

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

Abstract

Rheumatological disorders are characterized by a wide spectrum of diseases like inflammatory diseases with articular, extra articular and systemic manifestations, degenerative joint and spine diseases, soft tissue rheumatism and metabolic bone diseases still rheumatology is less understood sub-specialty of internal medicine. We planned this study 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 in first 500 new cases. 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 like calcium, vitamin D supplements and non-steroidal anti-inflammatory drugs (NSAIDs) were recorded. Out of first 500 cases 39% cases were 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 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%) and least for rheumatology branch (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. All cardio metabolic risk factors constituted 20.4% of 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. Cardio metabolic risk factors are predominately associated with rheumatological patients and therefore we suggest that proactive screening of these factors should be routinely done for prevention of complications. Patients need more and more public awareness programme to increase their knowledge towards the rheumatology branch and commonly used medicines. Training programmes for physicians should be stated in rheumatology at each institution.

Keywords: pattern of haematological diseases, rheumatology clinic, inflammatory joint diseases, osteoarthritis, soft tissue rheumatism, infection related arthritis, metabolic bone diseases, awareness, co-morbidities

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Aim

To assess the pattern of rheumatologic and musculoskeletal disorders and their awareness regarding calcium, vitamin D, NSAIDs, use and rheumatological diseases in freshly diagnosed patients attending rheumatology clinic in Santosh medical college and hospital, Ghaziabad.

Introduction

India is world's second largest population with rapidly developing medical tourism in various medical and surgical fields but rheumatology is still 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. Musculoskeletal symptoms can also be due to metabolic, endocrine, neoplastic and infectious conditions. The prevalence of musculoskeletal disorders varies between different studies from world ranging from 11% to more than 50% and these conditions represent 28% of disability compensation schemes^{1,2} and in Indian studies 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 the needed as the number of patients of various forms of arthritis and other musculoskeletal diseases are constantly on rise. This may be due to multiple factors for increasing numbers like 1) life style changes-increasing stress, indoor and sedentary life style. 2) Environmental factors-like increasing pollution in air, water and soil.

3) Certain genetic predispositions. 4) Increasing awareness in public to seek medical attention for these problems, rather than ignoring them. 5) improving medical knowledge and investigation facilities in current years. Purpose of the study is to discuss about the pattern of patient coming to specialized rheumatology OPD and their awareness regarding commonly used medicines and about the rheumatology branch in general.

Materials and methods

This was prospective study of first 500 diagnosed patients who attended a hospital based newly started outpatient rheumatology clinic, at Santosh medical college and hospital, Ghaziabad, from march 2016 to march 2017. All patients with age 15 years and above with rheumatological diagnosis were included in the study. Patients with traumatic joint disease and all patients below age 15 years were excluded. Detailed history and physical examination were done. Relevant investigations were carried out. Since it was newly started clinic information regarding the awareness about rheumatological branch, diseases and the commonly used medications like calcium, vitamin D supplements and non-steroidal anti-inflammatory drugs (NSAIDs) were also recorded. Diagnosis of rheumatology diseases were based on the American college of rheumatology (ACR)/ European league against rheumatism (EULAR) classification criteria. Some patients having multiple diagnoses, only primary diagnosis and co morbidities were included. Simple statistical calculations were employed to determine the percentages and patterns of the rheumatological disorders. Percentage of each disease was calculated based on the total number of rheumatology cases included in the study. Ethical approval was obtained for this research work.

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.

Out of first 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).

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 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).

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).

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).

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).

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.

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).

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).

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).

Table 1 Major categories and pattern of first 500 rheumatic patients seen

S.N.	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%)	41.79
2.	Degenerative joint and spine diseases	114 (22.8%)	41 (8.2%)	73 (14.6%)	60.25
3.	Soft tissue rheumatism	75 (15%)	18 (3.6%)	57 (11.4%)	43.80
4.	Metabolic bone diseases	68 (13.6%)	15 (3%)	53 (10.6%)	37.97
5.	Infection related joint diseases	44 (8.8%)	12 (2.4%)	32 (6.4%)	40.76
6.	Hypermobility disorder (BJHS)	4 (0.8%)	0	4 (0.8%)	29.25
	Total	500 (100%)	146 (29.2%)	354 (70.8%)	45.59 years

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

S.N.	Inflammatory / autoimmune spine, joint and systemic diseases	Number and percentage from total study population (n500)	Male	Female	Mean age in years
1.	Rheumatoid arthritis	112(22.4%)	17(3.4%)	95(19%)	42.68
2.	Spondyloarthritis(SpA-see table 3 for details)	45(9%)	29(5.8%)	16(3.2%)	38.67
3.	Connective tissue diseases (CTD-see table 4 for details)	17(3.4%)	3(0.6%)	14(2.8%)	43.36
4.	Undifferentiated inflammatory arthritis	15(3%)	7(1.4%)	8(1.6%)	42.9
5.	Palindromic rheumatism	3(0.6%)	0	3(0.6%)	29.60
6.	Gout	3(0.6%)	3	0	53.34
	Total	195(39%)	59(11.8%)	136(27.2%)	41.79 years

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

S.N.	Pattern of spondyloarthritis (SpA)	Number and percentage from total study population (N-500)	Male	Female	Mean age in years
1.	Ankylosing spondylitis (AS)	17 (3.4%)	15(3%)	2(0.4%)	41.58
2.	Reactive arthritis (ReA)	14 (2.8%)	8(1.6%)	6(1.2%)	36.21
3.	Psoriatic arthritis (PsA)	4 (0.8%)	1(0.2%)	3(0.6%)	45.25
4.	Inflammatory Bowel Disease (IBD) related	2 (0.4%)	1(0.2%)	1(0.2%)	42.50
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%)	38.66 years

