

Pattern of rheumatologic and musculoskeletal disorders and their awareness among patients attending rheumatology clinic

Ayush Malhotra^{1,*}, MK Bhatnagar², Rakesh K. Jagdish³

¹Resident, ²Professor & HOD, ³Assistant Professor, Dept. of Medicine, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India

*Corresponding Author:
Email: memyayush@gmail.com

Abstract

This study was plan to assess the pattern of rheumatologic and musculoskeletal disorders and their awareness among patients attending newly started rheumatology clinic at Santosh medical college and hospital, Ghaziabad. All patients with age 15 years and above with rheumatological diagnosis were included in the study. Detailed history and physical examination done and information regarding the awareness about rheumatological branch, diseases and the commonly used medications were recorded. Out of first 500 cases 39% cases were found of inflammatory joint diseases followed by 22.8% cases of degenerative joint diseases, 15% cases of soft tissue rheumatism, 13.6% cases were of metabolic bone diseases, 8.8% cases of infection related arthritis and only 0.8% cases were of benign hypermobility syndrome (BJHS). Among all parameters, awareness about calcium was maximum (42.52%), followed by awareness for vitamin D (23.68%), NSAIDs awareness (21.36%). Awareness about rheumatology branch was 12.32%. Co morbidities were present in 37.4% of cases. Hypertension (7.6%), anaemia (7%), hypothyroidism (6%), diabetes (5.6%), obesity (2.6%), dyslipidaemia (2.4%), vitamin B 12 deficiency (2.4%) and metabolic syndrome in 2.2% cases. We conclude that inflammatory joint diseases are most common in a specialised rheumatology clinic, followed by degenerative joint and spine diseases, soft tissue rheumatism, and metabolic bone diseases. Patients need more and more public awareness programme to increase their knowledge towards the rheumatology branch and commonly used medicines. Training programmes in rheumatology for physicians should be started at each institution.

Keywords: Awareness, Co-morbidities, Inflammatory joint diseases, Infection related arthritis, Metabolic bone diseases, Osteoarthritis, Pattern of haematological diseases, Rheumatology clinic, Soft tissue rheumatism.

Introduction

Rheumatology is less understood specialty as compared to other subspecialties of internal medicine. Rheumatic disorders are one of the largest health problems and commonest cause of morbidity in the world. Rheumatological disorders are characterized by a large variety of diseases not only inflammatory rheumatic and systemic diseases but also degenerative joint and spine diseases, soft tissue rheumatism and metabolic bone diseases. The prevalence of musculoskeletal disorders varies as shown by various studies in world ranging from 11% to >50% and these conditions represent 28% of disability compensation schemes.^(1,2) In India prevalence of rheumatological complains varies from 18.5% to 23.9% in general population.⁽³⁾ Rheumatology as such in an infant state in India so far even health care workers are not aware of what type of patients a rheumatologist sees. Public and patients awareness is needed as the number of patients of various forms of arthritis and other musculoskeletal diseases are constantly on rise. This study was planned with the aims to assess rheumatologic and musculoskeletal disorders and rheumatological diseases in freshly diagnosed patients coming to specialized rheumatology OPD and their awareness regarding commonly used medicines.

Materials and Methods

This study was a prospective observational study of first 500 patients who attended rheumatology clinic, at Santosh medical college and hospital, Ghaziabad, from March 2016 to March 2017. All patients aged 15 years and above with rheumatological diagnosis were included in the study. Patients with traumatic joint disease and patients below age 15 years were excluded. Detailed history and physical examination done. Informations regarding the awareness about rheumatological branch and the commonly used medications like calcium, vitamin D supplements and non-steroidal anti-inflammatory drugs (NSAIDs) were recorded. Relevant investigations were carried out. Diagnosis of rheumatology diseases were based on the American College of Rheumatology (ACR)/European League Against Rheumatism (EULAR) classification criteria. Some patients having multiple diagnosis, only primary diagnosis and co morbidities were included. The data was analyzed and Percentage of each disease was calculated based on the total number of rheumatology cases included in the study. Ethical approval was obtained from the institutional ethical committee for this study.

