CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
http://doi.org/10.5281/zenodo.2573845

Available online at: http://www.iajps.com *Research Article*

RHEUMATOLOGICAL MANIFESTATIONS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

[1] Dr Muhammad Aslam Rind, [1]Dr. Maria Nazir, [2]Dr Muhammad Saleem Rind
[1]Liaquat University of Medical and Health Sciences – LUMHS Jamshoro
[2]Peoples University of Medical and Health Sciences for Women (PUMHS) Nawabshah

Abstract:
OBJECTIVE:*to explore the rheumatological manifestations in patients with type 2 diabetes mellitus.*
PATIENTS AND METHODS: *The six month cross sectional study explored the diabetic population either gender for the rheumatological disorders. The detailed history and clinical examination was performed while along the baseline investigations the specific investigations were advised. The frequency / percentages (%) and means ±SD computed for study variables.*
RESULTS:*During six months study period total fifty patients with type 2 diabetes mellitus were explored and studied. The frequency for male and female population was 30 (60%) and 20 (40%) with mean ± SD for age of male and female individuals was 50.93±8.97 and 52.51±5.85 respectively.Regarding gender distribution male 30 (60%) and female 20 (40%), duration of diabetes mellitus (yrs) less than five years 08 (16%), five to ten years 30 (60%) and more than ten years 12 (24%). The glycemic status controlled 20 (40%) and un-controlled 30 (60%). Regarding the treatment on insulin 14 (28%), on OHA 15 (30%) and on insulin + oha 21 (42%) while the rheumatological manifestation was observed in 35 (70%) whereas the co-morbidity hypertension 22 (44%), dyslipidemia 15 (30%) and obesity 13 (26%). Regarding the rheumatological manifestations frozen shoulder 07 (20%), diffuse idiopathic skeletal hyperostosis (DISH) 06 (17%), carpal tunnel syndrome 06 (17%), osteoarthritis 08 (22.8%), charcot joint 03 (8.5%), dipyrrin's contracture 01 (2.8%) andcheiroarthropathy 04 (11.4%).*
CONCLUSION:*The prevalence of rheumatological manifestations is greater in patients with type 2 diabetes mellitus.*
KEYWORDS:*Rheumatology, Diabetes Mellitus and Joint disorders*

Corresponding author:
*** Dr. Muhammad Aslam Rind,**
Email: zulfikar229@hotmail.com

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Please cite this article in press Muhammad Aslam Rindet al., ***Rheumatological Manifestations In Patients With Type 2 Diabetes Mellitus.,****Indo Am. J. P. Sci, 2019; 06(02).*

INTRODUCTION:

Diabetes mellitus is a chronic metabolic condition characterized by persistent hyperglycemia resulting from defects in insulin secretion, insulin action or both [1]. It is associated with long term damage, dysfunction and failure of various organs, especially the eye, kidneys, nerves, blood vessels and skeletal system [2]. Type 2 diabetes mellitus is the most common form accounting for 85-95% of all cases. Although the other complications of diabetes mellitus are recognized as the major causes of morbidity and mortality, the musculoskeletal or rheumatological manifestations associated with it may be very debilitating [3]. Many of these complications are treatable with resultant improvement in quality of life and more independence in activities of daily living. Some of the manifestations like adhesive capsulitis of shoulder and diffuse idiopathic skeletal hyperostosis have a close association with diabetes mellitus that they often lead to diagnosis of diabetes in otherwise asymptomatic patients [4-6].So it is important to recognize the various joint and bone manifestations of diabetes mellitus [7, 8]. Thus this study was conducted to identify the prevalence of various rheumatological manifestations in patients with type 2 diabetes mellitus.

