

### **Prevalence of Erectile Dysfunction in Type 2 Diabetes Mellitus**

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**Conflicts of Interest:** Nil

#### **Abstract**

**Background:** Erectile dysfunction (ED) is a commonly reported condition among men with diabetes. To study the frequency of erectile dysfunction in Type-2 diabetic patients

**Methods:** Hospital based cross sectional, observational analytical study. A total 325 cases of type 2 DM of OPD and IPD patients of medicine department & diabetic centre of S.P. Medical college & Associated group of P. B.M. Hospital, Bikaner during the study period and meeting the inclusion exclusion criteria were included in this study. Data were analyzed on Epi-info software.

**Results:** Out of 325, 196 patients (60.31%) were having ED. Mean age of patients with ED was 56.10 ± 6.08 years.

**Conclusion:** We conclude that prevalence of erectile dysfunction (ED) is higher in men with type 2 diabetes mellitus.

**Keywords:** Erectile Dysfunction, HB1AC, T2DM

#### **Introduction**

Erectile dysfunction (ED) is the persistent inability to achieve or maintain penile erection for satisfactory sexual intercourse.<sup>1</sup> ED is a commonly reported condition among men with diabetes. Prevalence of ED among diabetic men varies from 35-90%.<sup>2</sup> ED in men with diabetes occurs 10-15 years earlier, it is more severe, associated with poor quality of life and is less responsive to treatment. In a recent multinational study, Men's Attitudes to Life Events and Sexuality, diabetic men rated their ED as more severe and debilitating than non-diabetic men and were more likely to seek professional help for the disorder. In our population, people seek physician's consultation for ED, but generally, due to lack of awareness among the diabetics, the treatment is denied.<sup>3</sup>

Chronic hyperglycaemia represents the major biochemical abnormality in the diabetic patient and it has a role in both micro-vascular and macro-vascular diabetic complications. However, there is still

disagreement about the role of glycaemic control as a risk factor for ED in diabetic men.<sup>4</sup>

**material methods**

**Study Area :** The present study was conducted in Sardar Patel Medical College and Associated group of P.B.M. hospital ,Bikaner Rajasthan.

**Study Design:** Hospital based cross sectional, observational analytical study

**Study period:** This study was carried out over a period of one year i.e. 2017 to 2018.

**Study population:** All type 2 Diabetes Mellitus male patients of age more than and equal to 40 years.

**Sample size:** A total 325 cases of type 2 DM of OPD and IPD patients of medicine department & diabetic centre of S.P. Medical college & Associated group of P. B.M. Hospital, Bikaner during the study period and meeting the inclusion exclusion criteria were included in this study.

Formula is given below

$$n = \frac{Z^2(1 - \alpha / 2) pq}{d^2}$$

where,  $z(1-\alpha/2) = 1.96$  for 95% C.I.

p = Prevalence

q = 1-p

d = allowable error which is 0.05

Prevalence=30.4% of type-2 DM

**Inclusion Criteria**

- 1) Men with Type 2 DM
- 2) Age  $\geq$  40 years

**Exclusion Criteria**

- 1) Patients with major depressive disorder
- 2) H/o spinal or prostate surgery
- 3) Accompaniment with any secondary cause
- 4) Patients who are not willing to participate.

**Methodology**

After taking clearance from research committee of our institution S.P. Medical College, Bikaner. Type 1 and Type 2 DM differentiated mainly on the basis of history (age, body habitus and ketosis) and clinically. All Type 2 DM male patients of age more than 40 years was taken as study population. After applying inclusion and exclusion criteria a group of 325 patients underwent clinical examination and investigations.

