

**STUDY OF SPECTRUM OF RHEUMATIC DISEASES IN  
THE DEPARTMENT OF PHYSICAL MEDICINE & REHABILITATION,  
CHITTAGONG MEDICAL COLLEGE HOSPITAL, BANGLADESH**

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**Abstract**

Rheumatic disorders are one of the largest health problems in the world in both developed and developing countries. They are among the commonest causes of morbidity in the world. 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. In Bangladesh, a study on the prevalence of rheumatic diseases in the adult population based on WHO-ILAR-COPCORD (Community Oriented Programme for the Control of the Rheumatic Diseases) shows that the point prevalence of musculoskeletal complaints were 26.1% and lifetime prevalence was 32.2%. The present descriptive study was designed to find out the spectrum of various rheumatic disorders of patients attended in the rheumatology clinic of Physical Medicine & Rehabilitation Department, Chittagong Medical College Hospital, Bangladesh during a period from January 2005 to June 2006. Degenerative joint diseases were much more common (44.53%) than inflammatory arthropathies (11.03%). Nonarticular disorders comprised 41.81% of cases. Osteoarthritis (vertebral and peripheral), adhesive capsulitis and rheumatoid arthritis were

common specific entities. Prolapsed lumbar intervertebral disc accounted for 7.74 % of cases. All these findings emphasize need for increased awareness among physicians about common rheumatic disorders and the rehabilitation issues.

**Key words:** rheumatic disorder; spectrum; teaching hospital

**Introduction**

Rheumatic disorders are one of the largest health problems in the world in both developed and developing countries<sup>1</sup>. Musculoskeletal symptoms are primary feature of many multisystem illness, not only in the autoimmune joint and connective tissue diseases but also metabolic, endocrine, neoplastic, and infectious condition<sup>2</sup>. They are among the commonest causes of morbidity in the world. 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<sup>1,3</sup>. In Bangladesh a study on the prevalence of rheumatic diseases in the adult population based on WHO-ILAR-COPCORD (Community Oriented Program for the Control of the Rheumatic Diseases) showed that the point prevalence of musculoskeletal complaints were 26.1% and lifetime prevalence was 32.2% with a prevalence of 8.7% in the age group 15-24 years and 65.3% in 65 and above age group<sup>4</sup>. There is also a great socio-economic impact of musculoskeletal disorders on the society. In the developed world, it comes in the form of huge numbers of lost working days, vast amount of compensatory disability allowances, cost of drugs (non-steroidal anti-inflammatory drugs and disease-modifying antirheumatic drugs) and massive reduction of the work output owing to increased mortality and morbidity. The largest component of this cost is hospitalizations (37%), physician's visits (23%), and prescriptions (16%)<sup>5</sup>. Rheumatological disorders are also common causes of morbidity, disability and work loss in rural and urban communities of developing and underdeveloped countries of Asia,

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Africa and Latin America, resulting in colossal economic loss for those nations<sup>6</sup>. A large proportion of patients with musculoskeletal diseases require management in the department of Physical Medicine and Rehabilitation. The number of patient attending in the department of Physical Medicine and Rehabilitation is increasing day by day and most of the patients have been suffering from different rheumatological disorders. Rehabilitation of patients with rheumatologic disorders is a major concern for physiatrist in their day-to-day practice. The study is designed to give emphasis on the prevalent of rheumatological disorder in a teaching hospital where tertiary level of patient's care has been provided. The aim of the study is to examine the rheumatic disease profile of patients visiting rheumatology clinic of Physical Medicine and Rehabilitation Department, Chittagong Medical College Hospital (CMCH), to reveal the various epidemiological aspects of the commonly occurring rheumatological disorders and to develop a strategic plan for the health management to encounter the huge burden of this kind of disease.

#### Materials & methods

Patient attending in the rheumatology clinic of Physical Medicine and Rehabilitation Department, CMCH between January 2005 and June 2006 were included in this study. Information was obtained from history and clinical examination to make a clinical diagnosis. Investigations were tailored to the need of the individual case. They were performed in selected cases, either for specific diagnosis, for assessment of disease activity and for rational planning & modification of treatment.

