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Research Article

**STUDY TO KNOW THE MANAGEMENT OF DIABETIC
PERIPHERAL NEUROPATHY WITH VITAMIN B1, B6 AND
B12 GIVEN IN COMBINATION AND ITS EFFICACY**¹Dr. Rida Muhammad Ashraf, ²Dr. Sohail Iqbal, ³Dr. Tayyaba Malik¹Fatima Jinnah Medical College, Lahore²(ELAM) Latin American School of Medicine, Cuba³Islamabad Medical and Dental College, Islamabad**Abstract:**

Objective: To ascertain the vitamin B1, B6 and B12 efficacy given in combination in the treatment of diabetic peripheral neuropathy.

Study Design: A series of descriptive cases.

Place and Duration: In the Medical unit II of Jinnah Hospital Lahore for one year period from June 2017 to June 2018.

Methods: A total of 310 patients with sample size selected using unintentional sampling technique. Patients with diabetic peripheral neuropathy, diabetes mellitus, Metabolism and Endocrinology problem were selected. Volunteers were given Neurobion Tab (100 mg vitamin B1, 100 mg vitamin B6, 200 mcg vitamin B12) two times daily for 28 days (4 weeks). After 4 weeks of initial visit patient was called for follow-up. It was concluded that the efficacy was documented with an improvement in minimum 2 pain points from the baseline evaluated by the numerical pain rating scale.

Results: The patients mean age was 46.7 ± 8.6 . Of the 310 patients, 177 (57.0%) were male and the remaining female 133 (42.90%). The diabetes duration was as follows: 0-10 years in 84 patients (27.08%), 11-20 years in 138 patients (45.08%) and 21-30 years in 76 patients (25.28%) and only (3.6%) > 30 years. In the treatment of diabetic peripheral neuropathy, B1, B6 and B12 combination was found to be effective in 270 patients (86.94%).

Conclusion: In diabetic peripheral neuropathy treatment B1, B6 and B12 given in combination is effective in pain relief.

Key words: Vitamin B1, B6 and B12, Diabetic peripheral neuropathy.

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INTRODUCTION:

Diabetes mellitus is a hyperglycemia syndrome due to lack of activity or resistance to insulin due to inertia. Complications may be microvascular or macrovascular. The diabetes mellitus most common microvascular complication is Painful diabetic peripheral neuropathy. Diabetic neuropathy is a disabling and common diabetes mellitus complication and is linked with high morbidity. Diabetes mellitus affects patients with type 1 and Type 2. At least one is affected by symmetric polyneuropathy. As the disease time increases the prevalence increases; Neuropathy will develop in about 50% of patients with diabetes for twenty five years. The symptomatic neuropathy Treatment may include tricyclic antidepressants, opioid analgesics, serotonin reuptake selective, serotonin reuptake inhibitors, and anticonvulsant or norepinephrine selective inhibitors. Various therapies can be used as combination therapy or individual therapy to decrease symptomatic pain, dysesthesia and paresthesia. These agents include pyridoxine, folic acid, methylcobalamin, taurine, biotin, alpha-lipoic acid L-arginine and others. Vitamin B12 plays a important part in the essential fatty acids metabolism for the maintenance of myelin sheath of nerves. Thiamine plays a role in the diffusion of coenzyme independent of nerve impulses. The pyridoxal phosphate in the vitamin B6 form is therefore involved in the biosynthesis of the sphingolipids and neurotransmitter, which plays a role in all neuropathies. Both monotherapy and combination therapy reduce the level of homocysteine in plasma / serum and decrease neuropathic symptoms, with B vitamins combination therapy appear to be much effective.

MATERIALS AND METHODS:

This series of descriptive cases was held in the Medical unit II of Jinnah Hospital Lahore for one year period from June 2017 to June 2018. A total of

310 patients collected using a probabilistic sampling technique. Patients with diabetic peripheral neuropathy, diabetes mellitus, Metabolism and Endocrinology disorder were selected. The calculated sample size was 310 patients, with a 95% margin reliability level, a 3.5% error margin, ie, the efficacy of vitamin B1, B6 and B12 in the diabetic neuropathy treatment. Diabetes mellitus patients with diabetic peripheral neuropathy aged 18) 60 years from both sexes and 3 or more scoring scale (NRS) were chosen. Patients with previously known history of HbA1c 9%, creatinine 1.5 mg / dl, vitamin B1, medical evidence of soluble B6 or B12 water allergy, were previously excluded from the study of patients and analgesics in the history of available drugs. Patients who met the exclusion and inclusion criteria were selected after written informed consent. The importance and procedure of the study was explained to each patient. Prior to the intervention, the investigator measured the patient's symptoms using a score scale of 3 or more using a numerical pain rating scale [NRS]. Patients were advised Neurobion Tab (100 mg vitamin B6, 200 mcg vitamin B12, 100 mg vitamin B1s) two times a day for 28 days. After 4 weeks of initial visit patient was called for follow-up. It was concluded that the activity documented an improvement in at least 2 pain points from the baseline evaluated by the numerical pain rating scale. All subjects were evaluated by NRS researchers to prevent bias. The regulators of the effect, such as the duration of diabetes, were treated with stratification.

