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SPECTRUM OF RHEUMATIC DISEASE IN KASHMIR VALLEY, NORTHERN INDIA

[1] Rajesh Minia, [1] Somnath Verma

[1] Department of internal medicine, Postgraduate, Sher-I-Kashmir institute of medical sciences (SKIMS), Soura, J & K, India - 190011.

Conflicts of Interest: Nil

Corresponding author: Somnath Verma

Abstract:

Background: Rheumatology is one of the new branches of internal medicine which appears to have been around for not more than 55 - 60 years .The 1990s were a time of new awareness of the subtleties of rheumatic diseases and how, with closed inspection, different syndromes could be separated out from what seemed initially to be the same basic disease. So the classification of the inflammatory rheumatic disorders is quite challenging. One fifth of Indian population suffers from some form of musculoskeletal pain disorder.5 million people in India suffer from Rheumatoid Arthritis. Data on the prevalence of arthritis and rheumatic diseases are necessary background information to understand the burden of disease and the potential need for health care for people with these diseases.

Material and Methods: The study was conducted at Sher-i-Kashmir institute of Medical sciences, Soura Srinagar (J&K), India in total number of 1738 subjects. All ethical considerations were taken care of during the study and the recruitment process was started only after ethical clearance from the Institutional Ethical Committee as per norms and all the individuals gave their informed consent to participate in the study. The informed consent taken in local language.

Results: The total number of patients in our study was 1738. The mean age of our patients was 40.25 ±14.178 years. The was a predominance of female patients in our study. Rheumatic diseases were seen to be more prevalent in rural patients than urban patients in our study. Rheumatoid arthritis was the most common rheumatic disease in our study.

Conclusion: This study provides an estimate of the prevalence of various rheumatic diseases in a tertiary care institute. The data obtained from this study on the prevalence of arthritis and rheumatic diseases are necessary background information to understand the burden of disease and the potential need for health care for people with these diseases.

Keywords: Rheumatic diseases, prevalence, burdan

Introduction

Rheumatology is one of the new branches of internal medicine which appears to have been around for not more than 55 - 60 years[1] .The 1990s were a time of new awareness of the subtleties of rheumatic diseases and how, with closed inspection, different syndromes could be separated out from what seemed initially to be the same basic disease. So the classification of the inflammatory rheumatic disorders is quite challenging.[2]

Rheumatology encompasses a wide spectrum of diseases ranging from the common soft tissue rheumatism syndrome to uncommon life threatening connective tissue diseases such as polyarteritis nodosa.

Rheumatism is derived from Greek word 'rheumatismos' meaning a stream or flow and it appears to have been introduced in medieval times to designate pain caused by a deranged flow from one of the four cardinal “humours”- blood, phlegm, bile (chlor) and black bile

(melancholy) into one of the many cavities of the body including joints.[3] OA, RA, spondyloarthro-pathies, soft-tissue rheumatism, LBA and arthralgias are the well-known and most important rheumatic disorders. OA has emerged as the most common form of joint disease in almost all the populations studied.[4]

Musculoskeletal pain and arthritis (MSK) are as old as the human civilization and a major community burden.[5] Rheumatic diseases find mention in the pre-biblical texts of Ayurveda.[6] Musculoskeletal diseases are among the most prevalent chronic conditions in the developed and developing world.[7]Many specific conditions manifest principally in the musculoskeletal system, such as connective tissue diseases, inflammatory arthritis, osteoarthritis and osteoporosis.[8]

Rheumatic Disorders are one of the largest health problems in the world in both developed and developing countries.[9] They cause immense morbidity in terms of poor quality of life, loss of function and productivity and further cause significant socioeconomic burden. Several inflammatory rheumatic diseases cause premature atherosclerosis, vascular complications and early death. All this is difficult to measure. The overall disease burden is likely to be underestimated.[10]

The economic burden of rheumatic diseases is often more substantial than other chronic conditions, including cardiovascular diseases and cancer.[11] The prevalence of rheumatic disorders varies between different studies from 11% to more than 50% and these conditions also represent 28% of disability compensation schemes.[9,12]

Environmental factors, however affect the prevalence of rheumatic disorders. The prevalence of rheumatic diseases may differ in ethnic population living in different geographical regions.[13,14] and it may change over time in people of the same geographical region. For example, in a US population, the incidence of rheumatoid arthritis progressively declined since early 1960, while the prevalence of gout doubled from 1969 to 1985 and it further increased by 80% from 1990 to 1994.[15]

One fifth of Indian population suffers from some form of musculoskeletal pain disorder.5 million people in India suffer from Rheumatoid Arthritis.[16]

Data on the prevalence of arthritis and rheumatic diseases are necessary background information to understand the burden of disease and the potential need for health care for people with this diseases.[17]

MATERIALS AND METHODS

The current study was designed as a prospective study on the prevalence of rheumatic diseases and was conducted in the department of internal medicine, division of rheumatology. The study included all the patients visiting rheumatology opd as well as those getting admitted under rheumatology division.

Each Patient was allotted a specific number in order to avoid double entry in the study. Proper history of each patient was taken and meticulous physical examination was done. Necessary investigations such as baseline investigations i.e CBC, Chemistry Routine urine examinations etc plus Special investigations like ANA, Anti ds DNA, C-ANCA,P-ANCA Complement levels,24 hour urinary proteins etc based on the patients history and examination were done.