#### Results

A total 8975 patients were studied during the study period. Of them 5131(57.16%) were male and 3844(43.84%) were female. Male-female ratio being 1.33:1. Table I shows frequency and sex distribution of major categories. Around 55.56% of the cases presented with articular symptoms, 44.53% of the patients had degenerative and 11.03% had inflammatory joint diseases. In 0.71% cases articular manifestations represented part of a multisystem disorder. Among articular disorders, degenerative diseases were much more common than the inflammatory disorders (Table I).

Lumbar spondylosis was the commonest lesion (29.30%) followed by peripheral osteoarthritis (29.30 %) and cervical spondylosis (23.77 %) of the

**Table I:** Major categories of rheumatic disorders (n=8975)

Major categories	Number	Percent of total	Male (percent)	Female (percent)
Articular disorders	4986	55.56	2957 (59.30%)	2029 (40.70%)
Non-inflammatory	3996	44.53	2474 (61.91%)	1522 (38.09)
Inflammatory	990	11.03	483 (48.78%)	507 (51.22)
Soft tissue rheumatism	3753	41.81	2085 (55.55%)	1668 (44.45%)
Disorders of bone	191	2.13	83 (43.45%)	108 (56.55%)
Multisystem disorders	45	0.50	06 (13.33%)	39 (86.67%)
Total	8975	100	5131 (57.16%)	3844 (43.84%)

degenerative diseases. 7.74 % cases were designated as cases of PLID because of the presence of features of lumbar root involvement (e.g. sciatica like distribution, positive Lasegue's sign and / or signs of neurological deficit) and absence of radiological evidence of spondylosis, tuberculosis, malignancy etc. MRI confirmation was obtained only in few cases.

Seronegative spondyloarthritis (SpA) group (all together) was the most common inflammatory arthritis observed in 5.22 % of total cases followed by rheumatoid arthritis (RA) (4.09 %). Ankylosing spondylitis (AS) was the commonest seronegative disease (28.89% of all inflammatory arthritis) followed by undifferentiated SpA (16.16%). Reactive arthritis, inflammatory bowel disease (IBD) related arthritis and psoriatic arthritis were evaluated in 2.32% cases. Juvenile arthritis (juvenile idiopathic arthritis, JIA and juvenile onset AS) and gout were diagnosed in 9.08% and 3.2% cases respectively (Table II).

Ankylosing spondylitis and undifferentiated spondyloarthritis (uSpA) were 5.8 and 1.16 times more common respectively in males than in females whereas rheumatoid arthritis and juvenile arthritis were 4.49 and 2.46 times more common respectively in females than in males.

Nonspecific back pain was the commonest (59.95 %) of specific disorders included in soft tissue rheumatism, followed by adhesive capsulitis of shoulder (25.33%), plantar fasciitis (3.65%),

tendinitis/tenosynovitis (3.46 %), tennis elbow (2.77 %) enthesitis (2.29%), Complex regional pain syndrome (1.15%) and fibromyalgia (1.12%). Tendinitis /tenosynovitis/ enthesitis were characteristically common among males whereas fibromyalgia was notably more common among females (Table III).

