International Journal of Basic and Applied Medical Sciences ISSN: 2277-2103 (Online)
An Open Access, Online International Journal Available at http://www.cibtech.org/jms.htm
2017 Vol. 7 (2) May-August, pp. 32-34/Naveen and Krishna
Research Article

THE PATTERN OF PERIPHERAL NERVE INVOLVEMENT IN TYPE II DM OF MORE THAN 5YRS DURATION

***Naveen M and Krishna N**
Department of Medicine, BGS GIMS, Bengaluru
**Author for Correspondence*

ABSTRACT
Diabetic neuropathy is common complication of Diabetes mellitus, it is generally considered to be related to duration and severity of hyperglycemia, usually, more than 50% of patients with the duration of diabetes of 25yrs or more are affected, making it as the most common disease of Nervous system. This has been stressed by various studies. A total of 50 patients with Type 2 DM who were diagnosed on the basis of ADA criteria or who were taking treatment for Diabetes and having signs and symptoms of neuropathy were included in the study. The objective of the study is to study the pattern of peripheral nerve involvement in type II DM > 5yrs duration.

Keywords: *Diabetic Neuropathy, Hyperglycemia, Type 2 DM*

INTRODUCTION
Diabetes mellitus is the most common endocrinal metabolic diseases. The impact of this disease on the quality of life, on morbidity and mortality due to micro and macro vascular complications, that resulting in retinopathy, nephropathy, neuropathy, ischemic heart disease, has been emphasized by the findings of the national commission (USA) on diabetes and DCCT trial (DCCT Research Group, 1995). Diabetes Neuropathy is one of the commonest causes of Peripheral Neuropathy. It accounts for hospitalization more frequently than the other complications of the Diabetes mellitus and is the most frequent cause of non-traumatic amputation. Diabetes autonomic neuropathy accounts for silent myocardial infarction and shortens the life span resulting in death in 25-50% of patients within 5-10yrs of Autonomic diabetic Neuropathy (Mohan *et al.,* 1996). The diagnosis of subclinical Diabetic neuropathy requires Electro diagnostic testing and quantitative sensory and autonomic testing. Diabetic neuropathy has been defined by the consensus conference of San Antonio as peripheral neuropathy either clinically evident or sub-clinically that occurs in the setting of diabetes mellitus without other causes (American Diabetes Association, 2010).

MATERIALS AND METHODS
The study includes all type 2 diabetics from OPD'S and IPD'S in the department of medicine MVJ MC & RH, HOSKOTE in the period between august 2010 to September 2012.
Inclusion Criteria: Patients who full fill ADA criteria for diagnosis of diabetes, Diabetics of more than 5 years were selected for further evaluation of neuropathic Symptoms/signs.
Exclusions Criteria: Nutrition deficiency, Alcoholism, Leukemia, Infectious diseases, Chronic renal failure, Occupational diseases, Type 1 Diabetes mellitus, Unilateral reflex loss.
A detailed history was taken and examination done as per the proforma. With detailed emphasize on peripheral nervous system involvement, including cranial autonomic involvement-for target organ involvement due to diabetes. All patients in addition to hematological and routine work up. All patients under went nerve conduction studies for assessment of peripheral nerve involvement, reading of ENMG was done with the help of neurologist. Following investigations were carried out FBS, PPBS, HbA1c, CBC, Urine routine, ESR, ECG, RFT, LFT, Autonomic function test, Nerve conduction study.
Patients were diagnosed based on the ADA criteria for diabetes (American Diabetes Association, 2010).
Symptoms of diabetes plus random blood glucose concentration of 11.1 mmol/L (200 mg/dL) or Fasting plasma glucose of 7.0 mmol/L (126 mg/dL) or Two-hour plasma glucose of 11.1 mmol/L (200 mg/dL) during an oral glucose tolerance test.

Subjects included people who are already on treatment for diabetes.