Results

Patients were aged from >15 years, with a mean age of 45.59 years. Female constituted 71% of all patients. Patients were grouped separately in the following categories as shown in Table 1.

Table 1: Major categories and pattern of rheumatic patients

S. No.	Major category	Number and percentage	Male	Female	Mean Age (in years)
1.	Inflammatory and autoimmune spine, joint and systemic diseases	195 (39%)	59 (11.8%)	136 (27.2%)	41.8
2.	Degenerative joint and spine diseases	114 (22.8%)	41 (8.2%)	73 (14.6%)	60.2
3.	Soft tissue rheumatism	75 (15%)	18 (3.6%)	57 (11.4%)	43.8
4.	Metabolic bone diseases	68 (13.6%)	15 (3%)	53 (10.6%)	37.9
5.	Infection related joint diseases	44 (8.8%)	12 (2.4%)	32 (6.4%)	40.7
6.	Hypermobility disorder(BJHS)	4 (0.8%)	0	4 (0.8%)	29.2
	Total	500 (100%)	145 (29.2%)	355 (70.8%)	45.6

As the table 1 depicted that out of the total 500 cases 39% cases were related to inflammatory/autoimmune diseases followed by 22.8% cases of degenerative joint diseases, 15% cases of soft tissue rheumatism, 13.6% cases were related to metabolic bone diseases, 8.8% cases of infection related arthritis, 0.8% cases were of benign hypermobility syndrome (BJHS).

Table 2: Pattern of Inflammatory /autoimmune spine, joint and systemic diseases

S. No.	Inflammatory / autoimmune spine, joint and systemic diseases	Number & percentage (N=500)	Male	Female	Mean age in years
1.	Rheumatoid arthritis	112 (22.4%)	17 (3.4%)	95 (19%)	42.6
2.	Spondyloarthritis (SpA-see table 3 for details)	45 (9%)	29 (5.8%)	16 (3.2%)	38.6
3.	Connective tissue diseases (CTD-see table 4 for details)	17 (3.4%)	3 (0.6%)	14 (2.8%)	43.3
4.	Undifferentiated inflammatory arthritis	15 (3%)	7 (1.4%)	8 (1.6%)	42.9
5.	Palindromic rheumatism	3 (0.6%)	0	3 (0.6%)	29.6
6.	Gout	3 (0.6%)	3 (0.6%)	0	53.3
	Total	195 (39%)	59 (11.8%)	136 (27.2%)	41.7

Among Inflammatory/autoimmune spine, joint and systemic diseases rheumatoid arthritis (RA-22.4%) was most common followed by, spondyloarthritis (SpA-9%), Connective tissue diseases (CTD-3.4%), undifferentiated chronic inflammatory arthritis (3%), palindromic rheumatism (0.6%) and gouty arthritis (0.6%). Mean age was found 41.79 years with female preponderance except for gouty arthritis.

Among different Connective Tissue Diseases (CTD), Systemic Lupus Erythematosus (SLE) was the most common in 1% of total study population, followed by undifferentiated CTD (0.6%), sjogren's syndrome (0.4%), systemic sclerosis (0.4%), Mixed Connective Tissue Diseases (MCTD-0.2%), primary vasculitis (0.4%), other diseases like Sarcoidosis in 0.4% cases were seen. Mean age was 38.66 years, with female preponderance except for primary vasculitis and Sarcoidosis. (Table 2)