**Table II:** Distribution of various articular disorders

Name of diseases	Number	Percent	Male	Female
<b>NON-INFLAMMATORY</b>	3996	44.53*	2474	1522
Lumbar spondylosis	1171	29.30	756 (64.56%)	415 (35.43%)
Peripheral osteoarthritis	1133	28.35	693 (56.39%)	440 (43.60%)
Cervical spondylosis	950	23.77	570 (60%)	380 (40%)
Lumbago sciatica / PLID	695	17.39	440 (63.30%)	255 (36.69%)
Spondylolisthesis	29	0.72	11 (37.93%)	18 (62.08%)
Chondromalacia patellae	14	0.35	2 (14.28%)	12 (85.72%)
Diffuse idiopathic skeletal hyperostosis (DISH)	4	0.1	2 (50%)	2 (50%)
<b>INFLAMMATORY</b>	990	11.03*	483 (48.78%)	507 (51.21%)
<b>Idiopathic \ autoimmune</b>				
Rheumatoid arthritis	357	36.06	65 (18.20%)	292 (81.80%)
Ankylosing spondylitis	286	28.89	244 (85.31%)	42 (14.69%)
uSpA	160	16.16	86 (53.75%)	74 (46.25%)
Juvenile arthritis (JIA and Juvenile AS)	97	9.80	28 (28.86%)	69 (71.14%)
Psoriatic arthritis / IBD related arthritis/ reactive arthritis	23	2.32	16 (69.56%)	7 (30.44%)
<b>Infective</b>				
Pyogenic	8	0.85	5 (62.5%)	3 (37.5%)
Tuberculous	23	2.32	16 (69.56%)	7 (30.44%)
Viral	4	0.4	2 (50%)	2 (50%)
<b>Crystal induced</b>				
Gout	32	3.2	21 (65.62%)	11 (34.38%)

\* Percent of total patients

**Table III:** Distribution of soft tissue rheumatism

Soft tissue rheumatism	Number	Percent	Male	Female
Nonspecific back pain	2250	59.95	1278 (56.8%)	972 (43.2%)
Adhesive capsulitis	951	25.33	516 (54.25%)	435 (45.74%)
Plantar fasciitis	137	3.65	81 (59.12%)	56 (40.87%)
Tendinitis / tenosynovitis	130	3.46	58 (44.62%)	72 (55.38%)
Tennis elbow	104	2.77	65 (62.5%)	39 (37.5%)
Enthesitis	86	2.29	57 (66.27%)	29 (33.73%)
CRPS	43	1.15	20 (46.52%)	23 (53.58%)
Fibromyalgia	42	1.12	3 (7.14%)	39 (92.85%)
Golfer's elbow	10	0.27	7 (70%)	3 (30%)
<b>Total</b>	<b>3753</b>	<b>100</b>	<b>2085 (55.55%)</b>	<b>1668 (44.45%)</b>

**Table IV:** Incidence of disorders of bony skeleton

Name of diseases	Number	Percent	Male	Female
Cervical rib syndrome	13	6.80	10 (76.92%)	3 (23.07%)
Coccygodynia	16	8.37	8 (50%)	8 (50%)
Osteoporosis	147	76.93	56 (38.10%)	91 (61.90%)
Osteitis condensans illi	8	4.18	4 (50%)	4 (50%)
Congenital anomalies	07	4.00	5 (71.42%)	2 (28.58%)
<b>Total</b>	<b>191</b>	<b>2.13</b>	<b>83 (43.45%)</b>	<b>108 (56.55%)</b>

**Table V:** Incidence of multisystem disorders

Name of diseases	Number	Percent	Male	Female
Systemic lupus erythematosus (SLE)	19	42.22	0 (0%)	19 (100%)
Progressive systemic sclerosis	1	2.22	0 (0%)	1 (100%)
Rheumatic fever	9	20	5(55.56%)	4(44.44%)
Dermatomyositis	3	6.66	0 (0%)	3 (100%)
Mixed connective tissue disorder (MCTD)	4	8.88	0 (0%)	4 (100%)
Sjögren's syndrome	2	4.44	0 (0%)	2 (100%)
Polymyalgia rheumatica	7	15.55	1 (14.28%)	6 (85.71%)
<b>Total</b>	<b>45</b>	<b>0.506</b>	<b>6(13.33%)</b>	<b>39(86.67%)</b>

Multisystem disorders, in general, uncommon comprising 0.71% of all patients. Systemic lupus erythematosus (SLE) was the commonest among them followed by dermatomyositis (DM) and mixed connective tissue disorder (MCTD). Table VI shows common rheumatologic disorders in order of frequency.

