

Clinical Effect of Electroacupuncture on Volleyball Player's Shoulder Sleeve Injury

Masashi Akaon*

Bansomdejchaopraya Rajabhat University, Bangkok, Thailand

**corresponding author*

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Abstract: Patients with rotator cuff injuries are increasing year by year, especially in sports injuries of athletes. The current medical methods for such rotator cuff injuries are also very limited, and non-drug treatment of athletes can achieve the best results. Therefore, it is indispensable to conduct clinical research on electroacupuncture treatment of volleyball players' shoulder sleeve injury. The purpose of this article is to solve the problem of volleyball player's shoulder sleeve injury using electro-acupuncture treatment. By studying the athlete's shoulder sleeve injury, the advantages of electro-acupuncture treatment of volleyball player's shoulder sleeve injury are analyzed according to the experimental results, so that electro-acupuncture treatment of shoulder sleeve injury Become a new type of treatment. The results show that electroacupuncture treatment can promote qi and blood circulation and local metabolism, improve tissue nutrition, thereby improving and restoring tissue function, and can prevent muscle atrophy, enhance soft tissue flexibility and flexibility, and restore normal motor function. After years of experience in the treatment of athletes, the VAS pain score and treatment effect of patients after treatment are significantly better than before treatment and are better than some other commonly used treatment methods. Electroacupuncture treatment of various conditions of volleyball players 'shoulder sleeve injury can significantly reduce the athlete 's shoulder joint pain and improve shoulder joint function, which can increase the treatment efficiency by about 20%. This method can reduce the training time by 2-3 times than traditional surgical treatment methods. Months or even years, this is of great significance to the early return of volleyball players to the training ground.

1. Introduction

The Rotator cuff injury is due to the root of the Rotator cuff shoulder muscles or the aseptic inflammation of the shoulder soreness. The composition after the tenderness increases the duration of the reverse movement and makes the shoulder joint dysfunction, thereby limiting the shoulder

joint movement of the patient. Affect the patient's daily life [1]. Injury of rotator cuff accounts for 17~ 41% of patients with shoulder disease in outpatient department. Injury pain in the shoulder sleeve of athletes is also more frequent, showing an increasing trend year by year. The rotator cuff muscles are often injured during volleyball, and even some athletes have severe tears [2]. On the basis of pathology, the rotator cuff tears are generally divided into the following four different types, namely, full-thickness tears, superficial tears of the muscle fiber, middle-layer tears of the muscles and deep tears of the muscle swelling. The treatment method has always been the focus of debate in China's academia. The rotator cuff, also known as the "rotating sleeve", is defined by the sub scapular, supranational, and infra-spinal muscles, the small circular muscle tendon, and other tissues composed of the sleeve-like structure around the shoulder joint [3]. Injury of rotator cuff refers to the disease of shoulder pain and tenderness caused by injury or sterile inflammation of rotator cuff muscle tendon and surrounding tissue structure [4].

Although there are many clinical studies on the treatment of rotator cuff injuries, the clinical efficacy is still not satisfactory, and there are some deficiencies [5]. If the curative effect is not obvious, the side effects are considered, the treatment time is long, the treatment cost is high, and the treatment process is complicated, etc., it cannot quickly meet the needs of modern people's life rhythm [6]. Therefore, it is very important to clinically need a treatment method with short treatment time, significant effect, and small side effects to treat rotator cuff injuries. According to the results of autopsy, with age, the synovial fluid degenerated and thickened, and the attachment point of the supranational tendon was divided into fibrosis, and the cells were disordered and the fibers and rotator cuff were torn [7]. Prove that excessive wear is a key component of rotator cuff damage.

At present, there are conservative treatment and surgical treatment for rotator cuff injuries in China. Yan-Lei believes that surgical treatment has strict indications and contraindications, and has certain risks and trauma. It is easy to cause shoulder joint adhesion after surgery and the cost of surgery is high [8]. Therefore, the treatment of shoulder sleeve injury is mostly conservative. Conservative treatment mainly includes oral Western medicine, acupuncture, massage, and plaster [9]. Guanheng believes that the rotator cuff tendon and the surrounding tissues are repeatedly rubbed by the beak and shoulder arch and the humeral head, which makes the gap smaller and causes damage. He also pointed out that 95% of the rotator cuff tears are the result of long-term impact and wear of the shoulder [10] K. Chew found that rotator cuff injury occurred in 89% of type III acrolect [11]. The results of Leonardo's research show that the shoulder peak is related to the distance of the humeral head and the size of the rotator cuff tear. When the spacing is less than 6-7mm, it can cause full-shearing of the rotator cuff. When the spacing is reduced by 4.5%, only the supranational tendon tears, and when it is reduced by 28%, the supranational tendon and the tendon can be torn at the same time, when it is reduced by 63%. May be accompanied by frontal injuries [12-13]. Kuhn believes that the front tear of the rotator cuff may be related to the large reverse twist angle, and the rear tear may be related to the large forward twist angle [14].

