

## CLINICAL PROFILE OF NEWLY PRESENTING DIABETIC PATIENTS AT THE UNIVERSITY OF UYO TEACHING HOSPITAL, NIGERIA

Unadike BC<sup>1</sup>, Akpan NA<sup>2</sup>, Essien IO<sup>3</sup>

### ABSTRACT

**Objectives:** Diabetes Mellitus is emerging as a major health challenge with the incidence and prevalence of the disease on the increase. It also contributes to overall morbidity and mortality with complications like cardiovascular disease, neuropathy, nephropathy, retinopathy and lower extremity amputation. There are few local studies on the clinical characteristics of the disease in our wet up and this study therefore set out to characterize the clinical profile of newly presenting diabetic patients in a health facility in Nigeria.

**Methodology:** It is a cross sectional, descriptive study carried out at the diabetes clinic of the University of Uyo Teaching Hospital between January 2007 and September 2008. Data obtained included age, sex, anthropometric indices, symptomatology, co-morbidities, complications and treatment of diabetes. Data was analyzed using SPSS version 10.

**Results:** A total of two hundred and seventy patients were studied (120 males, 150 females). About 89.2% were Type 2 DM patients and majority of the study subjects were overweight. Diabetic neuropathy was the commonest complication present in 38.8% of the subjects. Polyuria was the commonest symptom and hypertension the commonest comorbidity. Majority of the subjects were on oral hypoglycaemic agents for the management of their disease with the sulphonyureas and biguanides being the most common medication that was taken by them. A few of the patients were also taking herbal medication for treatment of their disease.

**Conclusion:** Majority of the patients presenting in our facility have Type 2 diabetes, were hypertensive and overweight. Hypertension was the commonest co-morbidity and diabetic neuropathy the commonest complication. Adequate health education, subsidies on medications and proper funding of the health sector is necessary to stem the tide of the burden attributable to the disease.

**KEY WORDS:** Clinical profile, Diabetes Mellitus.

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1. Unadike BC,
  2. Akpan NA,
  3. Essien IO
- 1-3: Department of Medicine, University of Uyo Teaching Hospital, Uyo, Nigeria.

Correspondence:

Unadike BC,  
E-mail: bernadike@yahoo.com

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### INTRODUCTION

Diabetes mellitus is a chronic illness that requires continuous medical care, patient self management and education to reduce the risk of long term complications.<sup>1</sup> It is also the most common endocrine disease and its prevalence and incidence appears to be on the increase, with the number of persons with the disease estimated at 220 million by the year 2010.<sup>2</sup> In

Nigeria the national prevalence is put at 2.2% with a higher prevalence in urban than rural communities.<sup>3</sup> Patients with diabetes mellitus are prone to complications like neuropathy, retinopathy, amputation, nephropathy and cardiovascular disease amongst others.<sup>4</sup>

For effective management of diabetic patients and prevention of long term complications, effective documentation and monitoring systems must be put in place. There is a paucity of data on this aspect of diabetes in our environment. This study therefore sets out to address this gap by documenting the clinical characteristics, co-morbidities, complications and other associated features in newly presenting patients in a tertiary hospital in Nigeria.

### METHODOLOGY

This was a cross sectional, descriptive study carried out at the diabetes clinic of the University of Uyo Teaching Hospital between January 2007 and September 2008. Uyo is the capital of Akwa Ibom State in the oil rich Niger Delta region of Nigeria. Informed consent was obtained from the study subjects after the study guidelines have been explained to them. All consecutively consenting subjects who were newly referred to the clinic were enrolled into the study. A brief clinical history and anthropometric indices was obtained from the subjects. Weight in kilogrammes and height in metres were obtained from the weighing scale and stadiometer respectively. The waist circumference was taken as the midpoint between the ribcage and iliac crest while hip circumference was taken as the maximal circumference around the buttocks posteriorly and pubic symphysis anteriorly.<sup>5</sup>

Blood pressure was measured in the sitting position with a mercury sphygmomanometer and hypertension diagnosed if patients have been on antihypertensive drugs, or had a blood pressure reading of >130 mmHg systolic and, or diastolic blood pressure of >80mmHg<sup>6</sup> on at least two occasions. Urine was also obtained from the subjects and urinalysis performed on the sample.

