Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Index Copernicus value = 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Assessment of complications in type II diabetes mellitus patients

Dr. Amit Sharma

Associate Professor, Department of Medicine, MSY Medical College, Meerut, Uttar Pradesh, India

***ABSTRACT*:**

Background: The present study was conducted to assess complications in type II diabetes mellitus. **Materials & Methods:** This study was conducted in department of Internal medicine on 145 type II DM patients of both genders. Diabetic complications were recorded. **Results:** Age group <20 years had 9 males and 5 females, age group 20-40 years had 20 males and 12 females and age group 40- 60 years had 24 males and 18 females and >60 years had 32 males and 25 females. Smoking was seen in 60, history of alcohol intake was seen in 72 patients and obesity was present in 38. The difference was significant (P< 0.05). Common complications were hypertension in 120, neuropathy in 37, foot ulceration in 72, nephropathy in 40, visual disturbance in 68, retinopathy in 31 and impotency in 16. The difference was significant (P< 0.05). **Conclusion:** Authors found that common complications among patients were hypertension, visual disturbances, neuropathy, foot ulceration, nephropathy, impotence and diabetic retinopathy.

Key words: Diabetes mellitus, foot ulceration, Visual disturbances.

Received: 26 October, 2019 Revised: 21 December, 2019 Accepted: 23 December, 2019

Corresponding author: Dr. Amit Sharma, Associate Professor, Department of Medicine, MSY Medical College, Meerut, Uttar Pradesh, India

This article may be cited as: Sharma A. Assessment of complications in type II diabetes mellitus patients. J Adv Med Dent Scie Res 2020;8(2):34-37.

INTRODUCTION

Diabetes mellitus is a global epidemic and a leading cause for increasing mortality and morbidity. More than 170 million people worldwide have diabetes, and this figure is projected to double by the year 2030, if the current trend continues. India is the diabetes capital of the world, with 41 million Indians having diabetes; every fifth diabetic in the world is an Indian.[1]

Type 2 diabetes mellitus is one of the major chronic disease burdens with a prevalence of 422million patients worldwide. In addition, type 2 diabetes is a leading cause of severe morbidities and disabilities (blindness, chronic renal impairment, cardiovascular events, and lower limb amputation.[2]

The chronic complications of diabetes are broadly divided into microvascular and macrovascular, with the former having much higher prevalence than the latter.[3] Microvascular complications include neuropathy, nephropathy, and retinopathy, while macrovascular complications consist of cardiovascular disease, stroke, and peripheral artery disease (PAD). Diabetic foot syndrome has been defined as the presence of foot ulcer associated with neuropathy, PAD, and infection, and it is a major cause of lower limb amputation.[4] The present study was conducted to assess complications in type II diabetes mellitus.

MATERIALS & METHODS

This study was conducted in department of Internal medicine. It comprised of 145 type II diabetes mellitus patients of both genders. All were informed regarding the study and written consent was obtained. Ethical

clearance was taken from institutional ethical committee.

General information such as name, age, gender etc. was recorded. History of diet, smoking, alcoholism was obtained. Patients were subjected to estimation of fasting and random blood glucose. All were subjected to HbA1c level estimation. Diabetic complications were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Age wise distribution

Age group	Male	Female
<20 years	9	5
20-40 years	20	12
40-60 years	24	18
>60 years	32	25
Total	85	60

Table I shows that age group <20 years had 9 males and 5 females, age group 20-40 years had 20 males and 12 females and age group 40- 60 years had 24 males and 18 females and >60 years had 32 males and 25 females.

