



CLINICAL EFFICIENCY OF ALPHA-LIPOIC ACID (THIOCTACID, THIOGRAMMA) IN PATIENTS WITH DIABETIC POLYNEUROPATHY (PART TWO)

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ABSTRACT

32 patients of an average age of 65, 2 years, suffering from diabetic polyneuropathy which originated from Type II diabetes and treated parenterally with Alpha-Lipoic Acid (Thioctacid, Thiogramma) were studied. The somatic and neurological status was assessed in all patients. EMG test was conducted. Considerable improvement of the subjective complaints and of the neurological status was found. The EMG test showed considerable improvement as well.

Key words: diabetes, diabetic polyneuropathy, Alpha-Lipoic Acid

INTRODUCTION

Diabetes is a common disease in industrialized countries. Diabetic polyneuropathy is a frequent complication of the Type II diabetes, especially in cases with poor glycemic control. Diabetic polyneuropathy is observed in two clinical forms:

- Distal, mainly sensory polyneuropathy (more frequent);
- Distal, symmetrical sensimotor polyneuropathy.

Myelinated and non-myelinated nerve fibers are damaged in sensory polyneuropathy. Patients complain of burning pains in the lower limbs especially at night, numbness and a condition described as “bugs crawling”. Objective neurological examinations find bilateral lack of tendon reflexes and disturbance of the vibratory sensation. Along with the sensory disorders motor, sensory and vegetative symptoms (hypo- to anhidrosis, foot trophic ulcers, etc.) are found in the mixed type of the disease. Cranial polyneuropathies affecting most frequently the oculomotor nerves (III, IV,

VI cranial nerves) are often observed. About one fourth of the cases show that light and moderate forms of diabetic polyneuropathy are not estimated correctly and treated in time – a very important tendency in view of the fact that serious conditions are not subject to adequate treatment.

The present study aims at investigating the clinical efficiency of Alpha-Lipoic Acid (Thioctacid, Thiogramma) in patients with diabetic polyneuropathy.

MATERIALS AND METHODS

32 patients (14 men and 18 women of an average age of 65, 2 years) suffering from diabetic polyneuropathy which originated from Type II diabetes with a duration of several years were studied. The patients were treated in the Clinic of Neurology for the period 2011-2012. Alpha-Lipoic Acid was administered parenterally only once for 7-10 days.

The somatic and neurological status was assessed in all patients. Blood sugar profile was conducted before and after the treatment. The pain intensity was evaluated with a visual analogue scale (VAS). Electromyographic tests with a SIGMA NEUROWERK apparatus were carried out. Stimulating EMG (NC) was used. Skeleto-muscular action potentials (SMAP)

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and Sensory nerve action potentials (SNAP) were assessed using surface electrodes.

RESULTS AND DISCUSSION

The subjective complaints and the neurological symptoms in the patients assessed showed a direct connection with the seriousness and duration of the diabetes and the treatment provided. All patients complained of tingling of the toes, foot burning and painful shank paralysis, especially at night. 11 patients, suffering from diabetes for a longer period of time reported numbness of the fingers as well. 9 patients suffered from expressed pains in the lower limbs, while 8 complained of unstable gait. The objective neurological examinations showed reduced or missing tendon reflexes in all patients. Sensory disturbances – mainly hypesthesia or hyperesthesia for pains of distal type were found in almost all patients. Only 8 patients suffered from coordination disorders.

The pain intensity measures with VAS averaged between 8, 5 and 6 units. After the administered treatment it was reduced with 1-2 units.

The EMG sensory disorders were summarized in three groups. The results, showing sensimotor polyneuropathy were the most frequent – found in 14 patients. The distal sensimotor polyneuropathy of axonal type was observed in 10 patients. Distal sensimotor polyneuropathy with axonal degeneration was found in 8 patients.

CONCLUSION

Our patients showed considerable improvement of the subjective symptoms, the objective neurological manifestations and the quantitative EMG indices as well as considerable pain relief, estimated with the visual analogue scale – a tendency which corresponds to other similar findings. The timely and adequate diabetes treatment, apparent from the control glycemic profile, proved of significant importance.

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On discharge from the hospital the patients were administered outdoor treatment with Thioctacid HR with the aim of reaching a lasting healing effect.

REFERENCES

1. Manchev, I., Nikolov, N., Mancheva, V., Valcheva, V. Modern treatment of diabetic polyneuropathy. Bulgarian medical practice, 2008, 7, 6-7.
2. Young M.J. et al., Diabetic Neuropathy: Symptoms, Signs and Assessment. In Diabetic Neuropathy (A.J.M. Boulton editor) Marius Press 1996 ISBN 1-8711622-077.
3. Low P.A. et al., Peripheral Nerve Energy Metabolism in Experimental Diabetic Neuropathy. Neuroscience Research Communication, Vol. 21, No. 1, 49-56, (1997).
4. Ziegler D. et al., Treatment of Symptomatic Diabetic Peripheral Neuropathy with the Antioxidant Thioctic Acid (alpha-Lipoic Acid). A Three-Week Multicentre Randomized Controlled Trial (ALADIN Study). Diabetologia, 38, 1425-1433, (1995).
5. Ziegler D. et al., Treatment of Symptomatic Diabetic Peripheral Neuropathy with the Antioxidant Thioctic Acid (alpha-Lipoic Acid). A 7-month Multicentre Randomized Controlled Trial (ALADIN III Study). Diabetes Care Vol. 22, No. 8, 1296-1301, (1999).
6. Ziegler D. et al., Effects of Treatment with the Antioxidant Thioctic Acid on Cardiac Autonomic Neuropathy in NIDDM Patients. Diabetes Care, 20, No. 3, 369-373, (1997).
7. Konrad et al., alpha-Lipoic Acid Treatment Decreases Serum Lactate and Pyruvate Concentrations and Improved Glucose Effectiveness in Lean and Obese Patients with Type II Diabetes. Diabetes Care, 22, No. 2, 280-287, (1999).