### DEFINITION OF TERMS

- Diabetic nephropathy – defined as presence of dipstick positive proteinuria with or without hypertension.
- Diabetic neuropathy – defined as diminished or lack of perception of touch / pain stimuli and loss of joint position sense and also vibration sense (assessed using a 128Hz tuning fork)
- Diabetic retinopathy – defined as fundoscopic evidence of diabetic retinopathy viz; haemorrhages, exudates, new vessel proliferation etc.
- Obesity – defined as a body mass index >30kg/m<sup>2</sup>

Fundoscopy examination of the eyes was done on all patients presenting with visual symptoms by the ophthalmologist.

Ethical approval for this study was obtained from the Ethical Committee of the University of Uyo Teaching Hospital, Uyo. Data Analysis was done using simple descriptive statistical methods with results being presented in tabular form.

### RESULTS

A total of two hundred and seventy patients were enrolled for the study. There were one hundred and fifty females, and one hundred and twenty males. The mean age of the study subjects was 46.3±10 years, while the mean duration of DM was 6.0±5 years. Two hundred and forty two of the subjects had Type 2 DM, twenty three had Type 1 DM, while five subjects had gestational diabetes. There was a positive family history of diabetes in ninety (33%) of subjects.

Forty five percent of the subjects were civil servants and professionals, while 108 (40%) were business men, traders and artisans, 8 (2.9%) were farmers and 32 (11.8%) belonged to other categories viz students, housewife, clergy etc. The mean BMI was 28.3±3.1kg/m<sup>2</sup>. The clinical characteristics of the study subjects are shown in Table-I.

Poor glycaemic control (fasting plasma glucose >6.1mmol/l) was seen in 260 (96.2%)

Table-I: Clinical characteristics of study subjects (n=270)

Parameter	mean±SD
Age (years)	46.3±10
BMI (kg/m <sup>2</sup> )	28.3±3.1
WC (cm)	91.1±21
Mean FPG (mmol/l)	14.2±3.7
Duration of DM (years)	6.0±5

BMI = Body mass index,  
WC = Waist circumference, FPG = Fasting  
Plasma Glucose, DM = Diabetes Mellitus

of the presenting subjects with a mean fasting plasma glucose value of 14.2mmol/l.

Majority of the subjects 240 (88.8%) had polyuria while 170 (62.9%) of the subjects had polydipsia, 44.4% complained of weight loss and 90 (33.3%) had polyphagia. 26.6% of the females complained of pruritis vulvae.

One hundred and forty-five(52.7%) of the subjects had hypertension comprising 140 of Type 2 DM patients, three of Type 1 DM patients and two with Gestational diabetes. About 30% of the male subjects had erectile dysfunction at presentation. Diabetic neuropathy was present in 105 (38.8%) of the study subjects, diabetic eye disease (cataract, glaucoma, retinopathy) was seen in thirty of the subjects, while renal disease as evidenced by proteinuria was seen in ten of the subjects. Seven of the subjects presented with diabetic foot disease.

Majority of the referrals from the hospital was from the ophthalmology department. In terms of treatment, majority of the patients (84%) were on oral hypoglycaemic drugs, with 26 of the subjects receiving insulin-therapy either alone or in combination with oral hypoglycaemic drugs. Sulphonyurea and biguanides were the commonest oral hypoglycaemic agents the subjects were taking before referral. Six of the subjects were not on any form of treatment, while four were on herbal treatment before referral to the hospital.

## DISCUSSION

Diabetes Mellitus imposes major health challenges both in its diagnosis and management<sup>7</sup>.

Table-II: Co-morbidity and complications in study subjects

Co-morbidity/ Complications	No. (%) n = 270
Hypertension	145 (52.7%)
Diabetic neuropathy	105(38.8%)
Diabetic Eye disease	30 (11.1%)
Diabetic nephropathy	10 (3.7%)
Diabetic Foot Disease	7 (2.5%)

Non communicable diseases particularly cardiovascular disease, Diabetes Mellitus and cancer are the major causes of morbidity and mortality in the developing world and are emerging as an important component of disease burden especially in Africa.<sup>8-10</sup> Rapid urbanization, economic and social changes have all been implicated as causative factors in these emerging disease pattern.<sup>11</sup> Initial studies in the past have been done in Nigeria to characterize the pattern of diabetes in the Nigerian patient.<sup>12-14</sup>

