

Epidemio-Clinical Aspects of Erectile Dysfunction in Type 2 Diabetics at Abeche Chu

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Abstract

Introduction: Erectile dysfunction (ED) is a frequent complication of diabetes and more frequently affects type 2 diabetics. It is often unrecognised or its management is delayed because it is often overshadowed by other complications. The aim of our study was to describe the epidemiological and clinical aspects of ED. **Patients and Method:** This was a descriptive cross-sectional study over an 8-month period from April to December 2021, of type 2 diabetic subjects with erectile dysfunction (ED) seen at the University Hospital of Abeche. Erectile function was assessed using the International Index of Erectile Function (IIEF5). **Results:** Out of a total of 112 patients with type 2 diabetes, 64 agreed to take part in the study. Only 40 patients correctly completed the survey form. Of these, 34 (85%) had erectile dysfunction. On average, our patients were over 49.4 years old, and 55.9% of them had had diabetes for more than 10 years. Erectile dysfunction had affected the social life of 21 patients (61.76% of cases) and 28 (82.35%) had not been informed by a healthcare professional. Most of them, 31 cases or 91.17%, had never told their GP about their erectile dysfunction. The patients who thought that diabetes had an influence on their erectile dysfunction represented 74%. Diabetes was poorly controlled in 22 patients (64.70%). According to the International Index of Erectile Function (IIEF5), 85% of diabetic patients suffer from erectile dysfunction, including 28.6% with severe erectile dysfunction, 35.7% with moderate erectile dysfunction and 14.3% with mild erectile dysfunction. Erectile dysfunction was significantly more frequent in diabetics with arterial hypertension and poor diabetic control. **Conclusion:** The hospital prevalence of erectile dysfunction in our patients is high. Early detection

of this disorder therefore remains a challenge to be met in order to organise better psychological and drug treatment.

Keywords

Diabetes, Erectile Dysfunction, Screening

1. Introduction

Erectile dysfunction (ED) is the persistent or repeated inability to obtain and maintain an erection sufficient for satisfactory sexual activity [1]. It is a real detriment to the quality of life.

According to the World Health Organisation (WHO), there are more than 537 million diabetics in the world, *i.e.* 10.5% of the population, and by 2030 diabetes will be the seventh leading cause of death in the world [2]. The course of diabetes is marked by the occurrence of acute and chronic degenerative complications, including diabetic neuropathy. The complications attributable to diabetes in erectile dysfunction include chronic hyperglycaemia, which causes endothelial changes whose main function in the erection mechanism appears to be the release of chemical neurotransmitters responsible for the relaxation of smooth muscle fibres [3]. Epidemiological studies show that erectile dysfunction has a higher incidence in diabetic patients. Indeed, the prevalence of erectile dysfunction is 5 times higher in diabetic subjects than in the general male population [4] [5].

Erectile dysfunction in diabetic men receives little attention despite the immense distress it causes [6].

The aim of our study was to describe the epidemiological and clinical aspects of erectile dysfunction in diabetic men at the University Hospital of Abeche.

2. Patients and Method

This was a prospective cross-sectional descriptive study from April to December 2021, *i.e.* over a period of 8 months, on type 2 diabetic subjects suffering from erectile dysfunction admitted to the University Hospital of Abeche. A questionnaire form was drawn up to collect the data. All type 2 diabetic males aged 18 and over suffering from erectile dysfunction were included. They were Type 1 diabetics, diabetics under 18 years of age and non-consenting diabetics were excluded.

The variables studied were: epidemiological (age, profession, origin, marital status, level of education), clinical (medical and surgical history, alcohol consumption, smoking, weight), para-clinical (glycated haemoglobin, triglycerides, total cholesterol, LDL), therapeutic and evolutionary, triglycerides, total cholesterol, LDL), therapeutic and evolutionary. Data were collected and analysed using SPSS 19.0 software. Calculations were performed using proportions and means, and statistical significance was considered with $\alpha = 5\%$. Descriptive

analysis of the data was performed using Student's t test and Chi-2 test according to the quantitative or qualitative nature of the data. Erectile function was assessed using the following International Index of Erectile Function (IIEF5):

- 1) IIEF5 score from 1 to 4: not interpretable;
- 2) IIEF5 score of 5 to 10: severe erectile dysfunction;
- 3) IIEF5 score 11 to 15: moderate erectile dysfunction;
- 4) IIEF5 score 16 to 20: mild erectile dysfunction;
- 5) IIEF5 score 21 to 25: normal erectile function.