The final diagnosis of rheumatic diseases was made by the rheumatologist on the basis of international criterias set for the diagnosis of various rheumatic diseases such as ACR/EULAR Rheumatoid arthritis classification criteria, Revised ACR classification criteria for SLE, American European consensus group modification of the European community criteria for Sjogren's syndrome, ACR criteria for classification of acute gouty arthritis, etc. Those patients who does not fulfill the criterias will be classified as UCTD or ill defined disease.

All ethical considerations were taken care of during the study and the recruitment process was started only after ethical clearance from the Institutional Ethical Committee as per norms and all the individuals gave their informed consent to participate in the study.

Inclusion criteria:

1. All the patients attending rheumatology opd clinic as well as those getting admitted under the rheumatology division.

Exclusion criteria:

1. Subjects unwilling to participate

STATISTICAL ANALYSIS

In the present study, Statistical package for social sciences (SPSS) v.20 was used as a software tool for the analysis of the data.

RESULTS:

Table 1: Demographic profile of the patients with Rheumatic diseases. (N=1738)

AGE(years): Mean ± SD(Range)	40.25 ± 14.178 (5 – 82)
Gender: Female – number (%) Male - number (%)	1341(77.2) 397(22.8)
Residence: Rural – number (%) Urban- number (%)	1314(75.6) 428(24.4)

Total number of patients attending SKIMS Rheumatology department during this study were 1738.Mean age of the patients with Rheumatic diseases attending SKIMS Rheumatology department was 40.25 ± 14.178 years with minimum age of 5 years and maximum age of 82 years. Most of the patients were females i.e 1341(77.2%). Males were 397(22.8%). Maximum number of patients were from rural area i.e 75.6% while patients from urban areas accounted for 24.4%.

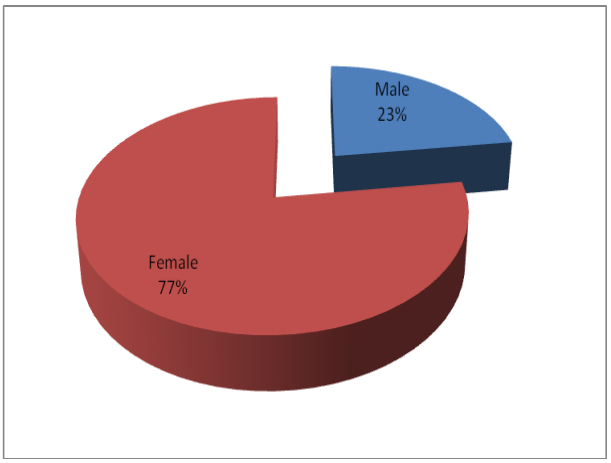

Figure 1: Sex disturbution of the patients with Rheumatic diseases (N=1738)

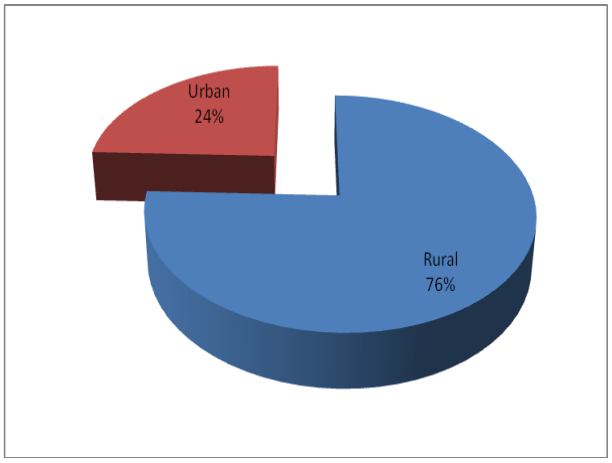

Figure 2: Residence disturbution of the patients with Rheumatic diseases.(N=1738)

Table 2: Age disturbution of the patients with Rheumatic diseases.(N=1738)

Age group (years)	No. of patients (%)
1 – 20	106(6)
20 – 40	727(41.9)
40 – 60	686(39.5)
60 – 80	211(12.1)
> 80	8(0.5)
Total	1738(100)

Maximum number of patients attending SKIMS Rheumatolgy department were in the age group of 20 - 40 years(41.9%) followed by 40 – 60 years(39.5%) while the patients with age >80 years were least in number(0.5%).

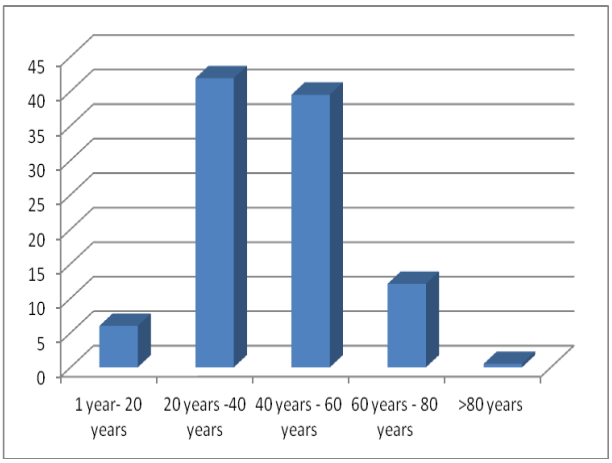

Figure 3: Age disturbution of the patients with Rheumatic diseases.(N=1738)

Table 3: Spectrum of Rheumatic diseases among the patients attending SKIMS Rheumatology department.(N=1738)

Disease	No. of patients (%)
Rheumatoid Arthritis	615(35.4)
Systemic lupus erythematosus	147(8.5)
Osteoarthritis	106(6.1)
Spondyloarthropathies	76(4.4)
Scleroderma	63(3.6)
UCTD	53(3.0)
MCTD	49(2.8)
Gout	37(2.1)
Vasculitis	32(1.8)
Osteoporosis	22(1.3)
Sjogrens	21(1.2)
APLA(Primary)	20(1.2)
JIA	19(1.1)
Myositis	9(0.5)
FMS	137(7.9)
Miscellaneous	332(19.1)
Total	1738(100)

Total number of patients in the study were 1738. Most common rheumatic disease in our study was RA(35.4%) followed by Miscellaneous(19.1%) followed by SLE (8.5%). Least number of patients had myositis(0.5%).

