Original Article

Pattern of Musculo-Skeletal Disorders in Diabetic and Non-diabetic Patients Attending in a Tertiary Care Hospital in Dhaka

Khan MSZ[a*], Ahmed AKMS[b*], Zaman AKA[c], Haque HF[d], Hosain M[e], Doza AKMAU[e]

Abstract

Background*: Disorders of the musculoskeletal (MSK) system affect all ages and ethnic groups. This study was done to see the pattern of MSK disorders in diabetic and non-diabetic patients at a tertiary care hospital.*

Methods*: This cross-sectional study was done between period of June 2016-Feb 2017 in the Department of Physical Medicine and Rehabilitation of a tertiary care hospital in Dhaka. Six hundred individuals were included in the study, 300 in diabetic and 300 in non-diabetic group.*

Results: *Diabetic group consisted with 95 (31.67%) males, 205 (68.33%) females. Non-diabetic group consisted with 176 (58.67%) males and 124 (41.33%) females. Osteoarthritis knees (CoA of (101, 33.67%), degenerative lumber disc disease (69, 23%), frozen shoulder (60, 20%), degenerative cervical disc disease (42, 14%) and non-specific back pain (22, 7.3%), were common among diabetic patients. Among non- diabetic patients non-specific back pain (55, 18.33%), degenerative lumbar disc disease (52, 17.33%), degenerative cervical disc disease (41, 13.66%), OA of knees (38, 12.60%), prolapsed lumbar inter- vertebral disc (PLID) (30, 10%) were common.*

Conclusion: *Degenerative, non-inflammatory abnormalities comprised the major bulk of problems. Soft tissue rheumatism was common in diabetic patients. Frozen shoulder was present in higher percentage in diabetic patients.*

Key words*: Diabetes, musculoskeletal disorders, non-diabetic.*

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Introduction

Rheumatology includes 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.[1] Rheumatic diseases are a common cause of disability and a large public health burden.[2]

Diabetes is a multi-system disorder affecting 3-7% of the adult population in different geographical areas.[3,4] Diabetic patients may present with various musculoskeletal (MSK) disorders. Adhesive capsulitis of shoulder joint is well established as a complication of diabetes.[5,6] Trigger finger and complications involving joints eg. Charcot's arthropathy are freqrent in diabetic patients.[7,8] Physiatrists are frequently called on to assess and treat acute rheumatological and related MSK problems. Frequently they serve as the primary diagnostician and manager to patients with degenerative joint disease and soft tissue rheumatism as well as related discogenic disorders.[9]

A significant number of patients with different rheumatic complaints are referred from orthopedics, medicine,

Author Information

a. Dr. Md. Shah Zaman Khan, Associate Professor, Physical Medicine and Rehabilitation, BIRDEM General Hospital
b. Dr. A.K.M. Shaheen Ahmed, Associate Professor, Internal Medicine, BIRDEM General Hospital
c. Dr. A.K. Ahmed Zaman, Junior consultant, Physical Medicine and Rehabilitation, BIRDEM General Hospital
d. Dr. Hasna Fahmima Haque, Registrar, Internal Medicine, BIRDEM General Hospital
e. Dr. Mohammad Hosain, Medical Officer, Physical Medicine and Rehabilitation, BIRDEM General Hospital.
e. Dr. A.K.M. Asad-Ud-Doza, Senior Medical Officer, Physical Medicine and Rehabilitation, BIRDEM General Hospital.

*First two authors had equal contributions and should be regarded as principal author.

Address of Correspondence: Dr. Md. Shah Zaman Khan, Associate Professor, Physical Medicine and Rehabilitation, BIRDEM General Hospital, E-mail:mszk67@gmail.com

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neuromedicine and other out and in-patient departments to the department of Physical Medicine and Rehabilitation, Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM) General Hospital for diagnosis, treatment and rehabilitation. The aim of study was to find out the pattern of MSK disorders among the diabetic and non-diabetic patients attending the department of Physical Medicine and Rehabilitation, BIRDEM General Hospital Dhaka.

Methods

This cross-sectional study was done between period of June 2016 to February 2017 at the department of Physical Medicine and Rehabilitation, BIRDEM General Hospital to see the pattern of MSK disorders in diabetic and non-diabetic patients. Six hundred individuals were studied as subjects, 300 individuals were diabetic and 300 were in non-diabetic group. Diagnosis were made from comprehensive history and clinical examinations supplemented by appropriate laboratory investigations. Diabetes was excluded by fasting blood sugar, oral glucose tolerance test and HbA1c. Diabetic patients with MSK disorders who were getting oral hypo- glycaemic agents or insulin were included in diabetic group. Different serological test like rheumatoid factor (RF), anti citrullinated peptide antibody (ACPA), Human leucocytic antigen-B27, antinuclear antibody, anti double stranded-DNA were done in relevant cases according to clinical diagnosis. X-Ray and magnetic resonance imaging (MRI) of spines, joints were done where needed.

All necessary data were recorded in a preformed data sheet. Results were processed and tabulated manually. The results were expressed in the form of number and percentage.

Results

A total of 600 patients were studied. Out of them 300 individuals in diabetic group and 300 individuals in non-diabetic group. The diabetic group consisted with 95 (31.67%) males and 205 (68.33%) females. The non-diabetic group consisted with 176 (58.67%) males and 124 (41.33%) females.