3. Results

During the study period, 112 patients with type 2 diabetes were seen in urology consultations. Only 64 of them agreed to take part in the study. Of these, 40 correctly completed the survey form. Of these 40 patients, 34 (85%) had erectile dysfunction. The average age of these patients was 49.46 ± 9.29 years, with extremes of 26 and 75 years. The most common age group was between 40 and 50, with 19 cases (55.9%). (**Table 1**)

Most of the patients (75.4%) were from urban areas and 24.6% from rural areas. They were married in 84.3% of cases, with 82.4% of them living regularly as a couple. In terms of educational level, 56.7% of patients had at least secondary education. At work, 32.5% were civil servants and 22.8% shopkeepers. The duration of diabetes was greater than 10 years in 52.9% of cases. In 91.7% of cases, their diabetes was being monitored by healthcare staff. They were being treated with oral antidiabetic drugs (OADs) in 82.4% of cases, insulin in 9.5% and diet alone in 8.1% of cases. Hypertension was associated with diabetes in 37.6% of cases, and 50.7% of patients were overweight. Alcohol was consumed in 24.2% of cases, and 16.2% were smokers. Patients had a history of urological surgery in 13% of cases. (**Table 2**).

The absence of a morning erection was reported in 78.4% of cases. Of these cases, 71.8% reported erectile dysfunction. The onset of erectile dysfunction was progressive in 93.6% of cases.

It had lasted for more than 3 years in 73.4% of cases. It affected the social life of 21 patients (61.76%), and 28 cases (82.35%) had not been informed by a healthcare worker.

Table 1. Distribution of patients by age group.

Age group	Number	Percentage (%)
18 - 28	1	2.9
29 - 39	3	8.8
40 - 50	19	55.9
51 - 61	7	20.6
62 and above	4	11.8
Total	34	100

The majority of our patients (31 cases), i.e. 91.1%, had never spoken to their problem about their erectile dysfunction. Diabetes was poorly controlled in 22 patients (65.3%). The patients who had established a link between their diabetes and their erectile dysfunction accounted for 74%. According to the International Index of Erectile Function (IIEF5), 85% of diabetics had erectile dysfunction, including 28.6% with severe erectile dysfunction, 35.7% with moderate erectile dysfunction and 14.3% with mild erectile dysfunction (**Table 3**).

Patients with a fasting plasma glucose level greater than 2 g/l accounted for 51% and the mean fasting plasma glucose level was 2.4 g/l with extremes of 0.78 g/l and 4.8 g/l.

Glycated haemoglobin (HbA1c) above 7.5% accounted for 64.3% and mean HbA1c was 8.2% with extremes of 6.1% and 12.7%. High triglycerides accounted for 52.4% of cases.

98.4% of patients had knowledge of treatment for ED and 58.7% had received treatment.

When erectile dysfunction was discovered, only a quarter of the doctors treating patients sought a specialist consultation with a urologist, and even fewer sought cardiology advice. However, only 32% of patients received treatment with phosphodiesterase type 5 inhibitors.

46.7% of cases had taken treatment for erectile dysfunction from traditherapeutics (**Table 4**).

Table 2. Distribution by risk factor for erectile dysfunction.

Medical and surgical history	Prevalence (%)
Hypertension	36.6
Smoking	16.2
Alcoholism	24.2
Overweight	50.7
Urological surgery	13

Table 3. Distribution of patients according to the international index of erectile function.

IIEF5 score	Number	Percentage (%)
1 - 4	1	2.4
5 - 10	12	28.6
11 - 15	15	35.7
16 - 20	6	14.3
21 - 25	8	19
Total	34	100

Table 4. Distribution of patients by type of prescriber.

Prescriber	Number	Percentage (%)
Specialist	1	6.7
Generalist	2	13.3
Paramedical	3	20
Traditherapist	7	46.7
Other	2	13.3
Total	15	100

1) Specialist: Urologist-andrologist; 2) Other: patient himself; 3) Paramedical: nurse.