Table 3: Pattern of spondyloarthritis (SpA) in inflammatory /autoimmune diseases

S. No.	Pattern of spondyloarthritis (SpA)	Number & percentage (N=500)	Male	Female	Mean age in years
1.	Ankylosing spondylitis (AS)	17 (3.4%)	15 (3%)	2 (0.4%)	41.5
2.	Reactive arthritis (ReA)	14 (2.8%)	8 (1.6%)	6 (1.2%)	36.2
3.	Psoriatic arthritis(PsA)	4 (0.8%)	1 (0.2%)	3 (0.6%)	45.2
4.	Inflammatory Bowel Disease (IBD) related	2 (0.4%)	1 (0.2%)	1 (0.2%)	42.5
5.	Undifferentiated SpA	7 (1.4%)	4 (0.8%)	3 (0.6%)	35
6.	JIA SpA variant	1 (0.2%)	1 (0.2%)	0	15
	Total	45 (9%)	30 (6%)	15 (3%)	38.6

Among 45 cases (9%) of spondyloarthritis, ankylosing spondylitis (AS) was most common in 3.4% of cases, followed by reactive arthritis (ReA) in 2.8% cases, undifferentiated SpA (1.4%), psoriatic arthritis (PsA) in 0.8% cases, Inflammatory bowel diseases (IBD) related (0.4%), Juvenile idiopathic arthritis (JIA) with SpA variant in

0.2% of cases. Mean age was 38.66 years, males were predominant in all except in reactive arthritis and undifferentiated SpA where M: F ratio is nearly equal. (Table 3)

Table 4: Pattern of degenerative joint and spine diseases

S. No.	Degenerative joint and spine diseases	Frequency (percentage)	Male (percentage)	Female (percentage)	Mean age in years
1.	Knee osteoarthritis	78 (15.6%)	29 (5.8%)	44 (8.8%)	63.9
2.	Secondary OA	17 (3.4%)	6 (1.2%)	11 (2.2%)	45.1
3.	Spinal OA and related spondylosis	14 (2.8%)	4 (0.8%)	10 (2%)	61.3
4.	Generalized nodular OA	4 (0.8%)	2 (0.8%)	2 (0.4%)	53.5
5.	Hands-1 st CMC joint	1 (0.2%)	0	1 (0.2%)	40
	Total	114 (22.8%)	41 (8.2%)	73 (14.6%)	60.2

Among degenerative joint diseases (22.8% of total study population), knee osteoarthritis was most common in 15.6% of cases, followed by secondary osteoarthritis in 3.4% (secondary to inflammatory joint disease), the spinal osteoarthritis with related spondylosis in 2.8% of cases. Mean age was 60.25 years with Female preponderance. (Table 4)

Table 5: Pattern of Soft tissue rheumatism

S. No.	Soft Tissue Rheumatism	Number and percentage (n-500)	Male	Female	Mean age
1.	Fibromyalgia	27 (5.4%)	2 (0.4%)	25 (5%)	40.1
2.	Non-specific aches and pains	20 (4%)	9 (1.8%)	11 (2.2%)	45.3
3.	Tendinitis/peritendinitis/epicondylitis	8 (1.6%)	3 (0.6%)	5 (1%)	44.6
4.	Planter fasciitis/enthesopathies	7 (1.4%)	0	7 (1.4%)	43.1
5.	Rotator cuff syndrome / frozen shoulder	6 (1.2%)	2 (0.4%)	4 (0.4%)	51.2
6.	Trigger finger (Flexor tenosynovitis)	3 (0.6%)	2 (0.4%)	1 (0.2%)	57.6
7.	Carpal tunnel syndrome	3 (0.6%)	0	3 (0.6%)	36
8.	Bursitis	1 (0.2%)	0	1 (0.2%)	48
	Total	75 (15%)	18 (3.6%)	57 (11.4%)	43.8

Among soft tissue rheumatism (15% of all study population, Fibromyalgia was most commonly seen in 5.4% cases, followed by non-specific aches and pains in 4% of cases. Tendinitis, epicondylitis, planter fasciitis, enthesopathies, rotator cuff syndrome, frozen shoulder, flexor tenosynovitis, carpal tunnel syndrome and bursitis were in less number of cases. Mean age was 43.80 years with female preponderance. (Table 5)