PATIENTS AND METHODS:

The cross sectional study was conducted at tertiary care hospital by inclusion criteria as inpatients and outpatients with type 2 diabetes mellitus diagnosed according to the criteria laid down by the American Diabetes Association while the exclusion criteria were the patients with history of injury or fractures in the joint region, end stage renal disease, chronic liver disease and the known patients of rheumatoid arthritis. The demographic characteristics were recorded while the joint involvement such as pain, stiffness, restriction of joint movement and swelling of the joint with the duration of symptoms were noted. Complete diabetic history was taken and the co-morbidities were also inquired. The general physical examination was performed and musculoskeletal system examination was also done. The investigations include as routine tests along with serum uric acid, RA factor, serum calcium, vitamin D level and radiograph (x-rays) of joints. Existence of sensory neuropathy was defined by symptoms of tingling and numbness over the extremities with or without impaired touch and vibration sense while the motor neuropathy was also explored. The data was noted on proforma while analyzed in SPSS to estimate the frequencies / percentages and mean ± SD.

RESULTS:

During six months study period total fifty patients with type 2 diabetes mellitus were explored and studied. The frequency for male and female population was 30 (60%) and 20 (40%) with mean ± SD for age of male and female individuals was 50.93±8.97 and 52.51±5.85 respectively. The demographical and clinical profile of study population is presented in Table 1while the rheumatological manifestations are presented in Table 2.

TABLE 1: THE DEMOGRAPHICAL AND CLINICAL PROFILE OF STUDY POPULATION

Parameter	Frequency (N=50)	Percentage (%)
AGE (yrs)		
30-39	06	12
40-49	12	24
50-59	14	28
60-69	10	20
70+	08	16
GENDER		
Male	30	60
Female	20	40
DURATION OF DIABETES MELLITUS (yrs)		
<5	08	16
5-10	30	60
>10	12	24
Glycemic Status		
Controlled	20	40
Un-Controlled	30	60
TREATMENT		
On insulin	14	28
On OHA	15	30
On Insulin + OHA	21	42
RHEUMATOLOGICAL MANIFESTATION		
Yes	35	70
No	15	30
CO-MORBIDITY		
Hypertension	22	44
Dyslipidemia	15	30
Obesity	13	26

TABLE 2: THE RHEUMATOLOGICAL MANIFESTATIONS IN DIABETIC POPULATION

Parameter	Frequency (N=35)	Percentage (%)
Frozen shoulder	07	20
Diffuse idiopathic skeletal hyperostosis (DISH)	06	17
Carpal tunnel syndrome	06	17
Osteoarthritis	08	22.8
Charcot joint	03	8.5
Dupuytren's contracture	01	2.8
Cheiroarthropathy	04	11.4

DISCUSSION:

The current study was a cross sectional study conducted and included 50 patients with type 2 diabetesmellitus. In the present study, the prevalence of rheumatological manifestations was greater inpatients with type 2 diabetes mellitus (35%) and

isconsistent with the study done by Caglerio E, et al [9] in which 36% of the diabetics had rheumatological manifestations as compared to 9% of non diabetics and study done by Douloumpakas [10]which showed 82.6% of type 2 diabetics had rheumatologicalmanifestations.Periarthritis of the shoulder was found in 20% of the type 2 diabetics in present study. The study by Renard E [11] reported that 15% of diabetics and 5% of non diabetics hadcarpal tunnel syndrome. In our study carpal tunnel syndrome was found in 17 of the type2 diabetics. In current series 22% of the diabetics had osteoarthritis and mainly knee joint was involved. It is inconsistent with the study done by Sarkar RN [12]in which osteoarthritis was found in 31% of the diabetics out of which 85% were type 2diabetics and usually found to involve the non weight bearing joints. Increased prevalence was seen in females than males which is consistent with the study done bySarkar RN [12].Diffuse idiopathic skeletal hyperostosis is seen in 17% of the type 2 diabeticswhich was consistent with the various studies [13, 14], which reported increased prevalence of diffuse idiopathic skeletal hyperostosis in diabetics.Various studies [15, 16] showed increased prevalence of limited joint mobility,Dupuytren's disease and flexor tenosynovitis in diabetics. However these manifestations were also observed in the present study.

CONCLUSION:

The study has found that the prevalence of rheumatological manifestations is greater in patients with type 2 diabetes mellitus. The male gender predominance while osteoarthritis and periarthritis of shoulder is the commonest rheumatological manifestation in type 2 diabetics.

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