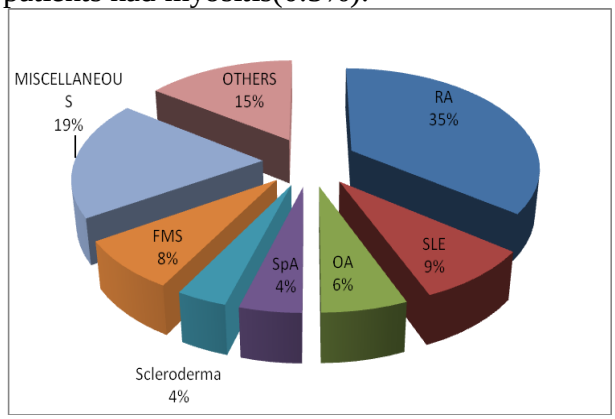

Figure 4: Spectrum of Rheumatic disease among the patients attending SKIMS Rheumatology department.(N=1738)

Table 4: Demographic profile of patients with Rheumatoid Arthritis.(N=615)

AGE(years): Mean ± SD(Range)	43.34 ± 13.185 (15 – 80)
Gender: Female-number(%) Male -number(%)	472(76.7) 143(23.3)
Residence : Rural - number(%) Urban- number(%)	469(76.3) 146(23.7)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as Rheumatoid arthritis were 615. Mean age of the patients with RA was 43.34 ± 13.185. Females (76.7%) outnumbered the males(23.3%). Most of the patients were from rural areas i.e 76.3% while patients from urban areas accounted for 23.7% cases.

Table 5: Age disturbution of patients with Rheumatoid arthritis (N=615)

Age group(years)	No. of patients (%)
1 – 20	12(2)
20 – 40	226(36.7)
40 – 60	285(46.3)
60 – 80	90(14.6)
> 80	2(0.3)
Total	615(100)

Maximum number of patients suffering from RA were in the age group of 40 – 60 years (46.3%) followed by 20 – 40 years(36.7%) while age group of 1 – 20 years and >80 years had least number of patients(2% & 0.3% respectively).

Table 6: Disturbution of joint involvement (joint pain) in patients with rheumatoid arthritis.(N=615)

Joint pains	Sex		Total Number (%)
	Male (no.)	Female(no.)	
Small +large joints	109	394	503(81.79)
Small joints	24	66	90(14.63)
Large joints	10	12	22(3.58)
Total	143	472	615(100)

Maximum number of patients suffering from RA had involvement of both small as well as large joints(81.79%) followed by patients with only small joints involvement (14.63%).only few patients had isolated large joints involvement(3.58%).

Table 7: Clinical profile of patients with rheumatoid arthritis.(n=615)

Symptoms & signs	Present		
	Male	Female	Total (%)
Joint swelling	143	472	615(100)
EMS	142	467	609(99)
Deformities	10	36	46(7.48)

Out of the total 615 patients with RA,joint swelling was present in all the patients. EMS was present in 609 patients(142 males & 467 Females) whereas it was absent in 6 patients (1 male & 5 females). Deformities were present in 46 patients (10 males & 36 females) while 569 patients (133 males & 436 females) had no deformities.

Table 8: Immunological profile of patients with rheumatoid arthritis.(N=615)

Immune Markers	Positive		
	Male	Female	Total(%)
RF	110	370	480(78)
Anti –CCP	105	351	456(74.1)

Out of the total 615 patients with RA, Rheumatoid factor was positive in 480 patients (110 males & 370 females) whereas it was negative in case of 135 patients (33 males & 102 females). Anti-CCP was positive in 456 patients (105 males & 351 females) whereas, it was negative in 159 patients(38 males & 121 females).

Table 9: Demographic profile of patients with SLE.(N=147)

AGE(years):	Mean ± SD (Range)	29.56 ± 10.486 (6 – 60)
Gender:	Female-number (%) Male –number (%)	138(93.9) 9(6.1)
Residence:	Rural – number (%) Urban- number (%)	110(74.8) 37(25.2)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as SLE were 147. Mean age of patients with SLE was 29.56 ± 10.486 with range of 6 to 60 years. Most of the patients were females i.e 138 cases (93.9%) whereas males accounted for only 9 cases (6.1%). Majority of the patients belonged to rural areas i.e 110 patients (74.8%) while 37 patients (25.2%) belonged to urban areas.

Table 10: Age disturbution of patients with SLE.(N=147)

Age group(years)	N0. of patients(%)
1 -20	23(15.6)
20 – 40	96(65.3)
40 – 60	25(17.0)
60 – 80	3(2.0)
> 80	0(0.0)
Total	147(100)

Majority of the patients who had SLE were in the age group of 20 – 40 years (65.3%) followed by 40 – 60 years age group(17%) while there was no patient with age >80 years,age group 60 – 80 had only 3 patients (2%).

