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Rheumatological Manifestations in Diabetic Population in a Tertiary Care Hospital

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Abstract

Rheumatological disorders in the patient of diabetes are very common still these are neglected. This was an observational, prospective hospital based study conducted on 200 diabetic patients from IGIMS OPD, Department of Medicine and Department of Endocrinology. Females (60.5%) predominated the males (39.5%). Most of the patients were of type 2 Diabetes Mellitus. Mean age of the groups was 50.77 years, mean duration of Diabetes Mellitus was 76 months, mean Body Mass Index was 31.3kg/m², and mean HBA1c of the groups was 8.07%. Osteoarthritis is the most commonly encountered Rheumatological manifestation in our study (43%) followed by frozen shoulder (30.5%) and limited joint mobility (20.5%). Flexor tenosynovitis was present in 6.5%, Diffuse idiopathic skeletal hyperostosis (DISH) was present in 8% and Dupuytren's Contracture was present in 9.5%. Our study shows common rheumatological manifestation in Diabetes mellitus were Osteoarthritis, Frozen shoulder and Limited joint Mobility. Our study shows duration of diabetes has important risk factors for development of rheumatological manifestations.

Keyword: Diabetics, Rheumatological, Osteoarthritis, Frozen shoulder, Limited Joint Mobility, Flexor Tenosynovitis, DISH, Duputren's Contracture.

Introduction

Diabetes Mellitus is associated with several musculoskeletal manifestations. Due to increased life expectancy of diabetic patients along with increasing incidence of Diabetes Mellitus resulted in increase in prevalence of musculoskeletal alterations in the patients.¹ The exact patho physiology of most of these musculoskeletal disorders remains unknown. Vasculopathy, connective tissue disorders, neuropathy or

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combination of these problem, may underlies the increased incidence of musculoskeletal disorders in Diabetes Mellitus.²

Rheumatological disorders described in patients with diabetes can be divided into three categories.³

1.Diseases associated with different complications of diabetes which include

- a. Diabetic muscle infarction
- b. Neuropathic arthropathy (Charcot's Joint, Claw toe)

2. Rheumatological disorders under this category can be further divided into two groups:

a. Disorder related to metabolic derangements

- i. Diffuse idiopathic skeletal hyperostosis (DISH)
- ii. Osteopenia
- iii. Osteoporosis

b. Disorders which share similar etiological mechanism as with micro vascular disease and change of collagen

- i. Limited joint mobility (chieroarthropathy)
- ii. Dupuytren's Contracture
- iii. Palmar flexure tenosynovitis (Trigger finger)
- iv. Adhesive capsulitis of the shoulder (Frozen shoulder)
- v. Reflex sympathetic dystrophy (algodystrophy)

3. Other rheumatological disorders which are common in general populations having increased prevalence in Diabetic population

- a) Carpal tunnel syndrome
- b) Gout
- c) Osteoarthritis
- d) Osteolysis of forefoot
- e) Migratory osteolysis of hip and knee

Rheumatological disorders in the patient of diabetes are very common still these are neglected, but their prevalence is quite high in diabetic patients.⁴ though studies are available regarding rheumatological manifestations in diabetic patients but datas from our region are scarce. Hence, we planned to study

rheumatological manifestations in diabetic patients. If we diagnose early then we can control the different rheumatological manifestations, otherwise these manifestations can deteriorate the quality of life in diabetic patients.⁵ Indira Gandhi Institute of Medical Sciences (IGIMS), Patna is a pioneer tertiary care hospital of Bihar, in where patients come from different parts of Bihar. So study here can represent the entire population of Bihar.

Aims & Objective

To study the prospective data on the trend of rheumatological manifestation in 200 diabetic patients from IGIMS OPD, Department of Medicine and Department of Endocrinology.

Material and Methods

This study was an observational, prospective, population based study conducted in Medicine & Endocrine OPD of IGIMS, Patna, Bihar from January 2015 to August 2015 in which patients of either sex who were Diabetic and had rheumatological manifestations were included.

Inclusion Criteria

Patients of both sexes who have Diabetes Mellitus.

Exclusion Criteria

- 1. Patients with renal osteodystrophy.
- 2. Rheumatoid arthritis patients
- 3. Patients with collagen vascular disorder
- 4. Patients with history of trauma- related musculoskeletal morbidities.

Every patient undergo complete physical examination & detailed history was taken regarding the disease. Proper Laboratory test and radiological investigation were done to assess the musculoskeletal complications.

Before starting the study we obtained approval from Ethical Committee of our Institution.

Results

200 diabetic patients with rheumatological manifestations were analyzed.

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Table- 1 Sex Distribution

	Number	%
Male	79	39.50
Female	121	60.50
Total	200	100

 Table -2 Type 1 and Type 2 Distribution

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	Number	%
Type 1	6	3%
Type 2	194	97%
Total	200	100%

Table-3 Demographic Profile

	n	Range	Min	Max	mean	Std deviation
Age	200	50.00	23.00	73.00	50.77	7.88
DM duration month	200	204.00	12.00	216.00	78.02	40.96
BMI	200	16.90	24.40	41.30	31.30	3.37
HBA1c	200	6.30	4.30	10.60	8.07	0.81

Table- 4 Case distribution according to rheumatological manifestations

	Total Male N (%)	Total Female N (%)	Total N (%)
Osteoarthritis	30 (15%)	56 (28%)	86 (46%)
Frozen Shoulder	26 (13%)	35 (17.5%)	61 (31.5%)
Limited Joint Mobility	20 (10%)	21 (10.5%)	41 (20.5%)
Flexor Tenosynovitis	5 (2.5%)	8 (4%)	13 (6.5%)
DISH	7 (3.5%)	9 (4.5%)	16 (8%)
Dupuytren's Contracture	6 (3%)	13 (6.5%)	19 (9.5%)

Table- 5 Rheumatological manifestations in relation to duration of diabetes mellitus

	<60 m	61-120m	121-180m	>180m	Total	Chi square value
						p- value
OA	22	42	18	4	86	29.30<0.005
FS	30	26	3	2	61	4.67>0.05
LJM	17	18	6	0	41	1.53>0.05
DC	11	6	1	1	19	3.46>0.05
FT	8	5	0	0	13	2.98>0.05
DISH	6	4	3	3	16	26.6<0.005

Discussion

200 diabetic patients with rheumatological manifestations were analyzed. Females (60.5%) predominated the male (39.5%). Most of the patients were of type 2 Diabetes Mellitus. Mean age of the groups was 50.77 years, mean duration of Diabetes Mellitus was 76 months, mean Body mass Index was 31.3kg/m2, and mean HBA1c of the groups was 8.07%. Osteoarthritis was the most Rheumatological commonly encountered manifestation in our study (43%) followed by frozen shoulder (30.5%) and limited joint mobility (20.5%). Flexor tenosynovitis was present in 6.5%, Diffuse idiopathic skeletal hyperostosis (DISH) was present in 8% and Dupuytren's Contracture was present in 9.5%. There were significant overlapping in different rheumatological manifestations and many of the patients had more than one musculoskeletal manifestations. Duration of diabetes had been strongly associated with Osteoarthritis and DISH (p- value <0.005). Our study did not find significant association with HBA1c level like in other studies probably because of small sample size.

Conclusion

Our study shows most common rheumatological manifestation in Diabetes Mellitus are Osteoarthritis, Frozen shoulder and Limited Joint Mobility. Our study shows duration of diabetes is an important risk factor for development of rheumatological manifestations.

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