In short, this article discusses the way of non-drug acupuncture treatment of rotator cuff injuries. Specifically, the main research content of this article is roughly divided into five parts: The first part is the introduction part, which aims to make a systematic review of the main research content of this article from the research background, research purpose and research ideas and methods; the second part is the theoretical basis, detailed and systematically summarizes the research status of non-drug electroacupuncture treatment of rotator cuff injuries, and introduces the role of non-drug intervention therapy in the treatment. The third part is related research, through inquiring information and conducting relevant experiments to explain the influence mechanism of non-drug acupuncture treatment of rotator cuff injury and the problems existing in traditional drug treatment. The fourth part is the analysis of the data. Through specific investigation data and research results,

the feasibility and superiority of the way of non-drug acupuncture treatment of rotator cuff injuries are verified in many aspects; the fifth part is the summary and recommendation of this article. It is a summary of the results of the article and the further application and perfect prospect of the way of acupuncture treatment of rotator cuff injuries.

2. Mechanism and Treatment of Rotator Cuff injury

2.1. Characteristics and Treatment of Rotator Cuff Injury

Chronic shoulder pain is the third source of low back pain and chronic headache. There are many causes of chronic shoulder pain, but the main cause is rotator cuff disease. With the continuous development of shoulder joint sports culture and the aging of the population in China, the incidence of acute rotator cuff injuries and degenerative rotator cuff injuries continues to rise. Therefore, the treatment of rotator cuff injuries has gradually become an important research hotspot in China's international orthopedics. The rotator sleeves on the mountain are composed of rotator sleeve-shaped muscle tissue, and Kin inferior muscles, swollen shoulder muscles in the lower part of the small round muscle, and each direction is to maintain the stability of the movement of the shoulder joint. The nutrition knowledge of rotator cuff muscles comes from two parts. Some students enter the rotator cuff through the relevant arterial system, and the other part nourishes the deep and distal ends of the rotator cuff tendon through the synovial fluid of the shoulder joint. There are many causes of rotator cuff injuries, including trauma, instability of shoulder joints, development of deformed morphology, impact, degenerative diseases or aging. From a pathological point of view, rotator cuff tears can be divided into four types: middle layer intelligent shallow rotator sleeve tears, deep rotator sleeve tears and full-layer rotator sleeve tears. Injury of rotator cuff is a common degenerative disease in China. The current research results show that the full-thickness of rotator cuff injury is significantly positively correlated with age. Autopsy results show that 6% under 60 years old, 30% over 60 years old. However, with the increasing number of traffic accidents and frequent accidents among young people, in recent years, more and more patients with rotator cuff injuries [15 Most of the young patients with rotator cuff injuries are those with high-speed impact injuries, shoulder sports technology enthusiasts, and heavy manual labor. This often occurs when some patients fall or pull off the upper limb suspension. Some patients are accompanied by enterprise joint dislocation when shoulder joint dislocation occurs. The main symptoms are severe shoulder pain and external pain after trauma, and flexion and fatigue.

There are two methods for repairing rotator cuff tears: one is external repair: Rotator cuff tendon injuries provide nutrition by repairing the surrounding synovial and blood vessels. The injured area, synovial and vascular hyperglycemia and growth, some fiberglass is converted into a large amount of collagen, and the continuity of the tendon is achieved by weaving collagen fibers. Second, inherent recovery: the following way to repair tendon cells depends on itself, there is no obvious damage to the growth of synovial tissue and blood vessels, the cells evolve into a small stump tendon fiberglass, shoulder damage to the rotator cuff muscles, synthetic Collagen repairs rotator cuff fractures. This kind of environmental repair technology mostly occurs in the lateral joint damage, and the repair range is small. Therefore, joint and full-thickness rotator cuff injuries require surgical treatment because of their limited scope and ability to repair rotator cuffs. However, great progress has been made in the repair of tendon cuffs, but a certain re-tear rate after surgery still plagues many scholars. According to literature studies, the tear rate is between 37% and 93%, especially the healing effect of rotator cuff injuries is low. Some scholars believe that the re-tear rate after repair of the tendon sleeve has a certain relationship with the repair information technology. For the repair of full-thickness rotator cuff injuries, commonly used repair techniques include single-row technology, traditional double-row technology, bone-through suture technology and the

latest wire bridge technology. There are different reports on the effectiveness of these techniques, and there is also a lack of support for live animal experiments.