Table 11: Distribution of joint involvement (joint pains) in patients with SLE. (N=147)

Joint pains	Sex		Total Number (%)
	Male (no.)	Female(no.)	
Small +large joints	5	69	74(50.34)
Small joints	3	44	47(31.97)
Large joints	1	7	8(5.44)
Nil	0	18	18(12.25)
Total	9	138	147(100)

Out of the 147 patients with SLE,74 patients (5 male & 69 females) had both small & large joint pains,47 patients (3 males & 44 females) had only small joint pains, 8 patients(1 male & 7 female) had only large joint pains while 18 patients(18 females) had no joint pains.

Table 12: Clinical profile of patients with SLE.(N=147)

Symptoms & signs	Present		Total Number(%)
	Male	Female	
Joint swelling	7	95	102(69.39)
EMS	4	73	77(52.38)
Skin lesions	6	101	107(72.80)
Ulcers	7	91	98(66.66)
photosensitivity	5	106	111(75.5)

Out of 147 patients of SLE, 102 (7 males & 95 Females) had joint swelling, 77(4 males & 73 females) had EMS. Skin lesions were present in 107(6 males & 101 females), ulcers in 98(7 males & 91 females) and 111 (5 males & 106 females) had photosensitivity.

Table 13: Immunological profile of patients with SLE. (N=147)

Immune Markers	Positive		Total Number(%)
	Male(no.)	Female(no.)	
ANA(IF)	8	135	143(97.28)
ANA(ELISA)	6	98	104(70.75)

Out of 147 patients of SLE, ANA (IF) was positive in 143 patients (8 males & 135 females) whereas, ANA (ELISA) was positive in only 104 patients(6 males & 98 females).

Table 14: Demographic profile of patients with osteoarthritis.(N=106)

AGE(years):	Mean ± SD (Range)	55.66 ± 11.062 (28 – 82)
Gender:	Female-number (%) Male -number (%)	82(77.4) 24(22.6)
Residence:	Rural - number (%) Urban- number (%)	87(82.1) 19(17.9)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as OA were 106. Mean age of patients with OA was 55.66 ± 11.062 with range of 28 to 82 years. Most of the patients were females i.e 82 cases (77.4%) whereas males accounted for 24 cases (22.6%). Majority of the patients belonged to rural areas i.e 87 patients (82.1%) while 19 patients (17.9%) belonged to urban areas.

Table 15: Age distribution of patients with OA.(N=106)

Age group(years)	N0. of patients(%)
1 -20	0(0.0)
20 – 40	5(4.7)
40 – 60	58(54.7)
60 – 80	40(37.7)
> 80	3(2.8)
Total	106(100)

Majority of patients with OA were in the age group of 40 – 60 years (54.7%) followed by 60 – 80 years age group (37.7%).

Table 16: Distribution of joint involvement in patients with OA.(N=106)

Joint involvement	Sex		Total Number (%)
	Male (no.)	Female(no.)	
Lower extremities	24	58	82(77.36)
Spine	0	21	21(19.81)
Upper extremities	0	3	3(2.83)
Total	24	82	106(100)

Out of 106 patients of OA,majority of the patients had lower extremities joint involvement(77.36%) followed by spine involvement(19.81%) while upper extremities joints were least involved(2.83%).

Table 17: Demographic profile of patients with spondyloarthropathies. (N=76)

AGE(years):	Mean ± SD (Range)	33.54 ± 11.250 (12 – 65)
Gender:	Female-number (%) Male -number (%)	31(40.8) 45(59.2)
Residence:	Rural - number (%) Urban- number (%)	47(61.8) 29(38.2)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having SpA were 76. Mean age of patients with SpA was 33.54 ± 11.250 with range of 12 to 65 years. Most of the patients were males i.e 45 cases (59.2%) whereas females accounted for 31 cases (40.8%). Majority of the patients belonged to rural areas i.e 47 patients (61.8%) while 29 patients (38.2%) belonged to urban areas.

Table 18: Age distribution of patients with spondyloarthropathies.(N=76)

Age group(years)	N0. of patients (%)
1 -20	8(10.5)
20 – 40	46(60.5)
40 – 60	21(27.6)
60 – 80	1(1.3)
> 80	0(0.0)
Total	106(100)

Majority of the patients with SpA were in the age group of 20 – 40 years (60.5%) followed by 40 – 60 years age group(27.6%). There was no patient with SpA with age >80 years.

Table 19: various types of spondyloarthropathies.(N=76)

SpA	Sex		Total Number (%)
	Male	Female	
Undifferentiated	11	15	26(34.21)
AS	19	3	22(28.95)
Psoriatic	9	5	14(18.42)
Reactive	4	5	9(11.84)
Enteropathic	2	3	5(6.58)
Total	45	31	76(100)

Most common type of SpA in our patients was undifferentiated SpA(34.21%) followed by AS(28.95%) whereas enteropathic SpA was least common(6.58%).

Table 20: Demographic profile of patients with scleroderma.(N=63)

AGE(years):	Mean ± SD (Range)	39.22 ± 11.764 (15 – 70)
Gender:	Female-number(%) Male -number(%)	60(95.2) 3(4.8)
Residence :	Rural - number(%) Urban- number(%)	54(85.7) 9(14.3)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as scleroderma were 63. Mean age of patients with scleroderma was 39.22 ± 11.764 with range of 15 to 70 years. Most of the patients were females i.e 60 cases (95.2%) whereas males accounted for only 3 cases(4.8%). Majority of the patients belonged to rural areas i.e 54 patients (85.7%) while 9 patients(14.3%) belonged to urban areas.