**The IIEF-5 Questionnaire (SHIM)**

Please encircle the response that best describes you for the following five questions:

Over the past 6 months:	Very low	Low	Moderate	High	Very high
1. How do you rate your confidence that you could get and keep an erection?	1	2	3	4	5
2. When you had erections with sexual stimulation, how often were your erections hard enough for penetration?	1	2 (much less than half the time)	3 (about half the time)	4 (much more than half the time)	5 Almost always or always
3. During sexual intercourse, how often were you able to maintain your erection after you had penetrated your partner?	1	2 (much less than half the time)	3 (about half the time)	4 (much more than half the time)	5 Almost always or always
4. During sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?	1	2 Extremely difficult	3 Very difficult	4 Difficult	5 Slightly difficult
5. When you attempted sexual intercourse, how often was it satisfactory for you?	1	2 (much less than half the time)	3 (about half the time)	4 (much more than half the time)	5 Almost always or always

Total Score: \_\_\_\_\_

1-7: Severe ED    8-11: Moderate ED    12-16: Mild-moderate ED    17-21: Mild ED    22-25: No ED

Statistical analyses were done using computer software (Epi-info). The qualitative data were expressed in proportion and percentages and the quantitative data expressed as mean and standard deviations. The difference in proportion was analysed by using chi square test and the difference in means were analyzed by using student t-Test .and Correlation analyses by using Pearson correlation coefficient and linear regression were performed. Multiple logistic regression

analysis was performed to find out the significant predictors of the erectile dysfunction. Significance level for tests were determined as 95% ( $p < 0.05$ ).

**Observation**

Table No. 1: Mean Age in patients with and without ED

Age (Years)						
ED	N	Mean	Std. Deviation	Minimum	Maximum	P value
Absent	129	50.82	5.65	40	62	<0.001
Present	196	56.10	6.08	30	68	
Total	325	54.00	6.415	30	68	

A total of 325 Type 2 DM Male subjects were studied. Out of 325, 196 patients (60.31%) were having ED. Mean age of patients with ED was  $56.10 \pm 6.08$  years. (Range: 30-68 yrs). Mean age of patients without ED was  $50.82 \pm 5.65$  years (Range: 40-62 yrs).

Table 2: Serum Glycosylated Hemoglobin (HbA1C) in patients with & without ED

Serum HbA1C %	N	Mean	SD	Min.	Max.	p value
ED Absent	129	7.66	0.92	5.9	9.5	
ED Present	196	8.12	4.38	4.3	66.0	0.238
Total	325	7.93	3.45	4.3	66.0	

Mean HbA1C in patients with ED was  $8.12 \pm 4.38\%$ . Mean HbA1C in patients without ED was  $7.66 \pm 0.9\%$ . No significant difference was observed according to Serum HbA1C with Erectile Dysfunction status.

**Discussion**

Present study was conducted in the Department of Medicine, Sardar patel Medical college and attached group of Hospital, Bikaner. We found that Diabetic

patients in India are usually presenting late to the health care system, by the time they are having many complications. Many patients with newly diagnosed DM type 2, were having erectile dysfunction at presentation.

In our study a significant number of patients had ED (60.31%). The higher prevalence reported by some studies could be explained by the fact that they did not consider any psychological factors affecting ED in diabetes which can passively increase ED in these patients. In the present study, we have excluded these confounding factors to eliminate unreal data. In addition the higher prevalence of ED reported in these kind of studies may be because of selection bias of referral centers, as most of the studies were undertaken in referral centers and their study population may contain more complicated diabetic patients. We used more general setting for the study to make better external validity for the results.

The prevalence of erectile dysfunction among diabetic men which had been reported previously varies between 35 and 90%.<sup>4-6</sup> For instance, erectile dysfunction was detected in over 50% of men with diabetes in the US<sup>4</sup> and in 41% of diabetic men in the Netherlands.<sup>7</sup>. Studies from Saudi diabetic patients reported ED among 80 to 90% of the patients<sup>5-6</sup>.

Mean age of patients with ED was  $56.10 \pm 6.08$  years while that of without ED was  $50.82 \pm 5.65$  years in our study. The difference of age between both groups was statistically significant ( $p < 0.001$ ). Our study supports the finding of Sharifi et al<sup>8</sup> who reported statistically significant higher mean age of Diabetic patients with ED as compared to those without ED ( $p < 0.001$ ).

**Conclusion**

We conclude that prevalence of erectile dysfunction (ED) is higher in men with type 2 diabetes mellitus.

The risk of erectile dysfunction (ED) is higher in type 2 diabetic men with poor glycemic control.

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