PREVALENCE AND IMPACT OF PAINFUL DIABETIC PERIPHERAL NEUROPATHY IN PATIENTS WITH TYPE-2 DIABETES MELLITUS WITH LOW ECONOMIC STATUS

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ABSTRACT

Objectives: The objectives of the study were to study the prevalence of painful diabetic peripheral neuropathy (PDPN) in patients with type-2 diabetes and to access the health-related quality of life of patient by collecting and documenting the information of patient using sf-15 questionnaire.

Methods: The present study involves prospective analysis of quality of life in both men and women with PDPN with type-2 diabetes. The methodology involves collection and documentation of patients medical and medication history, blood glucose levels, and duration of diabetes. Further, the quality of life of patient is documented using Michigan neuropathic scaling instrument (sf-15 questionnaire) through which we can assess the impact of PDPN.

Results: It can be seen that there are no significant changes in the prevalence of PDPN when compared gender wise and based on age, but there are an extremely statistically significant (*p<0.05) values obtained when the presence of PDPN is compared between duration of diabetes.

Conclusion: Patients with duration of diabetes type-2 between 5 and 10 years are mostly presented with PDPN. Early detection, nutritious diet, and patient counseling help in management of PDPN.

Keywords: Painful diabetic peripheral neuropathy, Type-2 diabetes, Questionnaire, Quality of life, Patient counseling.
obtaining informed consent form from the patient. This study was approved by the institutional ethics committee IEC/DOPV/2016/14.

RESULTS

The following results were obtained when the data were collected from the patient.

Of 100 type-2 diabetic patients involved in the study, 57 patients have PDPN (male - 26, female - 31) and 43 patients do not have PDPN (male - 17, female - 26) (Table 1 and Fig. 1).

Of 100 patients, 57 patients are reported with PDPN where 16 patients (28%) were in age group of 35–45 years, 20 patients (35%) were in age group of 46–55 years, and 21 patients (36%) were in age group of 56–65 years (Table 2 and Fig. 2).

Of 100 diabetic patients, patients who are having diabetes from up to 10 years, 30 members have presented with PDPN and 34 patients do not have PDPN. Patients who are having diabetes from more than 10 years, 27 have presented with PDPN and 9 patients do not have PDPN (Table 3 and Fig. 3).

Table 4 and Fig. 4 summarizes there is no significance of the prevalence of PDPN when related to gender, in the given population. With 95% confidence interval (CI) *p=0.5432 [NS], two-sided study using Chi-square, statistically not significant (α<0.05).

Table 5 and Fig. 5 summarizes there is no significance of the prevalence of PDPN when related to age group in given population. With 95% CI *p=0.2665 [NS], two-sided study using Chi-square, statistically not significant (α<0.05).

Table 6 and Fig. 6 summarizes there is high significance of the presence of PDPN in the given population, as most of the patients participated in study belonged to group having diabetes for <10 years. With 95% CI *p=0.0064, two-sided study using Chi-square, statistically significant (α<0.05, p=0.0064).

DISCUSSION

PDPN is caused due to nerve damage [9]. As patients with type-2 diabetes are mostly prescribed with metformin for regulating the sugar levels, long-standing use of metformin is also one of the root causes of loss of nerve function which causes malabsorption of Vitamin B12 [10]. Low serum levels of Vitamin B12 are observed in patients who take 2 g of metformin per day for at least 2 years [11]. Uncontrolled sugar levels in blood also causes nerve damage leading to neuropathy, but sugar levels can be controlled using hypoglycemic agents on time and maintaining healthy food habits and regular exercise [12]. Although the patients with poor economic status are given with free treatment and vitamin supplements, lack of knowledge regarding the use of the drug, and less patient education, many patients with type-2 diabetes fail to take nutritious food and vitamin supplementation, especially B12 [13]. Results of the project show that a total of 100 diabetic patients study belonged to group having diabetes for <10 years. With 95% CI of studied sample, these results were similar with the results reported by dr. Farooq Ahmed (vol. 08 no. 16 Supplement P4.650) [14]. The mean age for the presence of PDPN in type-2 diabetic patients is 51.3 years. Female patients are reported relatively high than male patients. Most of the patients with PDPN are in age group of 51–65 years [15]. Patients who are having diabetes for more than 10 years are presented with less symptoms of PDPN and most of the patients with PDPN have diabetes for <10 years [16]. This is due to improper intake of medication, lack of nutritional intake, lack of B12 supplementation, and many such factors [17]. Patients with diabetes for more than 10 years have been taking proper B12 supplementation and limited amount of food which made them lead a healthy lifestyle. We can reduce the prevalence of PDPN by educating the patients regarding regular medication intake, taking proper B12 supplementation and limited amount of food which made them lead a healthy lifestyle.
nutritional intake to be taken, maintaining glucose levels in the body, and modifications regarding lifestyle.

CONCLUSION

Patients with type-2 diabetes for more than 2 years with poor economic status lacked proper nutritional supplementation, especially Vitamin B12, which is leading cause of neuropathy. PDPN showed a negative impact on patients’ quality of life and affected the basic regular activities performed by the patient.

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REFERENCES