RESULTS AND DISCUSSION

Results

In this study, 50 diabetic patients of more than 5 years duration were screened clinically for peripheral neuropathy and proved with nerve conduction study. Mean age of all 50 patients is 58.27±11.52 years. Diabetic neuropathy was found commonly in the age group of 56 to 65 years that is 23 patients 46%, males 11 patients (22%) and females 12 patients (24%). Types of neuropathy were

Table 1: Types of Diabetic Neuropathy Observed

Patients were as Follows	No of Cases	Percentage
Distal symmetrical sensory neuropathy	36	72
Distal symmetrical sensori-motor neuropathy	4	8
Autonomic neuropathy	16	32
Cranial neuropathy	1	2

Distal symmetrical sensory neuropathy was most commonest type found in 36 patients (72%).

Discussion

In our study out of 50 diabetic patients, symptoms of neuropathy were present in 40 patients (80%). The symptoms with which the patients with neuropathy presented are Burning feet in 20 patients (40%), Tingling sensation of limbs in 11 patients (22%), numbness of limbs in 5 patients (10%), Weakness of limbs in 4 patients (8%), both tingling and numbness in 10 patients (20%) and postural giddiness in 12 patients (24%), the commonest symptoms was burning pain at night hours in 20 patients (40%), mean duration of diabetes in these patients is 9.54 ± 3.65 years.

In Study done by Sumner *et al.*, (2004) out of 73 diabetic patient they have found prevalence of Neuropathy in 56% of patients. In another Study done by Ashok *et al.*, (2002) prevalence of diabetic Neuropathy was 19.1% out of 1000 consecutive diabetic patients who have visited there diabetic Centre. In Study done by Boyraj *et al.*, (2010). Average age of Development of peripheral Neuropathy in Diabetic patient was 57+9.9 year.

In our study incidence of neuropathy is more in age group of 58.27±11.52 year. In Study done by Rathmann *et al.*, (1993) diabetic autonomic neuropathy accounts for silent myocardial infarction and shortens the life-span, resulting in death in 25-50% of patients with in 5-10 years of autonomic neuropathy. Study done by Mitrabasu *et al.*, (2011), found that out of 82 diabetic patients studied 42 patient had peripheral neuropathy and 8 patients had autonomic dysfunction that shows 54.0%. Patients had peripheral neuropathy and Autonomic Involvement in 10.8%.

Conclusion

Peripheral neuropathy is most common micro vascular complication of type 2 diabetes mellitus. Symptoms of sensory system involvement were the most common, seen in 40(80%) patients, followed by motor symptoms seen in 8 (16%) cases, Autonomic symptoms 12 (24%) cases and cranial nerve symptoms 1 (2%) case. Longer the duration and poorer the control of blood sugars, more are the chance of development of the diabetic peripheral neuropathy.

REFERENCES

American Diabetes Association (1988). American academy of neurology consensus statement. Report and recommendations of the San Antonio conference on diabetic neuropathy. *Diabetic Care* **11** 592-7.

American Diabetes Association (2010). Diagnosis and Classification of Diabetes Mellitus. *Diabetes Care* **33** S62-S69.

Ashok S, Ramu M, Deepa R and Mohan V (2002). Prevalence of Neuropathy in Type 2 Diabetic Patients Attending a Diabetes Centre in South India. *Journal of the Association of Physicians of India* **50**.

Boyraj O *et al.*, (2010). The effect of obesity on the assessment of diabetic peripheral neuropathy: a comparison of, michigan patient version test and Michigan physician assessment. *Diabetic Research And Clinical Practice* (2010) 256-260

DCCT Research Group (1995). The effect of intensive diabetes therapy on the development and progression of neuropathy. *Annals of Internal Medicine* **122** 561–8.

Mitrabasu *et al.*, (2011). Association of diabetic neuropathy with clinical and laboratory parameters in adult Indian subject. *The Indian Practitioner* **64**(3) 139-144.

Mohan V, Sasthry NG and Premalatha G (1996). Autonomic dysfunction in non insulin dependent diabetes mellitus and fibrocalculus pancreatic diabetes in South India. *Diabetic Medicine* **13** 1038-1043.

Rathmann W *et al.*, (1993). Mortality in diabetic patients with cardiovascular autonomic neuropathy. *Diabetic Medicine* **10** 820-4.

Sumner CJ, Sheth S, Griffin JW, Cornblath DR and Polydefkis M (2004). The spectrum of neuropathy in diabetes and impaired glucose tolerance. *The National Medical Journal of India* **17**(4) 206.