Table 4 Pattern of degenerative joint and spine diseases

S.N.	Degenerative joint and spine diseases	Number and percentage	Male	Female	Mean age in years
1.	Knee osteoarthritis	78 (15.6%)	29(5.8%)	44(8.8%)	63.97
2.	Secondary OA	17(3.4%)	6(1.2%)	11(2.2%)	45.11
3.	Spinal OA and related spondylosis	14(2.8%)	4(0.8%)	10(2%)	61.32
4.	Generalized nodular OA	4(0.8%)	2(0.8%)	2(0.4%)	53.50
5.	Hands-1 st CMC joint	1(0.2%)	0	1(0.2%)	40
	Total	114(22.8%)	41(8.2%)	73(14.6%)	60.25 years

Table 5 Pattern of Soft tissue rheumatism

S.N.	Soft Tissue Rheumatism	Number and percentage (n-500)	Male	Female	Mean age
1.	Fibromyalgia	27(5.4%)	2(0.4%)	25(5%)	40.16
2.	Non specific aches and pains	20(4%)	9(1.8%)	11(2.2%)	45.30
3.	Tendinitis/peritendinitis/epicondylitis	8(1.6%)	3(0.6%)	5(1%)	44.62
4.	Planter fasciitis/enthesopathies	7(1.4%)	0	7(1.4%)	43.14
5.	Rotator cuff syndrome / frozen shoulder	6(1.2%)	2(0.4%)	4(0.4%)	51.20
6.	Trigger finger (Flexor tenosynovitis)	3(0.6%)	2(0.4%)	1(0.2%)	57.66
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%)	43.80 years

Table 6 Pattern of metabolic bone disease

S.N.	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%)	32.22
2.	Osteomalacia	18(3.6%)	3(0.6%)	15(3%)	40.023
3.	Osteoporosis	8(1.6%)	1(0.2%)	7(1.4%)	62.12
4.	Miscellaneous –HOAP	2(0.4%)	2(0.4%)	0	38
	Total	68(13.6%)	15(3%)	53(10.6%)	37.97 years

Table 7 Pattern of Infection related joint diseases

S.N.	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%)	40.76 years

Table 8 Pattern of co morbidities found in the study patients

S.N.	Co-morbidities	Number and percentage (n-500)	Male	Female	Mean age in years
1.	Hypertension (HTN)	38 (7.6%)	9(1.8%)	29(5.8%)	57.26
2.	Anemia	35(7%)	6(1.2%)	29(5.8%)	41.26
3.	Hypothyroidism	30(6%)	6(1.2%)	24(4.8%)	44.03
4.	Diabetes (DM)	28(5.6%)	9(1.8%)	19(3.8%)	54.25
5.	Obesity	13(2.6%)	5(1%)	8(1.6%)	56.69
6.	Dyslipidemia	12(2.4%)	3(0.6%)	9(1.8%)	51.91
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%)	46.81
9.	Respiratory Problem like COPD/BA/ILD	08(1.6%)	5(1%)	3(0.6%)	53.75
	Total	187(37.4%)	51(10.2%)	136(27.2%)	49.44 years

Table 9 Pattern of various awareness parameters

Questionnaire about Rheumatology branch			
S.N.	Questions asked from patients	Response	
		Response 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
	TOTAL AWARENESS-n-2500	308(12.32%)	2192(87.68%)
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 3 OTC 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 painkillers other than NSAIDs?	36(7.2%)	464
	TOTAL AWARENESS N-2500	534(21.36%)	1966(78.64%)
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
	TOTAL AWARENESS N-2500	1063(42.52%)	1437(57.48%)
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
	TOTAL AWARENESS N 2500	592(23.68%)	1908 (78.72%)

Discussion

In the present study, most commonly occurring rheumatological disease groups in order of frequency 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.⁵ (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.⁵ (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 Malaviya¹⁰ 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 population, which is lower than Oguntona et al (1.3%). However Dutch study by Miedema et al.⁵ 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.⁸ (45%), Oguntona et al.⁹ (45.8%), Ranwa B L et al.⁶ (51.4%).

Soft tissue rheumatism (15% of all study population) is defined by non-articular or periarticular problems in which pathology are 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.⁶ (fibromyalgia in 9% cases, ill defined aches and pain in 4.2% cases) and much lower than study by Miedema et al.⁵ (28%), study by Oguntona et al.⁹ (34.3%) and J Vanhoof et al.⁸ (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 G¹¹ 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 indicates Rheumatological patients are at high risk of cardiac problem due to accumulation of risk factors and 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. Therefore, awareness/ information about the rheumatology branch were very poor among the patients and 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 scenario¹⁵. 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 tertiary institution with a newly started rheumatology clinic in Ghaziabad. It can serve as a base-line research on which future researchers could build on as similar studies from India are scarcely available. 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 in a specialised rheumatology clinic, followed

by degenerative joint and spine diseases, soft tissue rheumatism, and metabolic bone diseases. Cardio metabolic risk factors are predominately associated with rheumatological patients and therefore we suggest that proactive screening of these factors should be routinely done for prevention of complications. Patients need more and more public awareness programme to increase their knowledge towards the rheumatology branch and commonly used medicines. Training programmes for physicians should be stated in rheumatology at each institution.

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None.

Conflict of interest

Authors declare there is no conflict of interest in publishing the articles.

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