Table 6: Pattern of metabolic bone disease

S.No.	Metabolic bone disease	Number and percentage (n-500)	Male	Female	Mean age in years
1.	Vitamin d deficiency only	40 (8%)	9 (1.8%)	31 (6.2%)	32.2
2.	Osteomalacia	18 (3.6%)	3 (0.6%)	15 (3%)	40.02
3.	Osteoporosis	8 (1.6%)	1 (0.2%)	7 (1.4%)	62.1
4.	Miscellaneous –HOAP	2 (0.4%)	2 (0.4%)	0	38
	Total	68 (13.6%)	15 (3%)	53 (10.6%)	37.9

Among metabolic bone diseases total cases of vitamin D deficiency were 58 (11.6%), vitamin D deficiency only (without any electrolyte or enzyme problem) was most commonly seen in 8% of cases, followed by osteomalacia (vitamin D deficiency with electrolyte or enzyme problem) in 3.6% of cases, followed by osteoporosis in 1.6% of cases, 2 patients (0.4%) were having primary hypertrophic osteoarthropathy (HOAP) one with complete expression and one with incomplete form of primary HOAP. Mean age was 37.97 years with female preponderance. (Table 6)

Table 7: Pattern of Infection related joint diseases

S. No.	Infection related joint diseases	Number and percentage	Male	Female	Mean age in years
1.	Post viral arthralgia	34 (6.8%)	09 (1.8%)	25 (5%)	40.05
2.	Post viral arthritis	09 (1.8%)	2 (0.4%)	7 (1.4%)	44
3.	Hepatitis B related arthritis	01 (0.2%)	1 (0.2%)	0	36
	Total	44 (8.8%)	12 (2.4%)	32 (6.4%)	40.7

Among Infection related joint diseases post-viral arthralgia seen in 6.8% of cases and post viral arthritis were seen in 1.8% of cases due to the chikungunya and chikungunya like viral epidemic seen in August-October 2016 in India. One case (0.2%) of Hepatitis B related arthritis was also seen. Mean age was 40.76 years with overall female preponderance. We did not find any cases of infective arthritis like septic or tubercular arthritis. (Table 7)

Table 8: Pattern of co-morbidities found in the study patients

S.No.	Co morbidities	Number & percentage (n=500)	Male (percentage)	Female (percentage)	Mean age in years
1.	Hypertension (HTN)	38 (7.6%)	9 (1.8%)	29 (5.8%)	57.2
2.	Anemia	35 (7%)	6 (1.2%)	29 (5.8%)	41.2
3.	Hypothyroidism	30 (6%)	6 (1.2%)	24 (4.8%)	44.03
4.	Diabetes (DM)	28 (5.6%)	9 (1.8%)	19 (3.8%)	54.2
5.	Obesity	13 (2.6%)	5 (1%)	8 (1.6%)	56.6
6.	Dyslipidemia	12 (2.4%)	3 (0.6%)	9 (1.8%)	51.9
7.	Vitamin B12 deficiency	12 (2.4%)	3 (0.6%)	9 (1.8%)	40.08
8.	Metabolic syndrome	11 (2.2%)	5 (1%)	6 (1.2%)	46.8
9.	Respiratory Problem like COPD/BA/ILD	08 (1.6%)	5 (1%)	3 (0.6%)	53.7
	Total	187 (37.4%)	51 (10.2%)	136 (27.2%)	49.4

Medical co morbidities were present in 37.4% of cases. Hypertension (HTN) was most common in 7.6% of cases, followed by anaemia in 7% cases, then hypothyroidism in 6% cases, diabetes in 5.6% of cases obesity in 2.6% cases, Dyslipidaemia in 2.4% cases, vitamin B 12 deficiency in 2.4% cases, metabolic syndrome in 2.2% cases respiratory diseases like Chronic obstructive pulmonary diseases (COPD), Bronchial Asthma (BA), interstitial lung diseases (ILD) in 1.6% cases. Combining all cardio metabolic risk factors like HTN, DM, Obesity, Dyslipidaemia and metabolic syndrome, constituted 20.4% cases. (Table 8)

