with PAN.[1] An USA based survey report on musculoskeletal problems in children found JIA as the largest group of their patient population (16% of total cases). Other forms of childhood arthritis was 12%, collagen vascular diseases was 9%, and vasculitis was 3.3%.[24] A Canada based longitudinal study found that 31.6% of patient had JIA, 31% had spondyloarthropathy, 34% had collagen vascular disorder and 11% had others.[25] It is to be noted that the Canadian study did not follow the ILAR classification criteria. So, they reported spondylo-arthropathy separately. The result of the current study was consistent with different pediatric rheumatological disease profiles. In this study, JIA was the main bulk (59%) followed by others rheumatological disease (41.2%), different childhood systemic vasculitis (17.24%) and SLE (10%). An Austrian study also found similar findings.[26] In the present study it was found that poly JIA (RF negative) was the predominant type of JIA (15.51%) followed by systemic onset (15.5%), ERA (15.5%), oligoarthritis (6.9%) and RF positive poly JIA (5.17%). A recent Indian cohort found ERA as most predominant type of JIA (35.3%) followed by poly JIA (29%), oligoarthritis (20.8%), systemic onset (7.7%) and others (6.3%).[27]

Jennifer et al, in their study found that oligoarthritis was the commonest subtype (50%) followed by poly JIA (30%), systemic onset (10%) and ERA(7%).[28] The Canadian study also reflected similar findings showing oligoarthritis type as the commonest (33.3%) followed by poly JIA (27%), ERA, other rheumatological diseases and systemic onset. Male children were found as the main bulk of JIA cases both in Bangladeshi and Indian studies. But in Canadian and Spanish studies female children formed the major bulk.[28,27] The age of presentation in the Bangladeshi and Indian cohort were found comparatively higher in all the subtypes of JIA except systemic onset. It is found that Asian children with JIA were different from Caucasian children by relative male predominance, older age of onset and different subtypes of JIA.[29]

Conclusion

Juvenile Idiopathic Arthritis (JIA) was the most prevalent pediatric rheumatologic condition in this study, followed by systemic vasculitides and systemic lupus erythematosus (SLE). Among the vasculitides, Henoch-Schönlein purpura (IgA vasculitis) and Kawasaki disease were most frequently observed. Other notable conditions included juvenile dermatomyositis, systemic sclerosis, septic arthritis, and reactive arthritis. This study underscores the growing burden of pediatric rheumatologic diseases in Bangladesh and emphasizes the importance of developing dedicated paediatric rheumatology services, enhancing diagnostic capacity, and increasing awareness among clinicians to ensure timely diagnosis and optimal long-term outcomes.

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