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# EFFECT OF THE MONGOLIAN MEDICINE "GARLICLAXATIVE" IMPACT THERAPY ON ALCOHOLIC PERIPHERAL NERVE

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## ABSTRACT

**Objective:** Using the Mongolian medicine "Garlic laxative," impact therapy on alcoholic peripheral neuropathy treatment mechanism for the Mongolian medicine application in the study of neurological diseases lay the foundation. **Methods:** Randomly selected 50 adult male rats as experimental animals and divided into some groups such as control group (Con group), model group (Model group), Methycobalgroup (Mecbl group), "Garlic change laxative" side group (Garlic group) and thecombinedmethycobal "Garlic laxative" group (Mecbl + Garlic group), 10 models in each group. **Results:** Electrophysiological test results showed that the conduction velocity of the sciatic nerve in rats was significantly slowed down after model establishment (P <0.05), and the nerve conduction velocity in model group was the slowest after the model was established. The nerve conduction velocity in Mecbl + Garlic group was the fastest Model group, Mecbl group and Garlic group (P <0.05), slightly higher than Con group, but no significant difference (P> 0.05). ELISA results showed that after model establishment, the expression of nerve growth factor (P <0.05). After the administration, the concentration of nerve growth factor in the model group was the lowest. Moreover, the nerve growth factor in Mecbl + Garlic group was the highest, significantly higher than that in Model group, Mecbl group and Garlic group (P <0.05) Mecbl + Garlic group compared with Con group, slightly higher but no significant difference (P> 0.05). **Conclusions:** The rat models of alcoholic axial neuropathy were established and treated for eight weeks respectively. The indexes of 5 rats were evaluated. The nerve conduction velocity was detected by the electrophysiological method and the enzyme-linked immune-sorbent assay Concentration of Nerve Growth Factor in Rats. Thus prove the Mongolian medicine "Garlic laxative" has a significant effect on the regulation of sciatic nerve conduction and the related factors of nerve factors in alcoholic peripheral neuropathy rats, which may have positive significance for the treatment, which deserves attention.

**KEYWORDS**: Alcoholic peripheral neuropathy; rat experiment; Mongolian medicine; garlic albumen laxative; impact therapy.

## 1. INTRODUCTION

Alcoholic peripheral neuropathy is one of the symptoms of chronic poisoning caused by long-term consumption of alcohol. The lesion area affects the tissues and cells of peripheral nerves, cerebellar cerebral tissues, pons, and corpus callosum, resulting in irreversible nerve injury. The incidence of this disease highly diverse clinical symptoms, diagnosis is often more severe, more pressure on clinical treatment.[1] Alcoholic peripheral neuropathy is one of the most common chronic complications of alcoholism. In this study, a rat model of alcoholic peripheral neuropathy was established efficiently by advanced animal model preparation.[2] Mongolian medicine "Garlic laxative " in the treatment of alcoholic peripheral neuropathy has a more significant clinical effect, but the specific mechanism of action there is no specific information on the clinical treatment program to determine the dosage, treatment, and also there are many unsolved complications. In this study, by observing the experimental results of the Mongolian medicine "Garlic laxatives" intervention in the treatment of alcoholic neuropathy, sciatic nerve conduction and nerve growth factor concentration in rats to evaluate the impact, obtained the desired effect were reported.

## 2. MATERIALS AND METHODS

### 2.1 Study design and Models

Experimental animals and groups of 50 adult male rats were selected as the object of this study, the body weight range between 200g ~ 250g, with an average (225.36 ± 23.66) g. Randomly divided into five groups of 10 in each, were in the control group (Con group), model group (Model group), Methycobal group (Mecbl group), "Garlic laxative" side groups (Garlic group) and the combined methycobal "Garlic laxative" group (Mecbl + Garlic group).

### 2.2 Inclusion criteria

Each group of rats animal preparation and dosing regimen ① Con rats oral pure water as blank control; ②

Model group, Mecbl group, Carlic Mecbl + Carlic group and group 4 rats were treated with 2 months of feeding its drinking, alcohol concentration increased gradually from 6% to 12%; ③ Mecbl group were calculated according to 300μg / kg per day intramuscularly to rats Methycobal lower extremities, note left and right legs alternately acupuncture treatment, in order to absorb, usually 2 months a course of treatment; ④ Carlic rats administered Mongolian " Garlic albumen laxative " mixed blood gavage administration, according to the daily dose of 3ml / kg; ⑤ Mecbl + Garlic group given intramuscular injection of300μg / kg of methy-cobarb and 3ml/kg of traditional Chinese medicine gavage treatment.

### 2.3 Exclusion criteria

Enzyme-linked immune-sorbent assay after treatment, rats were sacrificed and placed in paraformaldehyde (4%) solution about 6cm in the nerve injury site of the sciatic nerve. Standard controls were made to the ancient scriptures. Paraformaldehyde-fixed specimens dehydrated after 24h, embedded. Save routine slices. According to the ratio of 1: 5 dilution of frozen blood, according to the kit instructions for testing.

**2.4 Methods:** Statistical methods using statistical software SPSS20.0 statistical analysis of the data obtained in this study, measurement data using (± S). The differences between groups were analysed by one-way ANOVA. At P <0.05 was considered as statistically significant. Nerve electrophysiology 10% chloral hydrate anesthesia, alcohol disinfection, remove the skin exposed skin, skin peeling, 37 ℃ constant temperature saline for about 30s , scalpel incision 3cm incision peel the left sciatic nerve, observe the stability of biological signal acquisition electrode needle, Directly using the system to detect nerve conduction velocity.

