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Observation of the Effectiveness of Treating Diabetic Peripheral Neuropathy by Lumbrokinase

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Peripheral Neuropathy is a very common complication in Diabetes. The clinical occurrence is about 60% to 90%, and is difficult to treat. Our department has applied lumbrokinase with the treatment of controlling blood sugar and nourishing nerves on 36 patients, and has satisfying results.

1. Clinical Data

1.1 General Information: 57 cases of DM patients are all inpatients and conform to the WHO diagnostic standards (1998). All cases are diagnosed and qualified for the DM peripheral neuropathy: 1. Abnormal sensation in lower extremities such as tingling, formication, burning and sharp pain. 2. Motor nerve neuropathy such as decreased muscle tone and/or decreased muscle strength. 3. Knee and achilles deep tendon reflex reduced or disappeared. All cases are divided into treatment group and control group randomly. There are 36 cases in the treatment group, 20 males and 16 females with age from 26 to 67 (average of 42.6±10.3). There are 4 cases of type I diabetes and 32 cases of type II diabetes. There are 21 cases in the control group, 12 males and 9 females with age from 30 to 60 years old (average of 43.6±10.2). There are 3 cases of type I diabetes and 18 cases of type II diabetes. There is no significant difference in age, gender and diabetes type between two groups.

1.2 Treatment method: Apply vitamin B1 20 mg 3 tid, muscle injection of vitamin B12 500μg once a day on top of diet control and blood sugar lowering drugs, and treatment group has lumbrokinase 460 mg tid 30 minutes before meal. One treatment schedule is 4 weeks.

1.3 Evaluation: 1. Effective: abnormal sensations, decreased muscle tone and strength improved or disappeared; improvement in knee and achilles deep tendon reflex. 2. Ineffective: no improvement in abnormal sensations, decreased muscle tone and strength; no improvement in knee and achilles deep tendon reflex.

1.4 Statistics: Apply US SPSS 10.0 statistic software to analysis data. *t* or *t'* diagnosis is used to compare age and biochemical indicators between two groups. X^2 or fisher dignosis are used for age and nerve system improvement.

2. Result

2.1 See table 1 for the improvement of peripheral neuropathy symptoms and signs of the two groups.

Table 1 The comparison of the effectiveness of peripheral neuropathy between treatment and control groups (%)

	n	Effective	Ineffective	Percentage of effectiveness
Treatment	36	33	3	91.6
Control	21	7	14	33.3

Table 1 indicates that there is significant difference between two groups (X^2=21.56, P<0.01). It explains that lumbrokinase is effective in treating diabetic peripheral neuropathy.

2.2 See table 2 for the comparison of the improvements of blood cholesterol and blood sugar between two groups.

Table 2 The change of biochemical indicators between treatment and control groups ($x\pm s$)

	cholesterol (mmol/L)	Triglycerol (mmol/L)	Blood sugar (mmol/L)
Treatment	5.39±1.87	2.50±0.35	6.35±2.16
Control	5.55±1.34	2.83±0.91	6.97±2.21
t value	0.547	1.95	1.03
p value	>0.05	>0.05	>0.05

Table 2 indicates that there is no significant difference between two groups.

3. Discussion

The onset of peripheral neuropathy of diabetes is the result of multiple factors such as metabolic factor and vessel factor. The block of microcirculation and abnormal hemodynamics play important roles in its onset and development.

Lumbrokinase is a multiple-enzyme formula which can dissolve fibrin directly as well as activate plasmin, inhibit platelet aggregation and dilate capillaries to improve microcirculation and nerve conduction. The mechanism of lumbrokinase's improvement of diabetic peripheral neuropathy might be related to this function. This research which applies lumbrokinase on diabetic peripheral neuropathy has reached effective results. Lumbrokinase is convenient to use and has less side effects, and is worthy to promote in clinical application.

Reference:

1. Ye, Ren-Gao. Internal Medicine. (Reference book for National Medical College). 5th Edition, Bei-Jing. People's Health Publisher, 2000: 807-810
2. Huang, gui-Xin. Ho, Shan. Zhu, Bin etc. The Effect of Urokinase on 63 Cases of Diabetic Peripheral Neuropathy. China Journal of Applied Internal Medicine, 1995. 15(12): 738-739