Table 9: Pattern of various awareness parameters

Questionnaire about Rheumatology branch			
S. No.	Questions asked from patients	Responses	
		Yes	No
1.	Have you heard about Rheumatology specialty? What type of patients rheumatologists see? (joint, multisystem, autoimmune problems)	71 (14.2%)	429
2.	What is difference from orthopedics?	97 (19.4%)	403
3.	What are the causes of Rheumatological disorders? (Genetic, Autoimmune, environmental)	43 (8.6%)	457
4.	Who are more affected with rheumatological problems?(Age/Sex/Habits)	56 (11.2%)	444
5.	Tell at least 3 Rheumatological problems?	41 (8.2%)	459
Questionnaire about Non-steroidal anti-inflammatory drugs(NSAIDs) available over the counter OTC)			
1.	What do you know about OTC painkillers / NSAID's (oral, injectable, local)?	137 (27.4%)	363
2.	Name at least 3OTC NSAID's you know or you have used?	118 (23.6%)	382
3.	Tell at least 3 conditions Where you should uses NSAID's/painkiller?	156 (31.2%)	344
4.	Tell at least 3 Side effects of NSAID's/painkiller?	87 (17.4%)	413

5.	Tell at least 2 alternative pain-killers other than NSAIDs?	36 (7.2%)	464
Questionnaire about calcium			
1.	Tell at least 3 benefits of Calcium for health?	259 (51.8%)	241
2.	Tell at least 3 dietary sources of Calcium?	351 (70.2%)	149
3.	Tell Name of at least 3 OTC calcium products you have know or you have used?	67 (13.4%)	433
4.	Tell about the Effects of Calcium deficiency?	233 (44.6%)	267
5.	Tell about the causes of calcium deficiency in our body?	153 (30.6%)	347
Questionnaire about vitamin D			
1.	Tell at least 2 benefits of vitamin D in health? How do you come to know about it?	169 (33.8%)	331
2.	Tell at least 3 sources of vitamin D? (diet, environment, other)	107 (21.4%)	393
3.	Tell at least 2 the symptoms of vitamin D deficiency?	72 (14.4%)	428
4.	Who needs more vitamin D? (age/sex/ other)	201 (40.2%)	299
5.	Tell at least 2 causes of vitamin D deficiency?	43 (8.6%)	457

Among all parameters, awareness about calcium was maximum (42.52%), followed by awareness for vitamin D (23.68%), NSAIDs awareness (21.36%) and least for rheumatology branch (12.32%) this is after we have distributed the rheumatology branch information pamphlets about our clinic before start of the clinic. (Table 9)

Discussion

In the present study, commonly occurring rheumatological diseases are-inflammatory diseases (39%) while in the study of Boulos et al⁽⁴⁾ inflammatory diseases were in >50% of patients. In study by Miedema et al⁽⁵⁾ in 50.5% of patients, these differences can possibly be explained by different inclusion criteria in their study. In present study among inflammatory arthritis rheumatoid arthritis (RA) was most common in 22.4% of cases with female preponderance and mean age 42.68 years, which is similar to study of Ranwa et al⁽⁶⁾ (RA 35.67%), Miedema et al (RA was 26.5%) and Zink et al⁽⁷⁾ (RA 51%). Spondyloarthritis (SpA) was found in 9% of cases which is comparable to studies by Vanhoof et al⁽⁸⁾ (SpA-7% in new cases) and Miedema et al (AS was 5.1%, PsA was 3.6%) but different from study by Oguntona et al⁽⁹⁾ where SpA was seen in only 0.8% cases. Connective tissue diseases (CTD) was seen in 3.4% of cases of which SLE was most common in 1% of cases which is higher than study by J Vanhoof et al (0.4%) but lower than the study by Oguntona et al (2.1%), from India AN Malaviya⁽¹⁰⁾ showed very low prevalence of lupus i.e.14-60 per 1000000 in general population. Sjogren's syndrome, systemic sclerosis and vasculitis (Granulomatosis with polyangiitis (GPA) each were seen in 0.4 % cases in our study which is lower than Oguntona et al (1.3%). However Dutch study by Miedema et al reported CTD in 8.1% of cases. This may be due to ethnical differences.