### 2.5 Preparation and Applications

Mongolianmedicine “Garlic laxative” side Prescriptions include Keiko, croton, garlic, borneol, nutmeg, safflower, milk and so on. After decoction to rest the upper clear liquid concentrated to 2.5g / ml, bottling spare. Drugs Inner Mongolia International Mongolian Hospital production. Nerve electrophysiology 10% chloral hydrate anaesthesia, alcohol disinfection, remove the skin exposed skin, skin peeling, 37 ℃ constant temperature saline for about 30s, scalpel incision 3cm incision peel the left sciatic nerve, observe the stability of biological signal acquisition electrode needle, Directly using the system to detect nerve conduction velocity.

## 3. RESULT

**3.1 Sciatic nerve conduction velocity comparison:** Compared with Model group, the conduction velocity of sciatic nerve of the other 4 groups was significantly slowed down (P <0.05); the nerve conduction velocity of Mecbl + Carlicgroup was the fastest, significantly faster than Model group, Mecbl group and Carlic group (P <0.05), Slightly higher than that in Con group, but no significant difference (P> 0.05)[Tab 1].

**Table. 1. Comparison of the conduction velocity of sciatic nerve of 15 rats.**

| Grouping | Quantity (only) | Sciatic nerve conduction velocity (m / s , ± S) |
|---|---|---|
| Con group | 10 | 34.645 ± 2.665 ▵ |
| Model group | 10 | 19.875 ± 1.564 * |
| Mecbl group | 10 | 24.445 ± 1.215 ▵ |
| Carlic group | 10 | 26.563 ± 1.874 ▵ |
| Mecbl + Carlicgroup | 10 | 32.415 ± 1.456 ▵ |

Note: * P <0.05 compared with Con group ; ▵ P <0.05 compared with Model group

**3.2 Nerve tissue nerve growth factor concentration comparison:** Compared with model group, the content of nerve growth factor in rats was significantly decreased (P <0.05), the concentration of nerve growth factor in model group was the lowest, Mecbl + Garlic group was the highest, significantly higher than Model group, Mecbl Group and Garlic group (P <0.05), while the Mecbl + Garlic group was slightly higher than the Con-group but no significant difference (P> 0.05)[Tab 2].

**Table. 2. Nerve growth factor concentration comparison**

| Grouping | Quantity (only) | Nerve growth factor concentration (pg/ml, ± S) |
|---|---|---|
| Con group | 10 | 25.811 ± 5.15 |
| Model group | 10 | 34.86 ± 3.458 |
| Mecbl group | 10 | 61.58 ± 5.784 |
| Garlic group | 10 | 62.445 ± 5.78 |
| Mecbl + Garlic group | 10 | 93.645 ± 4.784 |

## 4. DISCUSSION

Alcoholic peripheral neuropathy in the theoretical analysis of medical disease in the etiology belongs to the category of " blood stasis", the pathogenesis of the performance of the context disorder and blood loss.[3] Alcoholic peripheral neuropathy is often based on long-term alcoholism based on alcoholism, spleen and stomach injury. Pulmonary vein of the huge blood loss, limb numbness, conscious when the long side Significant appearance. Alcoholic peripheral neuropathy under the influence of long-term alcohol stimulation, " seven elements " and " three " have lost the original balance. The blood concentration in the brain concentration seriously affects the nervous system function. Superior to the structure of the brain make up the nerve complex, very dense anatomical structure, blood heat is very easy to conceal the long history of peripheral neuropathy seriously affect the patient status.[4] Long-term alcoholism has a serious impact on the body's electrolyte balance. Long-Term Damage to hepatobiliary and

pancreatic function, the absorption of nutrients in the body is also seriously hampered, the lack of vitamin B1, B2, B6, B12, folic acid, niacin, pantothenic acid. To alleviate obstacles, resulting in neuronal protein and neurotransmitter synthesis disorders, axonal degeneration, demyelination. Therefore, in this study used the ultimate cure of Mongolian medicine " Garlic Laxatives " to attack the virus with poison, through oral administration of cocos, croton, garlic, borneol, nutmeg, safflower and milk, Conservative treatment of disorders of water and salt balance and neurological impairment is very useful.[5] Through the experimental results, we can see that this side of the treatment intervention, significantly improve the evaluation of the neurological function. In this study, we evaluated the levels of nerve growth factor (NGF) and sciatic nerve conduction during treatment by immunological detection combined with TCM treatment. Moreover, the neurophysiological examination is a sensitive indicator of the diagnosis of chronic alcoholism early peripheral neuropathy; nerve conduction velocity is a harbinger of alcoholic peripheral neuropathy, can be found subclinical peripheral neuropathy, and may affect drug And prognosis to evaluate.[6] Motor nerve conduction reflects the functional status of the sciatic nerve movement is the most commonly used experimental indicators of experimental chronic alcoholic peripheral neuropathy.[7]

## 5. CONCLUSION

Mongolian medicine "Garlic laxative" is the great significance in the regulation and treatment of sciatic nerve conduction and neurological related content in rats with alcoholic peripheral neuropathy, which deserves clinical attention and further study.

## DECLARATION OF CONFLICTING INTERESTS

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