



# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## Investigation on the Treatment of Shinbone Endurance Periostitis Using Chemical Components of Natural Herbal

Li Cheng\*

Jiangxi Normal University, Nanchang, China, 330022

### ABSTRACT

Based on the diagnosis and treatment of 50 patients with shinbone endurance periostitis, this paper investigates the therapeutic effect by using chemical components of natural herbal. After we apply prescription for subsidence of a swelling, eliminating stasis to activate blood circulation, relieve pain, clearing heat with this treatment.

**Keywords:** Periostitis, Chemical components, Natural herbal

\*Corresponding author



## INTRODUCTION

Shinbone endurance periostitis is common disease in sports injuries, which often occurs in running and jumping athletes or professional dancers. Because of limits of school sport venues, students who like to run and jump on cement road have a great probability to catch this disease. The damage mechanisms of the disease have two explanations: the first one is "Muscle Traction Theory". The repeated contraction of calf flexors (flexor muscle, posterior tibias muscle, etc.) after excess skip and back step running will cause muscle attachment has been involved or strain chronically, and it will lead damages to connection of periosteum and bone. The periosteum relaxation, congestion, edema and a series of lesions will appear. The second is "stress theory". Tibias are bones supporting weight, slightly forward, and have a "S" lateral bending shape. It makes the action line not overlap with tibias center axis. When we are running and jumping, the gravity and the ground reaction force will produce tension on the convex tibia and pressure on the concave tibia. At the same time, pulling force and pressure occur within the bone, constituting the two aspects of contradiction. If the amount of exercise is excess or the stress on the bone is too much, the balance of internal stress and external force will be broken. The periosteum of convex tibia will be flabby, disconnected, congestion, edema or have a series of pathological changes, thus it will develop into shinbone periostitis.

## EXPERIMENTALS

### Clinical Data

#### Normal data

In this paper, we observe the effect of Chinese medicine external treatment to shinbone endurance periostitis. 50 patients, including 34 male cases and 16 female cases, are students in sports school or sports candidates, in which the oldest is 24 years old and the youngest is 14 years old. The longest illness time is 40 days and the shortest is only 5 days. In 50 cases, the most sport is track and field, followed by basketball. The case parts mostly concentrated on middle 1/3, followed by small 1/3, and the least is up 1/3.

#### Clinical symptom and diagnose

The disease occurs gradually without significant injury history. Patients with mild don't have obvious symptoms. They felt pain after exercise, but the pain can reduce after rest. Patients with severe hurt while training and the hurt increased after training with a limp. There are some feel like swelling, skin burns in the medial tibia or above external ankle. When running or jumping they felt long jump lack force, and pain becomes more intense.

Check: There are obvious tenderness on the middle or lower segment at the edge of tibial medial. The above part on fibula external ankle of some patients have tenderness. High uneven or induration and swelling can be felt while touching. The patients were asked to use toe takeoff or landing. The pain aggravated while they squat or stand. They all have excess

exercise on concrete road or tarmac road. They feel pain or stabbing pain after exercise, and the ache part is in the middle 1/3 of tibial medial and anterior bone face. There are no obvious abnormalities in X-ray radiography.

### **Criterion of therapeutically effect**

Recovery: the symptoms and signs disappeared completely, and the clinical test was negative. There is no bad reaction after training.

Markedly: symptoms and signs have improved significantly, but there are diseases with pain and discomfort reaction after training.

Improved: symptoms are reduced and physical signs have improved. Patients feel adverse reaction after training and can only do some general activities.

Invalid: patients have no significant improvement in symptoms and physical signs after treatment, and they cannot attend any train.

### **Prescription composition and configuration method**

#### **External application prescription composition**

Golden cypress, corydalis tuber, caulis akebiae, notopterygium, radix angelicae pubescentis, cortex lycii, radix angelicae dahuricae, banksian rose, dragon blood. We will grind the herbs into powders and collect them with bottles.

#### **2.2 Medicinal liquor prescription composition**

The root of red-rooted salvia, red peony, drynaria, shibie, teasel root, safflower, albizia, frankincense, myrrh, achyranthes, golden cypress, licorice and so on. Collect the medicine after the herbals have been soaked with 1000mL 95% ethanol for 15 days. Filter to remove debris, then add 1.5g camphor per soak 100ml. Diluted with water to 50%wt, and finally add 0.5% prednisolone acetate solution according to 5:1 ratio for preparation with bottles.