Table 21: Age distribution of patients with scleroderma.(N=63)

Age group(years)	N0. of patients(%)
1 -20	3(4.8)
20 – 40	29(46)
40 – 60	26(41.3)
60 – 80	5(7.9)
> 80	0(0.0)
Total	63(100)

Majority of patients with scleroderma were in the age group of 20 – 40 years(46%) followed by age group of 40 – 60 years(41.3%). There was no patients with age >80 years.

Table 22: Demographic profile of patients with UCTD.(N=53)

AGE(years):	Mean ± SD (Range)	33.23 ± 12.395 (7 – 70)
Gender:	Female-number(%) Male -number(%)	46(86.8) 7(13.2)
Residence:	Rural - number(%) Urban- number(%)	36(67.9) 17(32.1)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as UCTD were 53. Mean age of patients with UCTD was 33.23 ± 12.395 with range of 7 to 70 years. Most of the patients were females i.e 46 cases(86.8%) whereas males accounted for only 7 cases(13.2%). Majority of the patients belonged to rural areas i.e 36 patients(67.9%) while 17 patients(32.1%) belonged to urban areas.

Table 23: Age distribution of patients with UCTD.(N=53)

Age group(years)	N0. of patients(%)
1 -20	11(20.8)
20 – 40	24(45.3)
40 – 60	16(30.2)
60 – 80	2(3.8)
> 80	0(0.0)
Total	53(100)

Majority of patients with UCTD were in the age group of 20 – 40 years(45.3%) followed by age group of 40 – 60 years(30.2%) followed by 1 – 20 years age group (20.8%). There was no patients with age >80 years.

Table 24: Demographic profile of Patients with MCTD.(N=49)

AGE(years): Mean ± SD (Range)		31.14 ± 11.124 (14 – 60)
Gender:	Female-number(%) Male -number(%)	47(95.9) 2(4.1)
Residence :	Rural - number(%) Urban- number(%)	33(67.3) 16(32.7)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as MCTD were 49. Mean age of patients with MCTD was 31.14 ± 11.124 with range of 14 to 60 years. Most of the patients were females i.e 47 cases(95.9%) whereas males accounted for only 2 cases(4.1%). Majority of the patients belonged to rural areas i.e 33 patients(67.3%) while 16 patients(32.7%) belonged to urban areas.

Table 25: Age distribution of patients with MCTD.(N=49)

Age group(years)	N0. of patients(%)
1 -20	5(10.2)
20 – 40	31(63.3)
40 – 60	12(24.5)
60 – 80	1(2.0)
> 80	0(0.0)
Total	49(100)

Majority of patients with MCTD were in the age group of 20 – 40 years(63.3%) followed by age group of 40 – 60 years(24.5%) followed by 1 – 20 years age group (10.2%). There was no patients with age >80 years.

Table 26: Demographic profile of patients with gout.(N=37)

AGE(years): Mean ± SD (Range)		48.54 ± 12.653 (28 – 70)
Gender:	Female-number(%) Male -number(%)	10(27) 27(73)
Residence :	Rural - number(%) Urban- number(%)	25(67.6) 12(32.4)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having gout were 37. Mean age of patients with gout was 48.54 ± 12.653 with range of 28 to 70 years. Most of the patients were males i.e 27 cases(73%) whereas females accounted for 10 cases(27%). Majority of the patients belonged to rural areas i.e 25 patients(67.6%) while 12 patients(32.4%) belonged to urban areas.

Table 27: Age distribution of patients with gout.(N=37)

Age group(years)	N0. of patients(%)
1 -20	0(0.0)
20 – 40	10(27.0)
40 – 60	18(48.6)
60 – 80	9(24.3)
> 80	0(0.0)
Total	37(100)

Out of 37 patients with gout ,majority were in the age group of 40 – 60 years (48.6%) followed by 20 – 40 years age group(27%) followed by 60 – 80 years age group. There was no patient with age <20 years or >80 years.

Table 28: Demographic profile of the patients with vasculitis.(N=32)

AGE(years):	Mean ± SD (Range)	41.56 ± 15.326 (20 – 80)
Gender:	Female-number(%) Male -number(%)	14(43.8) 18(56.3)
Residence :	Rural - number(%) Urban- number(%)	22(68.8) 10(31.3)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having vasculitis were 32. Mean age of patients with vasculitis was 41.56 ± 15.326 with range of 20 to 80 years. Most of the patients were males i.e 18 cases(56.3%) whereas females accounted for 14 cases(43.8%). Majority of the patients belonged to rural areas i.e 22 patients(68.8%) while 10 patients(31.3%) belonged to urban areas.

Table 29: Age distribution of patients with vasculitis.(N=32)

Age group(years)	N0. of patients(%)
1 -20	0(0.0)
20 – 40	17(53.1)
40 – 60	9(28.1)
60 – 80	5(15.6)
> 80	1(3.1)
Total	32(100)

Majority of the patients with vasculitis were in the age group of 20 – 40 years (53.1%) followed by 40 – 60 years age group(28.1%) followed by 60 – 80 years age group (15.65). There was no patients with age <20 years.

Table 30: Demographic profile of patients with osteoporosis.(N=22)

AGE(years):	Mean ± SD (Range)	58.00 ± 9.943 (30 – 70)
Gender:	Female-number(%) Male -number(%)	21(95.5) 1(4.5)
Residence :	Rural - number(%) Urban- number(%)	15(68.2) 7(31.8)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having osteoporosis were 22. Mean age of patients with osteoporosis was 58.00 ± 9.943 with range of 30 to 70 years. Most of the patients were females i.e 21 cases(95.5%) whereas males accounted for only 1 cases(4.5%). Majority of the patients belonged to rural areas i.e 15 patients(68.2%) while 7 patients(31.8%) belonged to urban areas.