4. Discussion

The International Index of Erectile Function (IIEF5) is a reliable tool for ensuring consistency between studies and for defining the severity of ED. The prevalence of ED in our sample was 85%. This rate is similar to those reported by Gourbé on Reunion Island in 2013 and Mustapha in Morocco in 2020, which reported 88% and 88.5% respectively [1] [7]. On the other hand, this rate is higher than that of Raharinaivalona in Madagascar in 2017 [8], which reported only 72.7%. These differences may be explained by the diversity of the populations studied, but also by the methodologies or criteria used to diagnose erectile dysfunction.

In our series, the mean age was 49.46 ± 9.2 years, with extremes of 26 and 75 years. The 40 - 50 age group was the most represented. These results are similar to those of Ndour [6] in Senegal in 2020, Baldé in Guinea [9] and Achab in Morocco [5], who found an average age of 59.2 ± 11.2 ; 55 ± 11 and 58.4 ± 10.6 years respectively. This could be explained by the fact that type 2 diabetes usually affects adults from the age of 40.

Patients living with a partner represented 82.4% of cases in our series. This result is higher than that of Gourbé in Réunion in 2013 [7], who reported 74%. This could be explained by the fact that in African society, women generally agree to stay with their husbands for the sake of the children, even if they are not sexually satisfied.

With regard to educational level, patients with at least secondary education represented 56.7% of cases. This result corroborates that of Kambou in Burkina Faso, where 51.1% of his patients had attended secondary school [10]. The majority of patients were civil servants (32.5%), followed by shopkeepers (22.8%). These results are similar to those of Doukouré [11] in Côte d'Ivoire, who found a prevalence of 24% among civil servants and 19% among shopkeepers in 2021. However, our results differ from those of Ndour [6] in 2020 in Senegal, who reported a prevalence of 50.5% in working patients and 27.5% in retired patients. This could be explained by the fact that civil servants and shopkeepers have the financial means to seek medical advice. The duration of diabetes in our series was significantly correlated with erectile dysfunction. Indeed, the prevalence of

erectile dysfunction in patients whose diabetes had progressed for more than 10 years was 52.9%. Our result is similar to that found by Mustapha [1] in Morocco. He reported a prevalence rate of 54% in 2020. However, it differs from that reported by Ndour [6] in Senegal in 2020, who found a rate of 56% in patients whose diabetes had progressed between 0 and 5 years. This difference could be explained by the fact that in our series, patients are consulted late and rarely keep follow-up appointments. It has also been elucidated in the literature that the frequency of erectile dysfunction increased with the duration of the course of diabetes [6]. This can be explained by the fact that the longer the diabetes, the more likely it is that micro and macro angiopathic complications will induce ED. 37.6% of our patients had arterial hypertension.

These data are similar to those found by Ndour [6] in Senegal with a frequency of 38%. However, Achhab in Morocco [5] found a lower frequency of 26%. This rate could be explained by the fact that patients are detected late for their diabetes and present for consultations with other associated comorbidities. This hypertension is generally due to chronic hyperglycaemia, which leads to damage to the vascular endothelium [3]. In terms of body mass, overweight patients accounted for 56% of cases. Our result is higher than that of Gourbé [7], who reported 47% of cases. This can be explained by the fact that overweight is classically associated with diabetes [12].

In our series, 74% of patients thought that diabetes influenced their sexuality. Our result is higher than that found by Raharinavalona [8] in Madagascar in 2017 who reported 51.52% of cases. This influence on sexuality is due to the psychological condition of the diabetic patient and also to the lack of self-esteem.

The majority of our patients stated that they had never spoken to their GP about their ED problem. This explains why sexuality is considered taboo in our societies and it is not easy to talk about it to anyone, even one's referring doctor.

Most patients said that their doctors had not asked them if they had erectile dysfunction. This could be explained by the fact that doctors are more preoccupied with detecting and managing other degenerative complications such as coronary artery disease, stroke and kidney disease.

The mean total IIEF5 score in our study population was 11.4. Eight patients (19%) had no erectile dysfunction. 34 patients (85%) had erectile dysfunction.

Erectile dysfunction was mild in 14.3% of cases, moderate in 35.7% and severe in 28.6%. Our series is comparable with the results of Ndour [6] in 2020 in Senegal. He found an average IIEF5 score of 15.6.