**Table VI:** Common rheumatic disorders (in order of frequency) (n= 8975)

Name of diseases	Number	Percent of total	Male	Female
Nonspecific back pain	2250	25.06	1278 (56.8%)	972 (43.2%)
Lumbar spondylosis	1171	13.04	756 (64.56%)	415 (35.43%)
Peripheral osteoarthritis	1133	12.62	693 (56.39%)	440 (43.60%)
Adhesive capsulitis	951	10.59	516 (54.25%)	435 (45.74%)
Cervical spondylosis	950	10.58	570 (60%)	380 (40%)
Lumbago sciatica/ PLID	695	7.74	440 (63.30%)	255 (36.69%)
RA	357	4.09	65 (18.20%)	292 (81.80%)
AS	286	3.18	244 (85.31%)	42 (14.69%)
uSpA	160	1.78	86 (53.75%)	74 (46.25%)
Osteoporosis	147	1.63	56 (38.10%)	91 (61.90%)

### Discussion

The prevalence of rheumatological diseases in developing countries is mostly unknown. The present study was a small-scale hospital-based study done in a tertiary care hospital at Chittagong, Bangladesh. Therefore, the present study did not reflect the true prevalence or incidence of each rheumatological disorder in the general community of Bangladesh, as compared to similar WHO-ILAR COPCORD studies done in our country and elsewhere in the world. Moreover, the small sample size and short duration of time in which the study was carried out with limited diagnostic facilities were the other shortcomings of the present study. Studies, which allow comparison of data within similar communities of other countries, have the potential to provide insight into the etiology of diseases. In the current study, most commonly occurring disease groups in order of frequency are:

non-inflammatory articular disorder (44.53%), soft tissue rheumatism (41.41%), inflammatory arthritis (11.03%), disorder of bone (2.06%) and connective tissue diseases (0.50%). These findings were in conformity with a community based rheumatologic outpatient study done by Vanhoof et al in Belgium where they showed that 69% of all patients were female. Inflammatory joint and spine diseases were diagnosed in 42% of all patients (including 5% with connective tissue diseases), soft tissue rheumatism in 37%, degenerative joint and spine diseases in 36%, and metabolic bone diseases in 17% of all patients<sup>7</sup>.

In soft tissue rheumatism group, the number of patients was documented as follows: nonspecific back pain (2250), adhesive capsulitis (951), plantar fasciitis (137), tendinitis/tenosynovitis (130), tennis elbow (104), enthesitis (86), CRPS (43), Fibromyalgia (42), golfer's elbow (10).

In this group, nonspecific back pain (59.95%) is the most common disease. Fibromyalgia (1.12%) was the most common rheumatological disorder predominantly seen among women. In the Western hemisphere, White et al showed in a Canadian population, the prevalence of fibromyalgia to be 0.5–5%<sup>8</sup>. In local populations, fibromyalgia (F: M = 13: 1). A population-based study showed the overall point prevalence of musculoskeletal pain was 26.3%. The most common rheumatic disorders were osteoarthritis of the knees, non-specific low back pain, lumbar spondylosis, fibromyalgia, and soft tissue rheumatism<sup>9</sup>. COPCORD stage I study was carried out in 16 groups in the Trung Liet Commune, Dong Da District, Hanoi City, Vietnam, and showed that the prevalence of musculoskeletal pain was 14.9%. The most common musculoskeletal complaints were knee pain 18.2%, low back pain 11.2%, and soft tissue disorder 15.4%<sup>10</sup>. The female preponderance of soft tissue rheumatism was a worldwide feature. It is because of multiple factors including psychiatric and central nervous system factors, described by Goldenberg<sup>11</sup>.