Table 31: Age distribution of patients with Osteoporosis.(N=22)

Age group(years)	N0. of patients(%)
1 -20	0(0.0)
20 – 40	1(4.5)
40 – 60	7(31.8)
60 – 80	14(63.6)
> 80	0(0.0)
Total	22(100)

Out of the 22 patients with osteoporosis, majority were in the age group of 60 – 80 years (63.6%) followed by 40 – 60 years age group(31.8%).

Table 32: Demographic profile of patients with Sjogren's syndrome.(N=21)

AGE(years):	Mean ± SD (Range)	40.95 ± 12.890 (20 – 62)
Gender:	Female-number(%) Male -number(%)	19(90.5) 2(9.5)
Residence :	Rural - number(%) Urban- number(%)	17(81) 4(19)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having sjogren's were 21. Mean age of patients with sjogrens was 40.95 ± 12.890 with range of 20 to 62 years. Most of the patients were females i.e 19 cases(90.5%) whereas males accounted for only 2 cases(9.5%). Majority of the patients belonged to rural areas i.e 17 patients(81%) while 4 patients(19%) belonged to urban areas.

Table 33: Age distribution of the patients with sjogrens's syndrome.(N=21)

Age group(years)	N0. of patients(%)
1 -20	0(0.0)
20 – 40	9(42.9)
40 – 60	8(38.1)
60 – 80	4(19.0)
> 80	0(0.0)
Total	21(100)

Out of 21 patients with sjogren's ,majority of the patients were in the age group of 20- 40 years(42.9%) followed by 40 – 60 years age group(38.1%). There was no patient with age <20 years or >80 years.

Table 34: Demographic profile of patients with primary APLA.(N=20)

AGE(years):	Mean ± SD (Range)	29.60 ± 6.091 (21 – 45)
Gender:	Female-number(%) Male -number(%)	20(100) 0(0)
Residence :	Rural - number(%) Urban- number(%)	19(95) 1(5)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having primary APLA were 20. Mean age of patients with primary APLA was 29.60 ± 6.091 with range of 21 to 45 years. All the patients were females. Majority of the patients belonged to rural areas i.e 19 patients(95%) while only 1 patients(5%) belonged to urban areas.

Table 35: Age distribution of the patients with primary APLA.(N=20)

Age group(years)	N0. of patients(%)
1 -20	0(0.0)
20 – 40	19(95.0)
40 – 60	1(5.0)
60 – 80	0(0.0)
> 80	0(0.0)
Total	20(100)

Out of the 20 patients of primary APLA, 19(95%) were in the age group of 20 – 40 years ,1(5%) was in the age group of 40 – 60 years. Majority of the patients diagnosed as primary APLA presented with history of pregnancy losses(75%) while rest(25%) presented with DVT.

Table 36: Demographic profile of patients with JIA.(N=19)

AGE(years):	Mean ± SD (Range)	14.52 ± 1.728 (9 – 16)
Gender:	Female-number(%) Male -number(%)	17(89.5) 2(10.5)
Residence :	Rural - number(%) Urban- number(%)	16(84.2) 3(15.8)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having JIA were 19. Mean age of patients with JIA was 14.52 ± 1.728 with range of 9 to 16 years. Most of the patients were females i.e 17 cases(89.5%) whereas males accounted for only 2 cases(10.5%). Majority of the patients belonged to rural areas i.e 16 patients(84.2%) while 3 patients(15.8%) belonged to urban areas. All the patients having JIA were in the age group of 1 – 20 years.

Table 37: Demographic profile of patients with myositis.(N=9)

AGE(years):	Mean ± SD (Range)	38.56 ± 24.449 (9 – 70)
Gender:	Female-number(%) Male -number(%)	8(88.9) 1(11.1)
Residence :	Rural - number(%) Urban- number(%)	7(77.8) 2(22.2)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having myositis were 9. Mean age of patients with myositis was 38.56 ± 24.449 with range of 9 to 70 years. Most of the patients were females i.e 8 cases (88.9%) whereas males accounted for only 1 case(11.1%). Majority of the patients belonged to rural areas i.e 7 patients(77.8%) while 2 patients(22.2%) belonged to urban areas.

Table 38: Age distribution of the patients with myositis.(N=9)

Age group(years)	N0. of patients(%)
1 -20	2(22.2)
20 – 40	3(33.3)
40 – 60	1(11.1)
60 – 80	3(33.3)
> 80	0(0.0)
Total	9(100)

Out of 9 patients of myositis,age group 20 – 40 years & 60 – 80 years had maximum patients ;3 each(33.3%).followed by 1 – 20 years age group with 2 patients(22.2%).

Table 39: Demographic profile of patients with FMS.(N=137)

AGE(years):	Mean ± SD (Range)	37.10 ± 10.659 (15 – 80)
Gender:	Female-number(%) Male -number(%)	122(89.1) 15(10.9)
Residence :	Rural - number(%) Urban- number(%)	110(80.3) 27(19.7)

Total number of patients attending SKIMS Rheumatology department who were diagnosed as having FMS were 137. Mean age of patients with FMS was 37.10 ± 10.659 with range of 15 to 80 years. Most of the patients were females i.e 122 cases (89.1%) whereas males accounted for only 15 case(10.9%). Majority of the patients belonged to rural areas i.e 110 patients(80.3%) while 27 patients(19.7%) belonged to urban areas.