Tendon sleeve injury refers to the aseptic inflammation, injury or even tearing of the muscles that make up the tendon sleeve. The main clinical manifestations are shoulder pain, tenderness, increased joint activity, limited abduction, and nighttime symptoms. For the cause of rotator cuff injury, clinical researchers analyzed and discussed the soft tissue and bone structure around the rotator cuff. At present, China has not reached a consensus. According to trauma theory, the rotator cuff is a typical tendon-bone composite structure. Bibliography showed that only 1cm away from the supranational tendon, there was only a clear sparse area of blood vessels, called the dangerous area of rotator cuff tear [16]. The special anatomical knowledge structure design is more likely to cause excessive fatigue of the rotator cuff muscles, its own physiological repairing technology ability continues to decline, and the frequent use of volleyball, badminton, tennis, etc. requires humeral internal and external rotation and corporate shoulder muscles. When the upper extremity is engaged in abducting occupations, it causes injuries to the rotator cuff and increases the incidence.

2.2. Influence Mechanism of Rotator Cuff Injury

The physiological and pathological changes of rotator cuff injury are mainly discussed as follows. Injury of rotator cuff can be divided into contusion and rupture. Contusion is caused by a variety of mechanical factors such as tendon edema, hyperactive, fibrosis, and fractures. Through the normal rotator cuff tendon, it has reached a complete blood vessel-rich synovial tissue. However, degeneration and necrosis of rotator cuff injury cells, changes in the calcium deposition environment, and even the transformation of damaged cells into erythrocytes can cause changes in ischemia of the enterprise and growth of distal granulation tissue. Xia Chumming, he found that synovial fluid can pass through the injury of the rotator cuff, the bursa of the acrolectal rupture, and the fluid in the joint cavity leaked, causing the erythrocytes to lose their normal nutritional supply and degeneration. The fracture does not heal for a long time, and eventually forms a hard scar tissue to make the joint move. Through the study of the above problems, our teacher can analyze that as the student ages, the synovial sac becomes thicker and thicker, the gap between the beak and scapular arch and the supranational tendon becomes smaller and smaller, and the probability of supranational tendon injury Increasingly, the pathological synovial sac is divided into multiple cavities by the fibrous septum, its ability to lubricate and nutrition education is weakened, and the incidence of disease increases. According to the size of the rotator cuff injury, it can be divided into 4 types: small fractures, 1cm tears, 1-3cm moderate tears, 3-5cm large tears, and more than 5cm are large tears.

Clinical work is divided into three categories: contusions, incomplete fractures, and complete fractures. Contusion refers to congestion, edema, and even fibrosis of the rotator cuff tendon caused by traction, impact, and compression; incomplete fracture refers to the tearing of the rotator cuff tendon. 6mm; 3 degrees > 6 mm, or the thickness of the tear is greater than 50%; a complete tendon rupture is a full-thickness tear. Lyon is divided into three categories according to the scope of tendon rupture disease. Some scholars classify garbage according to tendon rupture and muscle fiber development direction. The clinical symptoms of rotator cuff injury in this disease can be divided into three parts: there are fixed tender points at the age of 25, multiple pains in the shoulder, active aggravation of pain, physical examination, pain arc; at the age of 25-40, there are two Repeated trauma at the stage, leading to chronic tendinitis, persistent shoulder pain, severely affecting sleep at night, check the shoulder pain curve, once heavier; all three stages are over 40 years old and last longer. Shoulder pain lasts for a long time, the degree of shoulder muscle atrophy is different, and the range of joint movement appears. The results of the auxiliary examination