Majority of the subjects studied were females with a male, female ratio of 1:1.25. This can probably be explained by the fact that Nigerian women seek medical attention more often than their male counterparts. Other studies especially amongst non-communicable disease have equally reported this increased female preponderance.<sup>15</sup>

Majority of the subjects (89.6%) were Type 2 DM patients and this is generally in keeping with the fact that Type 2 DM in the most prevalent form of the disease, and this is further corroborated in other studies.<sup>16-18</sup> A positive family history of diabetes was documented in 33% of the subjects. It is known that a family history of diabetes is more important in Type 2 DM and majority of our subjects have Type 2 DM. This is comparable to findings from previous studies.<sup>19</sup>

Majority of our subjects were overweight. Obesity is a risk factor for the development of Type 2 DM. Studies have shown that obesity and overweight significantly increase the risk of developing Type 2 Diabetes.<sup>20</sup> Body Mass

Index (BMI) is the dominant risk factor for diabetes and increase in BMI in a population has been shown to predict associated changes in the prevalence of diabetes. Efforts must be intensified in terms of health education to prevent obesity and promote adequate treatment of Type 2 Diabetics who are obese with medications like biguanides and thiazolidinediones that affect insulin resistance which is caused by obesity.

There was poor glycaemic control in the study subjects. This poor glycaemic control is also echoed by other studies.<sup>17</sup> Many factors could be responsible for this including poor compliance with medications, lack of funds, and inadequate health education. Poor glycaemic control leads to acute and chronic complication of diabetes and hence continuous health education on the dangers of poor glycaemic control should be intensified.<sup>21,22</sup>

Polyuria was the most common symptom in the diabetic subjects being present in 88.8% of the subjects. Hyperglycemia causes osmotic diuresis which leads to excessive passage of urine with glycosuria in urine. These findings are in agreement with the other studies.<sup>19</sup> Some of the female subjects also had pruritis vulvae consequent upon the uncontrolled hyperglycaemia.

Hypertension was the commonest co-morbidity seen in this study with a prevalence rate of 53%. The prevalence of Hypertension amongst Nigerian diabetics have been put at 20-60%.<sup>23</sup> Majority of the subjects were Type 2 DM patients. The development of hypertension in a person with diabetes further worsens the prognosis and both conditions should be aggressively treated to prevent renal failure for which diabetes is the leading cause.<sup>24</sup> Some of the patients with gestational diabetes also developed hypertension which can be a complication of the disease, hence the need to properly evaluate this group of patients.

Erectile dysfunction (ED) was seen in (30%) of the males. Prevalence rates of 35% – 75% have been documented in persons with diabetes.<sup>25</sup> Many patients may not mention it to their doctor and many erroneously attribute it to ageing or may be embarrassed about disclosing it. In a

similar study in Lagos, Nigeria 38.3% of newly presenting subjects had ED, and ED is a sentinel marker of cardiovascular disease and other cardiovascular risk factors should be sought for in patients with ED.<sup>17</sup>

Neuropathy was the commonest complication seen and this is in agreement with a previous study in India.<sup>19</sup> Diabetic neuropathy is an early and common complication in patients with DM. Majority of the referrals were from the eye clinic with patients being referred on account of an ophthalmological condition like cataract, glaucoma amongst others. Some of these patients were asymptomatic for diabetes with only the ophthalmologic condition being the reason for the referral; and were subsequently discovered to be diabetic. Patients seen on account of eye symptoms should have a routine fasting plasma glucose done in order to detect and treat these cases without delay to prevent complications.

A good number of the patients were on oral hypoglycaemic agents like biguanides and sulphonyureas. This is in keeping with guidelines which advocate these agents as first line therapy for Type 2 DM.<sup>26</sup> Some of them were also taking herbal medications. This can be explained by ignorance and lack of funds, especially in a poor resource setting like ours. Adequate health education should be reinforced to these patients and Government should subsidize the treatment of diabetes to make it more accessible and affordable. A major limitation was lack of facilities for proper diagnosis of Type 1 DM.

## CONCLUSION

Majority of the subjects presenting in our facility had Type 2 DM, were hypertensive and overweight. Polyuria was the most common symptom; hypertension the commonest co-morbidity and peripheral neuropathy the commonest complication seen in this study. Adequate health education, subsidies on medication and proper funding of the health sector are advocated as a means towards the making and implementation of patient friendly oriented health policies.

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