### **Methods of treatment**

With six layers of gauze soaked in wine, share the medicine equally between the affected areas and irradiate in Zhou Lin spectrum analyzer for 30min. Then concoct the powder with adequate water and honey into a paste. Spread the paste on sterile gauze and apply it on the affected area daily. Dress everyday till 10 times as a course of treatment.

### **Therapeutic outcome**

#### **Clinical observation**

In 50 patients with clinical treatment, 40 cases were cured, 4 cases were effective, three cases were improved, and three cases were invalid. The total efficiency is 94%. In 40 cured

patients, 10 cases had been treated for five times or less, accounting for 25% of cured patients; 22 cases had been treated for five times to 10 times, which accounting for 55%, 10 times more than had been 8 cases (20%).

#### Typical case report

Zhou, male, 18 years old, the institute student. Participate in distance running training. His both legs began to ache, especially after training he felt even more pain, difficulty to walk, so he came for treatment.

Clinical examination: In left 1/3 calf we can see the obvious swelling and a high convex uneven nodules in the tibial side edges while touching, accompanied by tenderness. He pain worse when toes firmly supported the ground.

Diagnosis: left and right shinbone endurance periostitis.

Treatment: With six layers of gauze soaked in wine, share the medicine equally between the affected area and irradiate in Zhou Lin spectrum analyzer for 30min. Then concoct the powder with adequate water and honey into a paste. Spread the paste on sterile gauze and apply it on the affected area with a gauze bandage. Have enough rest and stop training while treatment. After 4 times after treatment, swelling, pain disappeared. Signs completely disappeared after treatment for 8 times. When returned to the training, he had no adverse reactions. In the follow-up after three months, there is no recurrence. He is being carried out in preparation for this year's Provincial Sport Meeting with high intensity training.

### RESULTS AND DISCUSSION

Appointed as the ancient physicians, both Qi and blood are interrelated and indivisible. Qi is the blood general, blood is the Qi mother. The blood follows with the Qi, and it will hurt Qi when the blood gets hurt, blood will be injury while the Qi being hurt. Shinbone endurance periostitis was mainly due to the discomfort blood and Qi, then local swelling, congestion, local burning and other symptoms will occur. So the drug for subsidence of a swelling, eliminating stasis to activate blood circulation, promoting the circulation of Qi, relieve pain, clearing heat can effectively treat shinbone endurance periostitis. The prescription of the Red Dragon, Achyranthes, Rumo, Yuanhu, Dragon Blood, banksian rose, all can stasis, active the meridians, subsidence of a swelling and relieve pain, promoting the circulation of Qi. Shibie, Intermittent, Drynaria, Albizia and TPG, etc. can cool blood; relieve pain, subsidence of a swelling. Golden cypress can clear heat and fever. Licorice can reconcile the various drugs, pulling the medicine into the main and collateral channels. Camphor can remove stasis, eliminate swelling and itching. The prednisolone acetate is the hormone drugs, which can change the body's responsiveness and reduce inflammation with anti-allergic and anti-inflammatory effect. Zhou Lin spectrum can improve local blood circulation, promote the absorption of exudates, eliminate swelling, reduce muscle tension, anti-inflammatory analgesic therapeutic effect, and it can also accelerate the absorption of drugs, promoting drug efficacy.



During treatment, patients should be limited to participate in activities and reduce the amount of exercise. Especially the running, jumping and analogous exercises should be absolutely prohibited. Otherwise, it will affect the treatment effect [1-5].

### **CONCLUSION**

Based on the diagnosis and treatment of 50 patients with shinbone endurance periostitis, the paper consider that repeatedly running and jumping on hard road is the main reason of this disease. We can achieve satisfactory therapeutic effect after we apply prescription for subsidence of a swelling, eliminating stasis to activate blood circulation, relieve pain, clearing heat with external treatment.

### **REFERENCES**

- [1] Qu, M.Y., Sports Medicine[M], The Press of Science and Technology of Beijing , 1996.
- [2] Tian, J.Y., Chinese Muscle Injury Textbooks [M], The Teaching Committee of Chengdu Sport University, 2000.
- [3] Wu, D.X., Basic Theory of Traditional Chinese Medicine[M], The Press of Science and Technology of Shanghai, 1995.
- [4] Lan, Q.X.; Xiong, R.H., Department of Traumatology of Chinese Medicine and Prescription[M], The Teaching Committee of Chengdu Sport University, 2000.
- [5] Zhen, H.X.; etc., Sports Traumatology[M], The People's Press of Sichuan, 1982.