

Association between glycaemic control and erectile dysfunction amongst Nigerian diabetic patients

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Abstract

We have investigated the relationship between glycaemic control using haemoglobin A_{1c} (HbA_{1c}) levels in diabetic patients with and without erectile dysfunction (ED) in Nigeria. Patients with (29) and without (22) ED were studied. The groups were well-matched for age, type, and duration of diabetes, and body mass index (BMI). HbA_{1c} levels were significantly higher in ED patients compared with those without ED ($9.0 \pm 1.6\%$ v $7.6 \pm 1.2\%$, $p < 0.05$). We conclude that ED is associated with poor glycaemic control, which is probably a causal factor.

Introduction

Erectile dysfunction (ED) is one of the chronic complications seen in men with diabetes mellitus. Autonomic neuropathy is a common cause of ED, although vascular, psychogenic, and endocrine factors are also important in its aetiology.

The prevalence of ED in persons with diabetes is between 35 and 75%.^{1,2} In Nigeria, Modebe reported a prevalence of 58%,³ while Olarinoye et al reported a prevalence rate of 74% thus showing a high prevalence of ED in diabetes.^{3,4}

This study set out to determine whether there was an association between ED and glycaemic control in men with diabetes.

Patients and methods

This was a cross-sectional, descriptive study. Twenty-nine (29) diabetic subjects (diagnosed using the 1999 WHO criteria)⁵ were studied. All had ED, diagnosed using the International Index of Erectile Functions (IIEF),⁶ which is a specific standardised and sensitive assessment method

for ED. In addition, we studied a control group of 22 diabetic patients without ED.

All patients were from the Diabetes Clinic of the University of Benin Teaching Hospital. Data obtained included age, type and duration of diabetes, body mass index (BMI), and waist:hip ratio (WHR). ED was diagnosed with a score of ≤ 25 in the IIEF. Glycaemic control was assessed using glycated haemoglobin and was measured by a chromatography method. Poor glycaemic control was taken as a haemoglobin A_{1c} (HbA_{1c}) level of $\geq 7\%$ and good glycaemic control was an HbA_{1c} $< 7\%$.

Data analysis was done using SPSS version 10 (2000). Comparison of means was done using Student's t test. Comparison of proportions and tests of association were carried out using the Chi-square test. The level of statistical significance was taken as $p \leq 0.05$.

Results

The characteristics of the study and control groups are shown in Table 1. It can be seen that there was no significant difference between the groups for age, duration and type of diabetes, BMI, and WHR. Glycaemic control, however, was clearly poorer in those with ED compared with those without (HbA_{1c} $9.0 \pm 1.6\%$ vs $7.6 \pm 1.2\%$, $p < 0.05$), and poor control (HbA_{1c} $> 7.0\%$) was more common in those with ED (51% vs 19%, $p < 0.05$).

Discussion

Our study, although small, clearly shows poorer glycaemic control in diabetic patients with ED, compared with those without. An Italian study has previously shown a similar association with higher HbA_{1c} levels.⁷ Sustained hyperglycaemia is well-known to be associated with an increased risk of diabetic complications,⁸⁻¹¹ both in type 1 and type 2 diabetes; and improvement in HbA_{1c} levels reduces appearance rates and progression of such complications. Data for ED as a complication are, however, more scarce, possibly because of the more complex aetiology of ED,¹² compared with other more classic complications such as retinopathy or nephropathy.

Nevertheless, our results and those of others, suggest that ED is associated with chronic hyperglycaemia, and that this may well be a causal mechanism. Though we have not investigated the effect of improved glycaemic control on ED symptoms, it would seem reasonable to attempt improved control in diabetic patients with ED.

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Table 1 Comparison of clinical features and HbA_{1c} levels between patients with and without erectile dysfunction

| | Patients with ED (n=29) | Patients without ED (n=22) | Significance |
|---|-------------------------|----------------------------|--------------|
| Age (years) | 50±10 | 50±10 | pNS |
| Type of diabetes | 6 type 1 23 type 2 | 3 type 1 19 type 2 | pNS |
| Duration of diabetes (years) | 8±4 | 4±2 | p<0.05 |
| BMI (kg/m ²) | 25.1±3.8 | 24.8±3.8 | pNS |
| WHR | 0.95±0.06 | 0.94±0.08 | pNS |
| HbA _{1c} | 9.0±1.6 | 7.6±1.2 | p<0.05 |
| Patients with HbA _{1c} >7.0 | 15 (51%) | 4 (19%) | p<0.05 |
| Note BMI = body mass index WHR = waist:hip ratio | | | |

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