Original Research Article

A study of complications in patients with newly detected type 2 DM

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Abstract

Background: Chronic complications of diabetes, the major cause of morbidity and mortality, are often present at the time of diagnosis. The problem is further worsened as the diagnosis of diabetes is often delayed from months to years due to lack of symptoms, lack of awareness and the fear of unknown in spite of awareness. The asymptomatic phase of hyperglycemia accounts for the relatively high prevalence of complications at initial presentation. A high prevalence of such complications, if documented, will help convince the physicians the importance of screening for these complications in all type 2 diabetics (T2DM) at presentation for appropriate implementation of treatment without delay. **Methods:** The study was conducted on 100 newly diagnosed type 2 diabetes mellitus patients. Each patient was screened for diabetic complications, hypertension and dyslipidemia. Standard protocols were used to make the diagnosis of retinopathy, neuropathy, nephropathy, IHD, peripheral artery disease and autonomic complications. **Results:** There were 55 males and 45females. Majority were less than 60 years of age.22% of patients had neuropathy, 14% retinopathy and 7%, nephropathy. IHD and PAD were observed in 12% and 8%. Autonomic complications noticed in 5% patients. Co morbid conditions such as hypertension and dyslipidemia were observed in 24%, and 35% of patients respectively. **Conclusion:** All cases of Type 2 DM must be investigated for early detection of chronic complications so that further progression of the disease can be prevented.
Key Word: type 2 DM.

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INTRODUCTION

Chronic complications of diabetes, the major cause of morbidity and mortality, are often present at the time of diagnosis. The problem is further worsened as the diagnosis of diabetes is often delayed from months to years due to lack of symptoms, lack of awareness and the fear of unknown in spite of awareness. The asymptomatic phase of hyperglycemia accounts for the relatively high prevalence of complications at initial presentation. A high prevalence of such complications, if documented, will help convince the physicians, the importance of screening for these complications in all type 2 diabetics (T2DM) at presentation, for appropriate treatment without delay.

MATERIAL AND METHODS

- **Source of Data:** Newly detected patients with T2DM attending Dept. of Medicine (outpatient/inpatient), MVJMC&RH form the subjects.
- **Design of the Study:** Cross-sectional observational study.
- **Duration of Study:** September 2016 to June 2017 (10 months).

Inclusion Criteria

Newly diagnosed T2DM adult patients >40 years of age were included in the study. (Laboratory diagnosis of

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diabetes mellitus was confirmed by latest criteria laid by the American Diabetes Association (ADA).

Exclusion Criteria

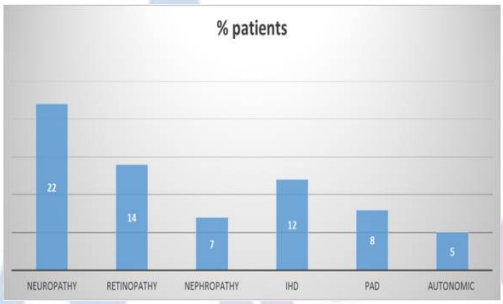
Type 1 Diabetes mellitus, patients who have been diagnosed with diabetes for more than one month, patients already on drug therapy, gestational diabetes, secondary diabetes and patients with severe infections.

- **Sample Size**: Hundred cases of newly diagnosed T2DM were included in this study.

Study design: Detailed history - age and sex, family history of diabetes were recorded. General physical examination, vital parameters such as pulse, blood pressure (in sitting and standing position) temperature and respiratory rate were recorded. Presence of skin infections, gangrene and ulcers were noted. Standard protocols were used to make the diagnosis of Microvascular - Retinopathy, Neuropathy, Nephropathy, autonomic disturbances and Macrovascular - IHD , CVA, Peripheral artery disease.

RESULTS

Males 55, Females –45, <60yrs -62 >60yrs – 38 Comorbid conditions such as hypertension 24% and dyslipidemia 35%, Obesity – 20%, and Smokers – 19%. 30% had family history of diabetes. Infection was the presenting feature in 14 cases & DKA in one case Distal symmetry sensory motor neuropathy was most common variety of neuropathy. Non proliferative retinopathy was most common variety of retinopathy. Microalbuminuria was seen in 19 cases and macroalbuminuria in 7 cases. ECG findings were normal in 88 cases. LBBB -4, old myocardial infarction -3, IHD -9 2 D ECHO showed regional wall motion abnormalities in 3 cases, HHD in 5 cases. ABI showed PAD with limb ischemia in 8 cases. No patient had stroke. Among lipid abnormalities triglycerides were > 150mg/dl in 22 patients, total cholesterol >200mg/dl in 18 patients, 10 patients had LDL >130mg/dl.



Hba_{1c} %	Neuropathy	Nephropathy	Retinopathy	Pad	Autonomic ndysfuction
6.5 - 7.5	3		1		
7.51-8.5	4		3		1
8.51-9.5	5	2	4	2	1
>9.51	10	5	6	6	3
Total	22	7	14	8	5