However, our results are higher than those of Baldé in Guinea [9] who found 48% of erectile dysfunction, 54% of which was severe. The low rate of erectile dysfunction found by Baldé may be due to the target population, which included type 1 and type 2 diabetics.

This severity of erectile dysfunction in diabetics could be due to its multifactorial nature with the participation of organic and/or psychological factors.

With regard to diabetic control, we found a mean HBA1c level of 8.34% in our patients. This was significantly correlated with ED. This rate is close to those

noted by several authors [6] [13] and by Mustapha in Morocco [1] who found a mean HBA1c rate of 9.1. As a result, the more unbalanced the diabetes, the more macro- and microangiopathic complications set in and lead to early erectile dysfunction.

In our series, only 32% of patients received adequate treatment for their erectile dysfunction. This is linked to the lack of qualified resources for the management of this condition.

5. Conclusions

Erectile dysfunction occurs more frequently in type 2 diabetics. Its frequency increases with age and the length of diabetes.

Patients often consult their doctors late for other diabetes-related complications and rarely mention erectile dysfunction to their doctors.

Raising awareness among patients and doctors about this subject, which is considered taboo in our society, remains a key point in its management, in order to promote early detection of the disorder and initiate appropriate psychological and medicinal treatment.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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Questionnaire

1. How long have you had diabetes?

- a) Less than 5 years
- b) Between 5 and 10 years
- c) More than 10 years

2. Are you being treated for diabetes by:

- a) Diet alone Oral antidiabetics (tablets)
- b) Insulin

3. Who is treating you for your diabetes?

- a) Your GP
- b) A diabetologist

4. How much do you smoke?

- a) Non-smoker/Never smoked
- b) Former smoker, stopped more than 3 years ago
- c) Smoking or stopping less than 3 years ago
- d) Average number of cigarettes per day:

5. Do you drink alcohol?

- a) Less than one drink a day
- b) 1 to 2 glasses a day
- c) 3 to 4 glasses a day
- d) More than 4 drinks a day

6. What is your current occupation?

- a) Retired
- b) Farmer
- c) Craftsman, shopkeeper, company director
- d) Managers and professionals
- e) Unemployed
- f) Employee
- g) Worker
- h) Intermediate occupations

7. Are you currently living with a partner?

- a) Yes
- b) No

If no, have you had a stable partner for more than 3 months?

- a) Yes
- b) No

8. Do you think your diabetes may influence your sexuality?

- a) Yes
- b) No

9. Before today, have any health professionals (doctor, nurse...) talked to you about erectile dysfunction?

- a) Yes
- b) No

10. Has your GP ever asked you if you have erectile dysfunction?

Yes	No
If Yes	If No
The reason for the consultation was:	Would you have liked your GP to talked to you about it?
Monitoring diabetes	Yes No
Erectile dysfunction	
Other reasons	
Did you feel comfortable answering questions about erectile dysfunction?	
Yes No	
Are you satisfied with the explanations given?	
Dissatisfied Satisfied Very satisfied	

11. Is your treating physician

- a) A man
- b) A woman

12. Do you think there are any treatments for erectile dysfunction?

- a) Yes
- b) No

13. Do you think you have erectile dysfunction?

- a) Yes
- b) No

14. How long do you think you have had erectile dysfunction?

- a) Less than a year
- b) Between 1 and 3 years
- c) More than 3 years

15. Was the onset?

- a) Progressive
- b) Sudden

16. Are you affected by erectile dysfunction?

	Never	Sometimes	Most of the most of the time
Psychologically (reduced suffering)			
In your private life (dating, socialising, hobbies)			

17. Have you spoken to anyone about these problems?

- a) Yes
 - b) No
- Your general practitioner
A specialist (urologist, diabetologist)
Other healthcare staff
Any other person

If yes, how long after the onset of symptoms?

- Less than 6 months
- Between 6 months and 1 year
- Between 1 and 3years
- More than 3 years

18. If you didn't mention it, is it because (You can tick more than one answer):

- | | |
|-------------------------------------|--|
| Because you forgot | Out of modesty |
| Because it is normal given your age | Out of shame |
| Because it's a taboo subject | Not important |
| Lack of information | Because of an inappropriate reaction from the doctor |
| Other: | Because your doctor is a woman |