In the inflammatory arthritis group, rheumatoid arthritis (357 patients) and juvenile idiopathic arthritis (97 patients) were noted. Rheumatoid arthritis was the most common inflammatory arthritis (36.06%), more common among women than in men (4.5: 1). To determine the prevalence rates of musculoskeletal disorders in a rural population of Thailand, 2463 rural subjects were

studied by Chaiamnuay et al and low prevalence of rheumatoid arthritis and seronegative spondyloarthritis were found to be 0.12% in each disease<sup>12</sup>. A similar WHO-ILAR-COPCORD study done in India by Chopra A et al showed the prevalence of rheumatoid arthritis was 0.5%, which was the highest ever reported from an Asian rural COPCORD study<sup>13</sup>. This difference in this study might be accounted for by the referral of patient with arthritis from periphery and from other department of the hospital. Hilly area around Chittagong may be a cause, as substantiated by different studies done in China and Pakistan, where rheumatological disorders were more commonly seen in northern than southern populations around the hills<sup>14,15</sup>. Apart from these factors, genetic susceptibility may be the other contributing factor for a high prevalence of rheumatoid arthritis.

Systemic lupus (19 patients), progressive systemic sclerosis (1), mixed connective tissue disease (4) and polymyalgia rheumatica (7) accounted for 0.50 % of total cases which were markedly less compared to other groups of rheumatological disorders. Systemic lupus in the present study was only 0.21%, exclusively seen in women. A similar, although retrospective, hospital-based study on Chinese patients with systemic lupus erythematosus done in medical clinics of Tuen Mun Hospital Hong Kong by Mok et al showed systemic lupus was a fairly common rheumatic disease among southern Chinese in Hong Kong, with an estimated point prevalence of 0.06% (0.1% among women)<sup>16</sup>. Osteoarthritis, (1133 patients) were the most common degenerative disorders of bone and cartilage. The ratio of osteoarthritis of knee, hip and hand as a whole in men and women was 1.57: 1. Comparable results were available from a large population-based study in a similar developing country on 1997 adult Pakistani patients distributed evenly between poor rural and poor urban communities and relatively affluent urban people, done by Farooqi et al.<sup>15</sup> Least common disease was gout (3.02 %), the only metabolic disorder documented having male preponderance. Male and female ratio was 1.9:1. Nonspecific low back pain (2250), Lumbar spondylosis (1171), Lumbago sciatica/ PLID (695) and lumbar spondylolisthesis (29) were four main causes of low back pain, together comprising 45.78% of our patients.

Cervical spondylosis and all types of shoulder joint

pain syndromes comprised 10.58 % and 10.59 %, respectively of all patients, in the present study. To assess the prevalence of cervical spondylosis and musculoskeletal symptoms among coolies, a cross-sectional study was performed in Narayanganj city, Bangladesh, on a random sample of 98 male porters by Mahbub et al. It showed considerably higher prevalence of cervical spondylosis among male porter (39.8%)<sup>17</sup>. The preponderance of the cervical and shoulder joint involvement may be due to their manual labour. In the present study, the seronegative spondyloarthropathy group comprised of ankylosing spondylitis (286 patients), uSpA (160 patients), and psoriatic arthritis/reactive/IBD related arthritis (23 patients). Ankylosing spondylitis (3.18%) cases were preponderance among the young adult. A similar hospital-based study on 150 patients of ankylosing spondylitis done in the Department of Rheumatology and Immunology, Tan Tock Seng Hospital, Singapore by Koh et al had patients were predominantly male (7: 1) and Chinese (147) patients. The onset of disease was usually in the early 20s and there was a mean delay of 6.3 years before diagnosis was made<sup>18</sup>.

### Conclusion

Musculoskeletal pain is a major public health problem in Bangladesh although this is not properly emphasized. The primary rheumatology service is inadequate due to the low priority given by the authority, to non-communicable diseases like musculoskeletal disorders, as well as insufficient rheumatology teaching of primary health care doctors during their undergraduate training. This will provide a guideline for future investigators about rheumatic diseases. Additionally, for the true prevalence of the burden of rheumatological disorders, a community based WHO-ILAR-COPCORD study should also be launched in this part of Bangladesh. Critical appraisal of clinical profile and technological advances in radio imaging, immunology and molecular biology would enable future investigators of rheumatology to identify many more clinical syndromes and would help in planning all levels of prevention and therapy.

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