showed that the tendon was completely broken or the bone quality changed. TCM theory is a unique medical diagnosis and treatment theory system based on the holistic view. Acupuncture medicine is based on the theory of traditional Chinese medicine and has established its own unique theoretical system. The most fundamental cause of pain and dysfunction caused by drugs is to change the mechanical state of bone or soft tissue. This state is often called a dynamic balance disorder. According to the research of acupuncture, within the scope of normal life education activities, within the number and degree of specific working hours and spaces, the free movement and development of human health organs is called "dynamic system balance", otherwise it is called "dynamic balance" "Imbalance." Bio-mechanical analysis shows that the coupling balance of the two shoulders forms, there is a balance between the side surface of the cap at the bottom of the shoulder sleeve and the deltoids muscle, and there is a small round balance between the sub scapular muscle and the sub scapular muscle. Force couple refers to a pair of parallel forces acting on the same target object of the enterprise, with equal magnitude and opposite directions, but not collie. The human body as an organism, any joints and organs normally show an inseparable pair of muscle function and proper balance.

3. The Process and Results of the Experiment

3.1. Treatment of Rotator Cuff injury in Groups

Control group: treated with point linear polarized light pain treatment instrument. Method: Use the acupressure method to find the pain point complained by the patient, illuminate the painful area with the C-type probe of the polarized light pain treatment device, and the output power is 90%, and add the B-type probe to irradiate the pain point of the waist and leg. The B-type probe lamp is irradiated for 7-8 min at each point, and the output power starts from 90%, and is irradiated for 3 s for 2 s intermittently. After 2-3 minutes, when the patient feels hot, the intermittent time is extended for 1 s or the power is reduced by 10 %. According to the patient's reaction, it is advisable to feel the warmth of the irradiation site without feeling the tingling. If you need to move the small probe to irradiate, move the irradiation point in the intermittent state according to the patient's "hot" answer.

Treatment group: treatment with acupuncture. Methods: The patient takes the prone or supine position, selects the correct tenderness points from the waist and legs, and selects the local or nearby appoints according to the disease syndrome. Generally, 1-3 pairs of appoints are selected, marked with gentian purple and routine disinfect. Use a 28-31 gauge 1.5-3.5-inch-long millisecond needle to quickly pierce the acupuncture point, and then twist the needle into a certain depth, and the acupuncture depth is 0.5-2.5 inches. After getting stimulation by manual stimulation, connect the acupuncture treatment instrument to the needle handle, select the intermittent wave, the frequency is 1.5-5 times / s, and the stimulation intensity is suitable for patients with mild muscle contraction. In the treatment of hypothesis, increase the output current appropriately. After about 20 minutes of treatment, turn off the power and start the needle, and finally use a sterile cotton swab to gently press the needle to avoid bleeding. The two groups were treated for 20 min each time, once per day, and 6 times as one course of treatment. If necessary, rest for 3 days before taking the second course of treatment. Those who failed 3 treatment courses stopped treatment. Observe the effect after two months

The drugs commonly used in clinical practice for Rotator cuff injuries are NSAIDS and steroid hormone drugs, which have significant analgesic and anti-inflammatory effects. NSAIDS can inhibit the activity of oxygenation in the peripheral and central nerves. Oxygenation can inhibit the production of prostate E2. Prostate E2 is an inflammatory mediator that inhibits the repair of muscle tissue and promotes ossification of the muscles. And cause redness and heat pain. Therefore,

NSAIDs can reduce pain by reducing the concentration of propagandist at the inflammation site. NSAIDs can also inhibit the release of BK (brinteaser) in the inflammatory response, transform the reaction of lymphocytes (lymphocytes), and reduce the migration and phagocyte of PMNS (granularity) and monocycle (monocycle), so NSAIDs is at the molecular level The upper will inhibit the further development of the rotator cuff inflammation reaction, so that the damaged cuff can restore functional activities faster and can carry out rehabilitation exercises, and can also reduce bleeding, tissue fluid leakage and swelling during tissue healing. However, foreign countries have studied the use of stains in vitro for the treatment of Rotator cuff injuries. The Rotator cuff injury model mice were given other satin astatine (ATV) treatment for 3 weeks. Compared with the physiotherapy group, they found that the use of ATV treatment was small. In mice, the fluid accumulation in the Rotator cuff area is reduced, the repaired tendon integrity is better, the cells have a soft and high value-added rate, and the healed muscles can withstand a greater load. The satin drug Lavatory is a lipid-lowering drug, but it has the characteristics of regulating COX-2, PGE2, EP4, thereby promoting the body to speed up the process of repairing Rotator cuff injuries. Steroid hormone drugs have a long history in the treatment of Rotator cuff injuries, especially for the improvement of capillary permeability, inhibition of inflammatory response, analgesia, etc. However, there are too many matters needing attention and side effects of hormone application for other reasons, the clinical application has been greatly reduced to avoid unnecessary troubles.

