

## PREVALENCE OF MUSCULOSKELETAL DISORDERS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

Ramesh B<sup>1</sup>, Vedavathy<sup>2</sup>

<sup>1</sup>Professor, Department of Medicine, ESICMC & PGIMSR.

<sup>2</sup>Junior Resident, Department of Medicine, ESICMC & PGIMSR.

### ABSTRACT

#### INTRODUCTION

Rheumatic complaints are more common with diabetes mellitus mainly type 2 diabetes. Females are more affected than males.

#### AIM OF THE STUDY

Is to know the prevalence of musculoskeletal manifestation in type 2 diabetes mellitus patients.

#### MATERIAL AND METHODS

This prospective study was conducted in the department of medicine at ESICMC & PGIMSR for a period of 6 months. Known case of diabetes mellitus with rheumatic manifestations were included in the study.

#### RESULTS

In our study-36% of osteoarthritis, 28% of frozen shoulder, 4% of Dupuytren's contracture, 28% of Charcot joint.

#### CONCLUSION

Early diagnosis and maintaining good glycemic control by pharmacotherapy diet exercise can decrease the prevalence of Rheumatic manifestation.

#### KEYWORDS

Diabetes mellitus, Rheumatoid arthritis, Pharmacotherapy, Diet, Exercise.

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**INTRODUCTION:** Diabetes mellitus is a chronic metabolic disorder characterize by persistent hyperglycaemia. Diabetes mellitus (DM) affects connective tissues in different ways and causes alterations in periarticular and skeletal systems<sup>1,2</sup> and it is associated with micro vascular and macro vascular complications.

Physical activity is an alternative treatment for patients with diabetes mellitus. Exercise is to be considered to be one of the important optimal treatment along with diet and pharmacotherapy.<sup>3</sup> Poor glycaemic control is associated with increased complications and hence to avoid complications, it is better to get good glycaemic controls.<sup>4</sup>

**MATERIAL AND METHODS:** This prospective study was conducted in the department of medicine at ESICMC & PGIMSR for a period of 6 months. Objective of the study is to know the prevalence of musculoskeletal manifestation like rheumatoid arthritis, osteoarthritis, frozen shoulder, Dupuytren's disease, Charcot joints, Study conducted in 150 patients with 25 patients developing complications.

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*Corresponding Author:*

*Dr. Ramesh B,*

*Professor, Department of Medicine,*  
*ESICMC & PGIMSR, Bangalore.*

*E-mail: drrameshsargur@gmail.com*

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**RESULT:** In our prospective study in 150 patients developed complications in 25 patients like.

40-50	Male (5) Female (8)
50-60	Male (3) Female (3)
60-70	Male (2) Female (4)
<b>Table 1: Age</b>	

Type 1	Type 2
0	25
<b>Table 2: Types of DM</b>	

More than 5	Less than 5
Male-6	Male-4
Female-10	Female-5
<b>Table 3: Duration</b>	

Osteoarthritis	9(36%)
Frozen shoulder	7(28%)
Dupuytren's contracture	1(4%)
Charcot joint	8(28%)
<b>Table 4: Complications</b>	

**DISCUSSION:** The musculoskeletal disorders have been described in these patients which can be divided into three categories: a. disorders which represent intrinsic complications of diabetes, such as limited joint mobility or

diabetic cheiroarthropathy, stiff hand syndrome, and diabetic muscular infarction, b. disorders with an increased incidence among diabetics, such as Dupuytren's disease, shoulder capsulitis, neuropathic arthropathy, osteopenia (in type 1 DM), flexor tenosynovitis, septic arthritis, acute proximal neuropathy, proximal motor neuropathy, pyomyositis and the diffuse idiopathic skeletal hyperostosis. Musculoskeletal complications are dependent on duration of the disease.<sup>5</sup> Main pathology associated with diabetes is formation of abnormally glycosylated end products or the impaired degradation of by products, it could be indirectly related to the vasculopathy and neuropathy commonly complicating the primary disease.

The most disabling of the common musculo skeletal problems is adhesive capsulitis, which is also known as frozen shoulder, shoulder peri-arthritis, or obliterative bursitis. It is characterized by progressive, painful restriction of shoulder movement, especially external rotation and abduction.<sup>6</sup> The exact origins of adhesive capsulitis are not known, although it has been associated with several other conditions, including shoulder trauma, cerebral conditions, cardiac conditions, and respiratory conditions. The natural history of the disease is characterised by three distinct phases: painful, adhesive, and resolution phases. The estimated prevalence is 11–30% in diabetic patients according to Il Smith et al correlate with our studies with incidence of 28% in our study and 2–10% in non-diabetics.<sup>7,8,9</sup> Most cases of adhesive capsulitis will resolve over time, but, in the interim, management consists of adequate analgesia and intra-articular corticosteroid injections in the painful early stages if required. Corticosteroid injections may increase blood sugar levels in diabetics over the 24–48 hour period after the injection, and therefore blood sugar monitoring and contingency plans for elevated blood sugar levels should be considered, regular physiotherapy program should be maintained, after the painful phase, throughout the course of the condition. Dupuytren's contracture Dupuytren's contracture is the palmar or digital thickening, tethering, or contracture of the hands. In patients with diabetes, the ring and middle finger are more commonly affected, compared with the fifth finger in patients without diabetes.<sup>10</sup> The prevalence of Dupuytren's contracture in diabetic patients ranges from 20 to 63%,<sup>10,11,12</sup> compared with 13% in the general population.<sup>13</sup> Among patients with Dupuytren's contracture, 13–39% have diabetes.<sup>10,14</sup> Our study incidence is 36%. Treatment consists of good glycaemic control, physiotherapy, and hand exercises if required, and surgery only if function is severely affected. The contractures are usually mild, however, and rarely require surgery. Charcot's disease, or joints, is a result of diabetic peripheral neuropathy. A reduction in the normal afferent protective neural impulses, and therefore loss of protection from trauma to the joint leads to progressive, painless joint destruction. Charcot's joints are typically seen in patients over the age of 50 who have had diabetes for 10 years and have existing neuropathic complications. The joints most commonly affected are weight-bearing joints such as the foot, ankles, and knees; joints such as the hand and wrist

are rarely affected.<sup>15</sup> Management consists of optimising glycaemic control and regular foot care and review, particularly in those with grossly impaired sensation.

Osteoarthritis in our study is 36% which correlates with Douloumpakas I et al where incidence is 32%. It is more common Degenerative, non-inflammatory abnormalities associated with Diabetes. Incidence of Charcot joint is 32% in our study which correlate with Gokhan Kaynak et al study with 42%. Charcot's disease, or joints, is a result of diabetic peripheral neuropathy. A reduction in the normal afferent protective neural impulses, and therefore loss of protection from trauma to the joint leads to progressive, painless joint destruction.

**CONCLUSION:** The complications of diabetes mellitus are more with involvement of musculoskeletal system. Several rheumatic conditions are more prevalent or caused by the long term metabolic consequences of diabetes mellitus. When the control of diabetes is poor, higher levels of diabetic complications result. Pharmacotherapy, diet, and a regular, physiotherapy programme should be the cornerstone of diabetes management.

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