Osteoarthritis was most common degenerative disease in 22.8% of patients which is comparable to study by Miedema et al (degenerative diseases 18%) but much lower than the data reported by J Vanhoof et al (45%), Oguntona et al (45.8%), Ranwa B L et al (51.4%).

Soft tissue rheumatism (15% of all study population), is defined by non-articular or periarticular

problems in which pathology is outside the synovial lining e.g. bursae, muscles, tendons etc. Fibromyalgia was most commonly seen in 5.4% cases, followed by non specific aches and pains in 4% of cases which is similar to Indian study by Ranwa et al (fibromyalgia in 9% cases, ill defined aches and pain in 4.2% cases) and much lower than study by Miedema et al (28%), study by Oguntona et al (34.3%) and J Vanhoof et al (51%).

Metabolic bone diseases accounts for 13.6% of total patients in our study of which vitamin D deficiency was in 11.6% (8% patients having vitamin D deficiency only and 3.6% patients with osteomalacia) which contradict with reports by Ritu G⁽¹¹⁾ who showed the prevalence of vitamin D deficiency is 70-100% in general population of Indian subcontinent, this can be explained by the fact that our patients being hospital based and might have taken calcium and vitamin D supplementation.

Among Infection related arthritis (8.8 %) post viral arthralgia (6.8%) and post viral arthritis (2%) were seen mostly due to the chikungunya and chikungunya like viral epidemic seen in August-September 2016 in India.⁽¹²⁾ We did not find any cases of infective arthritis like septic or tubercular arthritis.

Among co-morbidities, a very high association of cardio-metabolic risk factors seen in 20.4% of cases, with hypertension and diabetes in predominance followed by hypothyroidism in 6% of cases. This indicate Rheumatological patients are at high risk of cardiac problem due to accumulation of risk factors and also chronic inflammation leads to endothelial dysfunction and accelerated atherosclerosis.⁽¹³⁾ Also high association of hypothyroidism in these patients can add to dyslipidemia.

Among all parameters awareness about calcium was maximum (42.52%), followed by awareness for vitamin D (23.68%), NSAIDs awareness (21.36%) and

least for rheumatology branch (12.32%) this is after we have distributed the rheumatology branch information pamphlets about our clinic before start of the clinic. So awareness/information about the rheumatology branch was very poor among the patients and also about the commonly used medicines in rheumatology. W. Sulaiman et al⁽¹⁴⁾ from Malaysia reported 45.8% patients not aware of any NSAIDs side effect status in a established rheumatologic clinic, current report by Durga et al⁽¹⁵⁾ highlighted this problem also. There is a marked imbalance between number of rheumatologist and the concerned disease burden at present scenario.⁽¹⁵⁾ Despite rheumatologic disorders affecting 18.5% - 23.9% of the population, rheumatology in India is still in its infancy. Therefore, there is a dare need of increasing awareness, training programmes for doctors in this developing field of medicine.

Conclusion

This study provides an estimate of the pattern of rheumatic diseases in a rheumatology clinic of Ghaziabad. A community study will however be more appropriate to determine the actual prevalence of rheumatic diseases in the community. We conclude that inflammatory joint diseases are most common, followed by degenerative joint and spine diseases, soft tissue rheumatism, and metabolic bone diseases. Patients need more and more public awareness programme to increase their knowledge towards the rheumatology branch and commonly used medicines. Training programmes for physicians may be started in rheumatology at each institution.

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