Table II Assessment of risk factors in patients

Risk factors	Number	P value
Smoking	60	0.05
Alcohol	72	
Obesity	38	

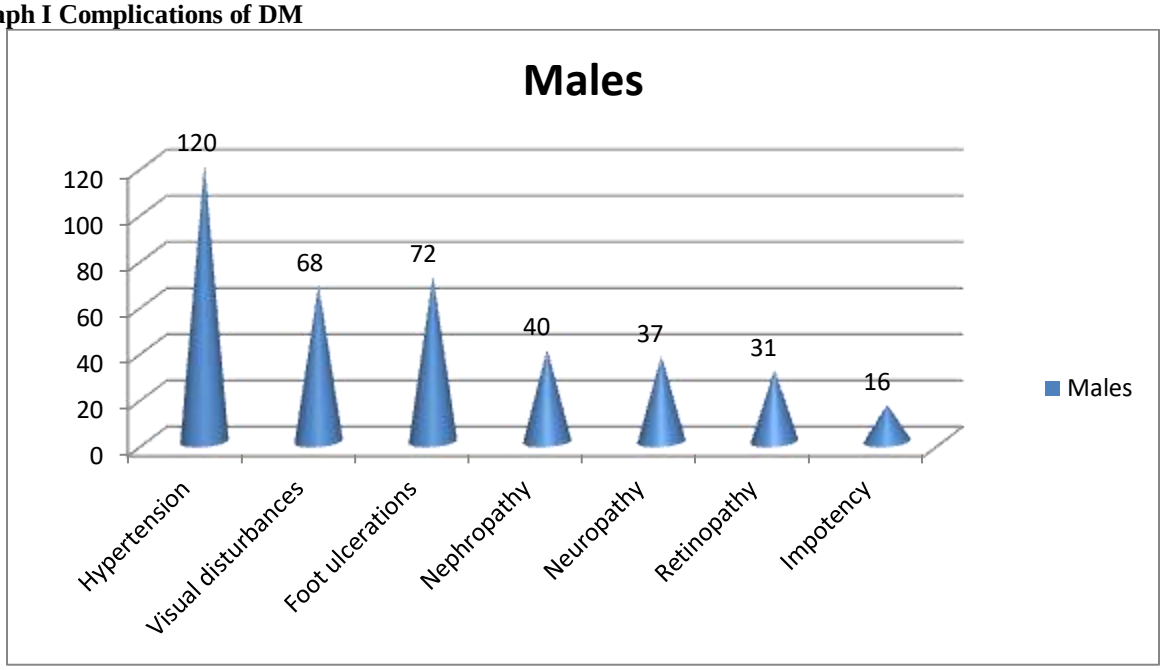
Table II shows that smoking was seen in 60, history of alcohol intake was seen in 72 patients and obesity was present in 38. The difference was significant (P< 0.05).

Table III Complications of DM

Complications	Males	P value
Hypertension	120	0.02
Visual disturbances	68	
Foot ulcerations	72	
Nephropathy	40	
Neuropathy	37	
Retinopathy	31	
Impotency	16	

Table III, graph I shows that common complications were hypertension in 120, neuropathy in 37, foot ulceration in 72, nephropathy in 40, visual disturbance in 68, retinopathy in 31 and impotency in 16. The difference was significant (P< 0.05).

Graph I Complications of DM



DISCUSSION

Diabetes mellitus (DM) is a group of common metabolic disorders that share the phenotype of hyperglycemia, which are caused by a complex interaction of genetics and environmental factors. It is the leading cause of end-stage renal disease (ESRD), traumatic lower extremity amputations, and adult blindness.[5] It also predisposes to cardiovascular diseases. With an increasing incidence worldwide, DM will be a leading cause of morbidity and mortality in the foreseeable future. The goal of treatment for DM is to prevent mortality and complications by normalizing blood glucose level. But blood glucose level might be increased despite appropriate therapy resulting in complications, such as disturbances in fat metabolism, nerve damage, and eye disease.[6] The present study was conducted to assess complications in type II DM patients.

In present study, age group <20 years had 9 males and 5 females, age group 20-40 years had 20 males and 12 females and age group 40- 60 years had 24 males and 18 females and >60 years had 32 males and 25 females.