DISCUSSION

TYPE 2 DM is progressive illness with a long preclinical asymptomatic phase during which patients may be exposed to the ill effects of hyperglycemia for many years before they are diagnosed. The present study reconfirms this and shows that a substantial proportion of patients with TYPE 2 DM have evidence of diabetic tissue damage at the time of diagnosis of diabetes. In our study 22% of cases had microvascular complication as neuropathy, which was due to severe hyperglycemia, among which 5% were associated with autonomic neuropathy. It is comparable to the study conducted by Shukla *et al* in which 23% had neuropathy in newly detected diabetics. In study done by Sosale *et al* percentage of peripheral neuropathy was 13.15%. Karmakar *et al* have shown 9% of neuropathy at diagnosis and Rani *et al* have also reported 13% in established cases of retinopathy having neuropathy. In our study 14% of cases had retinopathy. In comparision with a study by Shukla *et al* 15% had evidence of Retinopathy. Where as study done by Sosale *et al* in which 6% had retinopathy. Percentage of nephropathy was 7% in our study which is higher than various earlier studies in India, Sosale *et al* showed 1.03% overt of nephropathy while by Unnikrishnan *et al* observed 0.8% of nephropathy. Hypertension (24%) in our study was lower than other studies in India. Shukla *et al* reported 30% of hypertension in diabetic patients. Our study was comparable with Sosale *et al* in which 23% of cases had hypertension. Dyslipidemia 35% was again higher in

comparison to other studies, In study conducted by Shukla *et al* 30% patients had dyslipidemia, Sosale *et al* reported lipid abnormalities in 23% of newly detected type 2 diabetes patient.

CONCLUSION

All cases of Type 2 DM must be investigated for early detection of chronic complications so that further progression of the disease can be prevented. Lack of awareness can also be a contributing factor in developing country like India. Once complications develop, treating hyperglycemia alone usually does not suffice and complications from diabetes can be prevented only up to a certain point, beyond, which these will progress. This underlines for the high importance of screening of all newly diagnosed T2DM patients not only for early detection of micro vascular and macro vascular complications, but also to prevent or retard the progression of complications by aggressive management. Beyond screening, education of high risk population regarding diabetes related complications must be started to encourage earlier medical consultation.

REFERENCES

1. Sosale, A., Prasanna Kumar, K. M., Sadikot, S. M., Nigam, A., Bajaj, S., Zargar, A. H., & Singh, S. K. (2014). Chronic complications in newly diagnosed patients with Type 2 diabetes mellitus in India. *Indian journal of endocrinology and metabolism*, *18*(3), 355-60.
2. Shukla V, Karoli R, Chandra R. A study of newly diagnosed type 2 diabetes mellitus patients from rural areas. J Assoc Physicians India. 2014; 62: 682-4.
3. Ali, A., Iqbal, F., Taj, A., Iqbal, Z., Amin, M. J., & Iqbal, Q. Z. (2013). Prevalence of microvascular complications in newly diagnosed patients with type 2 diabetes. *Pakistan journal of medical sciences*, *29*(4), 899-902.
4. Kumar M *et al.* Int J Res Med Sci. 2016 Jun; 4(6):2292-2296.
5. American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care 2006; 29 Suppl 1:S43-8.
6. American Diabetes Association. Peripheral arterial disease in people with diabetes. Diabetes Care 2003; 26(12): 3333-41.
7. Drivsholm T, de Fine Olivarius N, Nielsen AB, Siersma V. Symptoms, signs and complications in newly diagnosed type 2 diabetic patients, and their relationship to glycaemia, blood pressure and weight. Diabetologia 2005; 48(2):210-4.
8. Weerasuriya N, Siribaddana S, Dissanayake A, Subasinghe Z, Wariyapola D, Fernando DJ. Long-term complications in newly diagnosed Sri Lankan patients with type 2 diabetes mellitus. QJM 1998; 91(6):439-43.
9. Spijkerman AM, Dekker JM, Nijpels G, Adriaanse MC, Kostense PJ, Ruwaard D, *et al*. Microvascular complications at time of diagnosis of type 2 diabetes are similar among diabetic patients detected by targeted screening and patients newly diagnosed in general practice: the Hoorn screening study. Diabetes Care 2003;26(9):2604-8.
10. Premlatha G, Rema M, Mohan V. Complications of diabetes mellitus at diagnosis in South Indian type 2 diabetic patients. Int J DiabDevCtries 1998; 18: 1-4.
11. American Diabetes Association. Standards of medical care in diabetes. Diabetes Care 2005; 28 Suppl 1:S4-S36.
12. American Diabetes Association American Academy of Neurology. Consensus statement: Report and recommendations of the San Antonio conference on diabetic neuropathy. Diabetes Care 1988; 11(7):592-7.
13. Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J. Harrison's Principles of Internal Medicine. 18th edition, Vol. 2. McGraw-Hill: USA 2012; 344: p. 2968-3002.
14. Unwin N, Whiting D, Guariguata L, Ghyoot G, Gan D (editors). International diabetes federation, diabetes atlas. Fifth Edition, International Diabetes Federation, Brussels, Belgium; 2011: 11-74.
15. Adler AI, Stevens RJ, Manley SE, Bilous RW, Cull CA, Holman RR, *et al*. Development and progression of nephropathy in type 2 diabetes. The United Kingdom prospective diabetes study (UKPDS 64) Kidney Int. 2003; 63: 225-32.
16. Rema M, Premkumar S, Anitha B, Deepa R, Pradeepa R, Mohan V. Prevalence of diabetic retinopathy in urban India: the Chennai urban rural epidemiology study (CURES) eye study, 1. Invest Ophthalmol Vis Sci. 2005; 46(7):2328-33.
17. Karmakar RN, Khandakar MR, Gangopadhyay PK, Ghosh K, Babu AS. Albuminuria and neuropathy in newly detected diabetics: profile and correlation. J Indian Med Assoc. 2011; 109: 396-9.
18. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. Diabetes Care. 2004; 27: 1047-53.
19. Tălu S, Kaucsar E, Soreanu A. Diabetic retinopathy in newly diagnosed patients with type II diabetes mellitus. Oftalmologia 2002; 54: 27-30.
20. Rema M, Pradeepa R. Diabetic retinopathy: An Indian perspective. Indian J Med Res 2007; 125: 297-310.

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