RESULTS:

According to the distribution of age, below 20 years old patients were 16 (5.1%), Between 20 and 40 years of age there were 77 patients (25.09%) and between 41 and 60 years of age there were 217 patients (70.0%). The mean age was 47.07 ± 9.06 years. (Table 1).

Table 1: Distribution of cases by age (n = 310)

Age (Year)	=n	%age
< 20	16	5.1
20-40	77	24.9
41-60	217	70.0
Mean±SD	46.7±8.6	

Of the 310 cases, male were 177 (57%) and the female were remaining 133 (43%) (Table 2).

Table 2: Distribution of cases by gender (n = 310)

Gender	=n	%age
Male	177	57.0
Female	133	43.0

The diabetes mellitus duration was as follows: 0-10 years in 84 patients (27.08%), 11-20 years in 138 patients (45.08%) and 21-30 years in 76 patients (25.28%) and only (3.6%)> 30 years. in 12 patients (Table 3).

Table 3: Duration of diabetes

Duration of diabetes (Year)	=n	%age
0-10	83	26.8
11-20	139	44.8
21-30	77	24.8
> 30	11	03.6

In the treatment of diabetic peripheral neuropathy, B1, B6 and B12 combination was found to be effective in 270 patients (86.94%) (Table 4).

Table-4: Distribution of cases by efficacy

Efficacy	=n	%age
Yes	271	87.4
No	39	12.6

DISCUSSION:

The most important symptoms of diabetic peripheral neuropathy is Painful diabetic peripheral neuropathy (PDPN). With diabetic peripheral neuropathy in about 50 percent of patients RPDP occurs and significantly alters the patients' quality of life; it interferes with sleep and causes depression and anxiety disorders. The pharmacological RPDP treatment is with agents as inhibitors of anticonvulsant, tricyclic antidepressants (TSA), norepinephrine or serotonin (SNRI) and reuptake of opioid analgesics has proven to be effective. The main objective is to achieve an optimal glycemic control to prevent worsening of the complication. Studies have shown that it is not the optimal commitment to drugs for OAD to assess the compliance of diabetic patients with oral antidiabetic drugs (for its abbreviation in ADO, English). In previous studies comparing compliance between diabetic patients, a more advantageous adjustment was found when a single tablet per day was compared to more than one pill per day. It has also been shown that subjects in monotherapy are more dependent on their regimens than poly treatment. The simplest regimens of medicine have been proven with good result rates, and the combination of fixed dose treatment has also been proven with a better outcomes. There are several neuropathic patients treatment options for patients presently. However, the

most common options of treatment are effective and mostly include prescription drugs, injection therapy and the use of physical therapy. Early diagnosis and management of the underlying cause may reduce the risk of continuous nerve damage. For example, diabetes control can reduce diabetic neuropathy, in many cases, improving chronic renal failure, renal dialysis neuropathy. Drugs can only temporarily reduce pain and do little or no to treat the underlying condition completely. They can provide a short-term drug, but as the disease progresses, an effective dose of the drug may be necessary to continue to suppress the increased pain. These drugs The side effects are not easy to manage and results in increases patient's discomfort. The patient with the highest drug dose may be confused, non-toxic, constipated, wheeled or stuck in bed. Symptoms or symptoms very similar to Alzheimer's disease may follow. Vitamin B12 was considered a remedy for diabetes neuropathies. It has now been discovered that vitamin B12 is an effective treatment for pain and paresthesias minimized by treatment with diabetic peripheral neuropathy. The disadvantages of this study were as follows: small sample size compared to the diabetes mellitus prevalence. Vitamin B1, B6 and B12 levels were not performed before and after treatment to see if there was any vitamins deficiency and pain recovery was caused by a better deficiency. In this analysis, only patients with painful neuropathy were studied and

their effects on drowsiness, tingling and affective symptoms were not investigated. In addition, a more objective evaluation of neuropathy healing was performed using electrophysiological parameters, evaluating neuropathy healing, using a numerical pain rating scale.

CONCLUSION:

It is concluded that diabetic neuropathy management with the Vitamin B1, B6 and B12 given in combination reduce pain in patients effectively. However, high-quality double-blind RCTs are needed to ensure the clinical vitamin B1, B6 and B12 efficacy and the active coenzyme combination.

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