In diabetic group, maximum patients were between the age group of 51-60 and non-diabetic it was >25-40 (Table I)

Table I. Age distributions of the study population

Age in years	Diabetic group (n=300)	Non-diabetic group (n=300)
>25- 40	34 (11.33%)	125 (41.67%)
41-50	85 (28.55%)	93 (31.0%)
51-60	117 (39.0%)	48 (16.0%)
61-70	43 (14.33%)	26 (8.67%)
>70	21 (7.0%)	8 (2.67%)

Degenerative joint disease (Table II) included osteoarthritis knees (33.67%, 12.66%), lumbar spondylosis (23%, 17.33%), cervical spondylosis (14%,13.66%), was the commonest (70.67%, 43.65%) in both diabetic and non-diabetic population respectively. Osteo-arthritis hip, nodal osteoarthritis, osteoarthritis acromio-clavicular joint were also present

Table II. Degenerative joint and spine disease

	Diabetic	Non-diabetic
Osteo-arthritis (OA) Knee	101 (33.67%)	38 (12.66%)
Lumbar Spondylosis	69 (23%)	52 (17.33%)
Cervical Spondylosis	42 (14%)	41 (13.66%)
OA Hips	7 (2.33%)	2 (0.66%)
Nodal OA	4 (1.33%)	4 (1.33%)
OA-AC Joint	1 (0.33%)	0 (0%)

Soft tissue rheumatism were shown in Table III. Frozen shoulder was the commonest problem among all soft tissue rheumatic patient (20%, 5.66%). Trigger finger, plantar fasciitis, tennis elbow, de-Quervain's tenosynovitis, supra-spinatus tendinitis, achilli's tendinitis were also present.

Table III. Soft tissue rheumatism

	Diabetic	Non-diabetic
Frozen shoulder	60 (20%)	17 (5.66%)
Planter fasciitis	16 (5.33%)	13 (4.33%)
Trigger finger	14 (4.66%)	2 (0.66%)
Tennis elbow	12 (4%)	9 (3%)
De- Quervains tenosynovitis	5 (1.66%)	9 (3%)
Supraspinatus tendinitis	2 (0.66%)	3 (1%)
Achilis tendinitis	2 (o.66%)	7 (2.33%)
Golfers elbow	0 (0%)	2 (0.66%)

Among inflammatory joint disease rheumatoid arthritis (2.33%, 2.33%), gout (0.66, 1.33%), ankylosing spondylitis (0.33%, 4.33%) are shown in Table IV.

Table IV. Inflammatory spine and joint disease

	Diabetic	Non-diabetic
Rheumatoid arthritis	7 (2.33%)	7 (2.33%)
Gout	2 (0.66%)	4 (1.33%)
Anlylosing spondylitis	1 (0.33%)	13 (4.33%)

Non-specific back pain (7.33%, 18.33%), PLID (4.7%,10%), spondylolisthesis (4%, 0.66%), compression vertebral fracture (1%, 1.33%) were common back problems. Cervical disc prolapse (0.66%, 1.61%), non-specific neck pain (0.33%, 3.66%) were common neck problems. Avascular necrosis of hip (AVN) (0%, 0.33%), charcots joint (0.33%, 0%) were present in very small percentage. Only one patient in non-diabetic group had connective tissue disease.

Table V. Less common causes

Other	Diabetic	Non diabetic
Non-specific back pain	22(7.33)	55(18.33)
Prolapsed Lumbar	14(4.7)	30(10)
Inter-vartibral disc		
Spodylolisthesis	12(4)	02(0.66)
Compression Fracture	03(1)	04(1.33)
Cervical disc prolapse	02(0.66)	05(1.61)
Non-specific neck pain	01((0.33)	11(3.66)
Avascular necrosis of hips	00	01(0.33)
Charcots Joint	01(0.33)	0 (0%)

Discussion

Disorders of MSK system are prevalent through out the world, affecting all ages and ethnic groups. Most MSK conditions are predominant in women and show a strong association with age.[10] In present series in diabetic group 68.33% were female and 31.67% were male which supports the previous study. In non-diabetic group 58.67% were male and 41.33% were female. In one study Zaman[11] reported that males were more prevalent. Degenerative joint disease (DJD) included osteoarthritis knees (33.67%, 12.66%), lumbar spondylosis (23%, 17.33%), cervical spondylosis (14%,13.66%) in both groups comprised the major bulk of problems among patients with MSK problems which supports other studies.[12,13] In diabetic group 20% patient were of frozen shoulder and in non-diabetic it was 5.66%. Ray et al.[14] studied 100 diabetic patients and found 18% patients had frozen shoulder which supports our study. In another study by Adlow O[15] it was found that most common soft tissue rheumatism among Nigerians was adhesive capsulitis of shoulder, commonly associated with diabetes mellitus. Trigger finger is related with diabetes mellitus and duration of diabetics[16] and in our study it was 4.66% in diabetic group and 0.66% in non-diabetic group. Ray[14] had found 7% cases of trigger finger in his study which is in agreement with the present study. Plantar fasciitis affected male and female equally, is not a specific complication of diabetes[17] and in our study in diabetic group it was 5.33% and non-diabetic group 4.33%. Peters et al. found inflammatory, traumatic or other pathological process was only in 19% of patients in their study.[18] Non-specific back pain was 7.33% in diabetic group, 18.33% was in non-diabetic group. This difference may be due to age. In non- diabetic group 41.67% patients were below the age of 40 and majority of them suffered from non-specific back pain. Charcot neuro-osteoarthropathy was rare[19] and in present series it was 0.33%.

This study had some limitations because patients were mostly seen in physical medicine department. So larger and multi-centre survey in both physical medicine and rheumatology clinic may be done in future.

Conclusion

Degenerative, non-inflammatory abnormalities, soft tissue rheumatism exhibited a significant overall higher prevalence rate among these disorders than inflammatory disorders. The most frequently encountered in these patients was osteoarthritis. Frozen shoulder was present in higher percentage in diabetic patients.

Conflict of interest: Nothing to declare.

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