Table 40: Age disturbution of the patients with FMS.(N=137)

Age group(years)	N0. of patients(%)
1 -20	5(3.6)
20 – 40	71(51.8)
40 – 60	58(42.3)
60 – 80	2(1.5)
> 80	1(0.7)
Total	137(100)

Out of 137 patients having FMS, majority were in age group of 20 – 40 years (51.8%) followed by 40 – 60 years age group(42.3%).

Table 41: Demographic profile of patients having Miscellaneous rheumatic diseases.(N=332)

AGE(years): Mean ± SD (Range)		39.64 ± 13.431 (5 – 80)
Gender:	Female-number(%)	234(70.5)
	Male -number(%)	98(29.5)
Residence :	Rural - number(%)	247(74.4)
	Urban- number(%)	85(25.6)

Total number of patients attending SKIMS Rheumatology department who were having Miscellaneous rheumatic diseases were 332. Mean age of patients with miscellaneous was 39.64 ± 13.431 with range of 5 to 80 years. Most of the patients were females i.e 234 cases (70.5%) whereas males accounted for 98 case(29.5%). Majority of the patients belonged to rural areas i.e 247 patients(74.4%) while 85 patients(25.6%) belonged to urban areas.

Table 42: Age distribution of patients with Miscellaneous rheumatic diseases.(N=332)

Age group(years)	N0. of patients(%)
1 -20	18(5.4)
20 – 40	140(42.2)
40 – 60	141(42.5)
60 – 80	32(9.6)
> 80	1(0.3)
Total	332(100)

Out of 332 patients with Miscellaneous rheumatic diseases, majority of the patients were in the age group of 40 – 60 years & 20 – 40 years i.e 141(42.5%) & 140(42.2%) respectively whereas ,there was only 1 patient(0.3%) with age >80 years.

Table 43: Various types of miscellaneous rheumatic diseases with sex disturbution. (n=332)

Miscellaneous rheumatic diseases	Sex		Total Number (%)
	Male	Female	
Arthralgias	23	85	108(32.53)
Backache	38	63	101(30.42)
Soft tissue symptoms	17	48	65(19.58)
Vit D deficiency	16	36	52(15.66)
Infective	4	2	6(1.81)
Total	98	234	332(100)

Out of 332 patients with Miscellaneous rheumatic diseases, arthralgias were present in 108 patients (23 males & 85 females),101 patients(38 males & 63 females) had backache, 65 patients (17 males & 48 Females) had Soft tissue symptoms, vitamin D deficiency was present in 52 patients (16 males & 36 females) while 6 patients(4 males & 2 females) had infective causes.

Discussions

The current study was designed as a prospective study on the prevalence of rheumatic diseases and was conducted in the department of internal medicine,division of Rheumatology. The total number of patients in our study was 1738. The mean age of our patients was 40.25 years which was similar to that of a comparable study done at the Rheumatology clinic, University Kebangsaan Malaysia[35] and at a University Hospital in Riyadh, Saudi Arabia.[36] In contrast,the mean age reported by workers in Umea(Sweden)[37] and Southern California[38] was 50 years. The age of the patients ranged from 5 years to 82 years. A large proportion(81.4%) of the patients seen were in the second to fifth decade of life, which was similar to that of a study done done at the Rheumatology clinic, University Kebangsaan Malaysia[35] where also the majority of the patients were in the second to fifth decade of life. In our study,12.6% patients were above 60 years of age and 6.0% were below the age of 20 years.

The was a predominance of female patients in our study. Likewise, in most other major studies, there was a similar trend except for the study done at the Tri-service Hospital in Taipei[39] which covers the military population there,and the study done at the Chittagong Medical college Hospital,Bangladesh[26] which also has a slight male predominance. Those with gout and spondyloarthropathies (psoriatic arthritis and ankylosing spondylitis) were predominantly males. In our study rheumatic disorders were lower in the urban population than in the rural population which was similar to that shown by Lagu joshi, et al.in their study.[40]

A wide spectrum of diagnostic categories were seen with varying frequencies among the study population.Rheumatoid arthritis was the commonest rheumatic disease seen in our study which was similar to that of a comparable study done at the Rheumatology clinic, University Kebangsaan Malaysia.[35] Degenerative joint disease accounted for a relatively small proportion of cases seen when compared to other major studies but was similar to study done at the Rheumatology clinic, University Kebangsaan Malaysia.[35] The reasons for a relatively small proportion of cases of degenerative joint disease could be because a large proportion of our population do not seek medical attention for such rheumatic complains and even when they do , they are often seen by traditional medical practitioners, general practitioners, orthopaedic surgeons or physiotherapists.