3.2. Electroacupuncture Treatment of Rotator Cuff Injuries

Athlete's rotator cuff injury pain is aseptic pain of the fascia or muscle caused by acute or chronic injury of soft tissue. The injury is mostly due to excessive movement of the joints and muscles to cause strain degeneration. Contract. Due to the high intensity and high density of athlete training today, rotator cuff injuries have become a frequent and common disease for many athletes. At present, the main treatment methods are oral anti-inflammatory analgesics, physical therapy or the use of nerve block, but the effect is unstable and easy to relapse. Acupuncture is one of the three major therapies for soft tissue injury and pain created by the founder of soft tissue surgery in China. Acupuncture is used to treat the pain of rotator cuff injuries. It uses a silk-like needle to penetrate the skin, subcutaneous tissue, fascia, and peritoneum. The low-frequency pulse current close to the body's bio electricity is connected by the elector-acupuncture treatment instrument, which will cause muscle contraction The tension of muscle ligaments can relieve the pressure of swelling and spastic tissues to achieve the effects of relaxing muscles and promoting blood circulation, anti-inflammatory and analgesic, and qi elimination. It can promote the circulation of qi and blood and local metabolism, improve tissue nutrition, reduce damage and soft tissue stasis and Lymphatic stasis promotes the dissipation and absorption of local inflammation and adhesion, thereby improving and restoring tissue function, and preventing complications such as muscle atrophy, joint adhesion, and stiffness, enhancing soft tissue flexibility and flexibility, and restoring normal motor function. After acupuncture treatment, the patient's VAS pain score and treatment effect were significantly better than before treatment and were better than some other commonly used treatment methods. Studies have shown that the treatment of soft tissue injury pain with acupuncture can observe the increase in the diameter of the micro-circulation blood vessels in the lesion area, accelerated blood flow, improved blood supply capacity, accelerated repair of the damaged area of the rotator cuff, and relieved the painful spasms of muscles and muscles. Therefore, dredge meridians and relieve paralysis to make it "common but not painful."

Elector-acupuncture therapy is a method of preventing and treating diseases developed by combining the acupuncture method of the motherland medicine with modern science and technology. This method has a definite and significant effect on the treatment of athlete's rotator

cuff injury pain. In recent years, the research on acupuncture treatment of SIS has become more and more extensive, and its advantages of remarkable efficacy, few side effects and low medical costs have been accepted by most patients and their willingness to adhere to treatment has been confirmed. Electra-acupuncture is a physical therapy combining modern Chinese and Western medicine. Its curative effect has been affirmed by researchers at home and abroad, and has achieved remarkable results in clinical practice. Modern medical research shows that acupuncture can improve local blood circulation, promote repair of damaged tissues, control inflammation, relieve pain, absorb congestion and edema caused by inflammation, reduce stimulation of nerve endings by extenuates, and improve shoulder activity. The occurrence of SIS is related to the abnormal muscle strength and muscle tension around the shoulder, which destroys the balance of shoulder joint motor function. Balanced elector-acupuncture therapy uses two different waveform and frequencies of elector-acupuncture therapy on the shoulder muscles. Therapy to reduce the muscle tension of spastic muscles, increase the strength of damaged muscles, and maintain the dynamic balance of shoulder joints. In order to further observe the clinical efficacy of balanced acupuncture therapy for SIS, the VAS score, the JOA score of the shoulder joint, and the dynamic ultrasound detection of the subatomic impact test of the shoulder joint were included in the patients before and after treatment and one month later. The improvement of the quality of life scale score was evaluated and compared with ordinary elector-acupuncture therapy to observe the therapeutic effect of balanced elector-acupuncture therapy on SIS.