According to the American Diabetes Association (ADA), the fasting glucose concentration should be used in routine screening for diabetes; but postprandial blood sugar, random blood sugar and glucose tolerance test are also used for blood sugar determination. For the diagnosis of diabetes, at least one criterion must apply such as symptoms of diabetes (polyurea, polydipsia, unexplained weight loss, etc) as well as casual plasma glucose concentration = 11.1 mmol/L (200 mg/dL). Fasting plasma glucose range is 70-110 mg/dl with no caloric intake for at least 8 h.[7]

Jelinek et al[8] found common complications such as hypertension (83.40%), obesity (90.49%) and dyslipidemia (93.43%) were common type 2 diabetes comorbidities. Most of the patients had relatively poor glycemic control and presented with multiple complications (83.47% of patients had one or more complication), with frequent renal involvement. The most frequent complication was retinopathy (13.26%). However, the pattern of complications varied based on age, where in patients 65 years old. Low estimated glomerular filtration rate in combination with disease duration was the most significant risk factor in the development of a diabetic-associated complication especially for coronary artery disease, whereas age, lipid values and waist circumference were significantly associated with the development of diabetic retinopathy.

The World Health Organization (WHO) classification includes both clinical stages (normoglycaemia, impaired glucose tolerance/impaired fasting glucose (IGT/IFG), diabetes) and etiological types of diabetes mellitus, identical to the ADA except that WHO group includes classification formerly known as gestational impaired glucose tolerance (GIGT) and GDM: fasting glucose = 7.0 mmol/L (126 mg/dL) and/or 2-h glucose = 7.8 mmol/L (140 mg/dL) after a 75-g OGTT.[9]

We observed that smoking was seen in 60, history of alcohol intake was seen in 72 patients and obesity was present in 38. Common complications were hypertension in 120, neuropathy in 37, foot ulceration in 72, nephropathy in 40, visual disturbance in 68, retinopathy in 31 and impotency in 16. A previous

report in the UAE indicated a retinopathy prevalence in patients with type 2 diabetes at 19%.[10]

CONCLUSION

Authors found that common complications among patients were hypertension, visual disturbances, neuropathy, foot ulceration, nephropathy, impotence and diabetic retinopathy.

REFERENCES

1. Augusta J., C. K. Riley, B. Layne, K. Miller, and L. Walker. Prevalence and risk factors associatedwith erectile dysfunction in diabetic men attending clinics in Kingston, Jamaica. Journal of Diabetology. 2012; 2-13.
2. Raval, E. Dhanaraj, A. Bhansali, S. Grover, and P. Tiwari. Prevalence & determinants of depression in type 2 diabetes patients in a tertiary care centre. Indian Journal of Medical Research. 2012; 2: 1-11.
3. Henry, R.R., Gumbiner, B.N., Ditzler, T. Intensive conventional insulin therapy for type II Diabetes. Metabolic effects during 6-month outpatient trial. Diabetes Care 2001; 16: 21-31.
4. Anderson, M. B. Donnelly, and R. F. Dedrick. Measuring the attitudes of patients towards diabetes and its treatment. Patient Education and Counseling. 1990; 2-12.
5. Unwin N, Whiting D, Roglic G. Social determinants of diabetes and challenges of prevention. Lancet. 2010; 375: 2204–5.
6. Colagiuri S, Borch-Johnsen K, Glumer C. There really is an epidemic of Type 2 Diabetes. Diabetologia. 2005; 48: 1459-1463.
7. Liu, C. Fu, W. Wang, and B. Xu. Prevalence of chronic complications of type 2 diabetes mellitus in outpatients—A cross-sectional hospital based survey in urban China. Health and Quality of Life Outcomes 2010; 1-15.
8. Yki-Jarvinen, H., Ryysy, L., Nikkilä, K., Tulokas, T.,Vanamo, R,, Heikkila, M. Comparison of bedtime insulin regimens in patients with type 2 diabetes mellitus: A randomized trial. Ann Intern Med; 2009; 130: 289-396.
9. Jelinek HF, Osman WM, Khandoker AH, Khalaf K, Lee S, Almahmeed W, Alsafar HS. Clinical profiles, comorbidities and complications of type 2 diabetes mellitus in patients from United Arab Emirates. BMJ Open Diabetes Research and Care. 2017;5(1):000427.
10. Al-Maskari F, El-Sadig M. Prevalence of diabetic retinopathy in the United Arab Emirates: A cross-sectional survey. BMC Ophthalmol 2007;7:1.