Benfotiamine efficiency in the stabilization of diabetic peripheral polyneuropathy

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Abstract

One of the most frequent complications of diabetes is diabetic sensorimotor peripheral polyneuropathy (DSPN). B vitamins successfully used for the treatment DSPN. However, prolonged use of vitamins B6 and B12 in effective doses limited by the comorbidities and possibility of the neurotoxic reactions development, as for vitamin B1, its low bioavailability of water-soluble forms. This determines whether the use of fat-soluble form of benfotiamine with maximum bioavailability.

Objective

To evaluate the efficacy of using benfotiamine monotherapy (Milgamma mono) in the stabilization of DSPN after achieving therapeutic result

Materials & Methods

The study included 34 patients with DSPN. All patients obtained Milgamma injections N5 and then Milgamma dragees (3 tablets per day) for a month. After washout period, the patients were divided into 2 groups:

Group 1 - stopped treatment after achieving a therapeutic effect (n = 21),

Group 2 - continue treatment with Milgamma mono 300 per day for 2 months (n = 13).

Rating pain in legs conducted by visual analog scale (VAS), and the severity of DSPN rated on standard scales NSS, TSS, NDS and electromyography (EMG).

Results & Discussion

The significant positive trend in all performance indicators were registered after washout period in all patients included in the trial. After randomization into groups and by the end of treatment in group 2 there was a significant positive trend compared to group 1 and the initial result.

Dynamics of indicators after two phases of the study

	Before treatment M±SD	After treatment Milgamma M±SD	Group 1 M±SD	Group 2 M±SD
VAS day	2,8±1,87	**1,14±1,28***	1,4±0,97	**0,5±0,97*#**
VAS night	1,1±1,19	**0,95±0,99***	0,99±0,42	**0*#**
NDS	8,3±3,43	**6,27±3,9***	6,7±3,37	**5,1±2,96*#**
NSS	5,7±1,64	**2,73±1,69***	2,1±1,52	**0,2±0,63*#**
TSS	5,63±2,55	**1,94±1,44***	1,5±0,71	**0,1±0,32*#**

•p <0.05 compared to the original result
# P <0.05 compared with group 1

Dynamics of EMG indicators

	Original right	Original left	Group 1 right	Group 1 left	Group 2 right	Group 2 left
The amplitude of M-response n.peroneus (mV)	3,83±1,46	3,24±1,39	3,55±1,71	3,48±2,41	4,13±2,23	**5,18±4,61#**
The amplitude of M-response n.tibialis (mV)	4,53±1,16	4,5±1,13	5,33±2,14	4,87±2,78	7,4±4,3	**6,8 ±3,86#**
The speed of nerve impulse n.peroneus (m/s)	3,83±1,46	3,24±1,39	3,55±1,71	3,48±2,41	4,13±2,23	**5,18±4,61#**
The speed of nerve impulse n.tibialis (m/s)	47,66±15,2	47,5±7,7	45,89±18,9	51,8±11,6	**52,6±14,7#**	44,8±18,9
The amplitude of the action potential n.suralis(mcV)	5,47±3,59	5,01±2,87	5,21±2,22	4,98±3,24	5,87±3,64	6,01±4,63
The speed of nerve impulse n.suralis(m/s)	62,7±15,7	61,5±15,1	63,7±23,1	59,8±24,9	61,9±22,1	64,0±19,3

•P <0,05 vs. initial values of group 1
# P <0,05 vs. initial values of group 2

Summary

1. The using injectable form of Milgamma then assigning Milgamma pills leads to the improvement of both subjective and objective criteria DSPN, but the efof treatment is not preserved after its termination within 2 months of observation.
2. The using Milgamma Mono maintains the therapeutic effect among the patients with DSPN after 2 months of reception.

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