Rheumatoid arthritis was the commonest rheumatic disease seen in our study accounting for 35.4% of the total patients. The mean age of the patients at the onset was 43.34 ± 13.185 years. Females were more commonly affected with female- male ratio of 3.3 : 1. This was consistent with other studies.[41,42,43,44] Most of the patients had involvement of both the small joints and large joints at presentation. The reason for

this was the delay in seeking specialist opinion as most of the patients had initially gone to either general practitioners or orthopaedic surgeons. Early morning stiffness (> 1 hour) was present in almost all the patients(99%). The deformities were seen in only few patients(7.48%). 78% patients were positive for rheumatoid factor and 74.1% were positive for Anti –CCP. This was in consistent with the previous results.[45]

SLE was seen in 147 patients(8.5%) in our study. The mean age of SLE patients in our study was 29.56 ± 10.486 years. This was comparable to a study done at a tertiary care centre in western india.[46] Out of 147 patients,138 were females and 9 were males. The female to male ratio was 15.33 : 1. Saigal R, et al.[46] reported female to male ratio of 11:1 wheras , Binoy, et al[47] reported female to male ratio of 19:1. Arthritis was present in 69.39% of patients, Skin lesion were present in 72.80% of the patients, ulcers were present in 66.66% of the patients whereas, photosensitivity was seen in 75.50% of the patients. All these finding were comparable to the study conducted by Malaviya, et al.[48] except photosensitivity which was slightly on a higher side in our study. ANA(IF) was positive in 97.28% patients which was comparable to the previous studies.[46,47,48,49]

Osteoarthritis was seen in 106 patients only. It was relatively a small proportion of the cases when compared to other major series. The reasons being that a large proportion of our population do not seek medical attention for such rheumatic complains and even when they do , they are often seen by traditional medical practitioners, general practitioners, orthopaedic surgeons or physiotherapists. The mean age was 55.66 ± 11.062 years. Females were more commonly affected than males. Female to male ratio was 3.4 :1. This was comparable to the study conducted by Racaza GZ, et al.[50] Most commonly involved joints were those of lower extremities followed by spine.

Spondyloarthropathies were seen in 76 patients with a mean age of 33.54 ± 11.250 years. Undifferentiated and Ankylosing spondylitis accounted for the majority of cases of spondyloarthropathies followed by psoriatic arthritis. Majority the patients with ankylosing spondylitis and psoriatic arthritis were males which was comparable to the previous study.[35] Scleroderma was diagnosed in 63(3.6%) patients with mean age of 39.22 ± 11.764. Majority of the patients with scleroderma were female. The female to male ratio was 20:1. This was comparable with pervious studies where also majority of the scleroderma patients were females. [17,26] UCTD accounted for 3% of the total patients with female predominance.MCTD accounted for 2.8% of the total patients which was comparable with the study done by G.L. Chin et al.[35] Females accounted for the majority of the cases of MCTD. This was comparable to the study done by Suzon Al Hasan, et al.[26]

There were 37 patients with gout in our study which accounted for 2.1% of the total patients. The majority of the patients having gout were males with Male to female ratio of 2.7:1.This was comparable to the study done by Suzon Al Hasan, et al.[26] The studies conducted by S.A.oguntona, etal.[17] and G.L.Chin, et al[35] had higher percentage of patients with gout.

Vasculitis accounted for 1.8% of the total patients. There was slightly male predominance in the patients having vasculitis with male to female ratio of 1.28:1. In our study Osteoporosis accounted for only 1.3% of the total number of the patients. The reason behind the low percentage osteoporosis in our study was that the patients with osteoporosis were being treated by others departments of our hospital also.

Sjogrens syndrome was found in 1.2% of the total patients in our study.Majority of the patients with sjogren syndrome were female with female to male ratio of 9.5:1. The study conducted by S.A.oguntona, et al[17] had 1.3% of the patients with sjogrens syndrome with majority of them being females. Primary APLA was diagnosed in 1.2% of the total patients. All the patients with Primary APLA were females with majority of them in second and third decade of life.

JIA was seen in 1.1% of the total patients. Majority of the patients with were females. In study conducted by Suzon Al Hasan, et al[26] , juvenile arthritis accounted for 9.8% of the patients with majority of them being females. But in this study they have included both JIA and Juvenile AS under the Juvenile arthritis. Myositis

was diagnosed in 0.5% of the total patients .Majority of the Patients with myositis were female . In study conducted by S.A.oguntona et al[17] myositis (polymyositis) was seen in 0.2% patients . All the patients with myositis in this study were females.

FMS was seen diagnosed in 137 patients. Mean age of the patients with FMS was 37.10 ± 10.659 years. Majority of the patients were females as seen in earlier studies.[26] A large proportion of the patients had miscellaneous rheumatic disorders which included arthralgias, backache,vitamin D deficiency, soft tissue symptoms and infective /septic arthritis. Although this group of rheumatic diseases accounted for 19.1% of the total patients, it does not represent the true burden of this group of rheumatic diseases as many patients with these complains are often seen by general practitioners,orthopaedic surgeons or physiotherapists.

Since this study is based on the patients attending Rheumatology department, SKIMS, it is limited by the use of a bias population.. The population at risk can not be estimated by this study. Moreover ,hospital based studies usually give a lower prevalence rate as patients with mild symptoms do not seek medical attention. Advantage of hospital based study like ours is that it is based on more accurate diagnosis and it gives an indication of the relative incidence of the rheumatic diseases.

Conclusions

The current study was designed as a prospective study on the prevalence of rheumatic diseases and was conducted in the department of internal medicine, division of Rheumatology. The purpose of the study was to find the spectrum of rheumatic diseases in patients attending rheumatology department. The total number of patients in our study was 1738. The mean age of our patients was 40.25 ±14.178 years. The was a predominance of female patients in our study. Rheumatic diseases were seen to be more prevalent in rural patients than urban patients in our study.

Rheumatoid arthritis was the most common rheumatic disease in our study.

This study provides an estimate of the prevalence of various rheumatic diseases in a tertiary care institute. Since this study was a hospital based study, it may not be representative of the actual disease burden in the community. A community study will be more appropriate to determine the actual prevalence of rheumatic diseases in the community.

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