3.3. Experimental Results

Clinical studies have shown that a high failure rate after rotator cuff repair is still the most complication affecting rotator cuff repair, and repair techniques may be an important factor affecting tendon-bone healing. Some studies have also shown that the factors that affect the healing rate after rotator cuff repair mainly include the strength of the suture, the tendon-bone contact area and the contact pressure. The slight movement between tendon and bone, the degree of degeneration of the rotator cuff, the size of the rotator cuff tear, the bone quality of the homers, the design and materials of the suture, and the functional exercise after the operation. The repair techniques for rotator cuff injuries include single row repair, double male repair, and bone fixation. Animals currently used as models for repairing rotator cuffs include rats, rabbits, dogs, sheep and primates, of which rabbits are the most used. According to relevant research, the cuff healing time of primates is about 15 weeks, while the smaller the animal size, the shorter the healing time. The healing time of rabbit cuffs is about 8 weeks, so we choose the 8th week as the end the end of the observation period. The weight and maximum failure load of single row group and control group are compared ($\bar{x} \pm s$), as shown in Table 1:

Table 1. The composition of the culture test solution

Group	Maximum failure load (N)
Group SR	72.35 ±12.15
Group DR	103.72 ±6.23
Group SB	135.59 ±17.90
Control group	192.33 ±9.52

There was no significant difference in body weight between SR group, DR group, SB group and normal control group ($P > 0.05$). The maximum failure load of the tendon-bone interface of the repaired rotator cuff was (135.59 ±17.90) N, (103.72 ±6.23) N, (72.35 ±12.15) N in the SB group, DR group, and SR group. Statistical significance ($P > 0.05$), but the SB group is still smaller than the normal control group (192.33 ±9.52) N, the difference is statistically significant ($P > 0.05$). At present, agrochemical observations of healthy tissue healing focus on the integrity of swollen bone

attachment tissues, collagen growth, fibro-cartilage growth and muscle health of multi-layer fiber morphology, of which collagen morphology and fibrous soft cell growth are observed an important point.

4. Discussion and Analysis

4.1. Analysis of the Effect of Electroacupuncture on Rotator Cuff injury in Different Parts

Before treatment, there was no significant difference in shoulder joint mobility between the physiotherapy group and the physiotherapy group ($P > 0.05$), indicating that the two groups were comparable. As shown in table 2.

Table 2. ROM comparison of shoulder mobility between two groups

Group	Flexion	Abduction degree
Acupuncture treatment group before treatment	40.58±12.33	36.98±6.63
After treatment in acupuncture group	136.51±20.32	131.82±16.43
Before treatment in simple physical therapy group	39.95±13.83	38.55±8.63
After treatment in simple physical therapy group	115.89±26.33	112.63±20.87

Before treatment and after treatment in each group, there was a significant difference between the electro-acupuncture treatment group ($P < 0.01$), and the difference in the simple physiotherapy group ($P > 0.05$). After treatment, the acupuncture treatment group had a difference in wetness and dampness compared with the pure physiotherapy group ($P > 0.05$), indicating that the acupuncture treatment group had better joint mobility than the simple physiotherapy group.

According to the results of previous animal experiments, various repair methods cannot treat the rotator cuff injury to the level of the normal control group, and there is a certain postoperative tear rate. Some scholars have used stem cell technology to promote the repair of the rotator cuff injury, and have achieved Certain progress. After repairing the rat's rotator cuff, bone marrow stem cells overflow into the tendon-bone interface by drilling into the rat's bone nodules. The results showed that the drilled group was significantly better than the non-drilled group in terms of the way of fibreglass differentiation and the maximum destructive force at the tendon-bone interface. Adipose-derived stem cells (ADSCS) are used to promote the repair of chronic rotator cuff injuries in rabbits. The results show that ADSCS can promote tendon bone healing. Compared with the control group, the area of muscle tissue fat infiltration in the ADSCS repair group was significantly reduced. However, the treatment of rotator cuff injuries with stem cell technology is still in the exploratory stage and has not been widely used in clinical practice, and further research is needed.

The independent sample t test was used for comparison between the two groups after treatment, $P = 0.008 < 0.05$, statistical analysis was meaningful. The paired design t test was used to compare the two groups before and after treatment, and $P = 0.000 < 0.01$ had a very significant difference. Both treatments have significant effects in improving flexion activity, And the curative effect of the test group is significantly better than the control group, as shown in Figure 1 below.

From the data in Figure 1, it can be seen that the comparison between the experimental group and the control group shows that the flexion activity before and after treatment is better in the experimental group than in the control group. All in all, the method of the experimental group, using acupuncture to treat rotator cuff injuries can achieve the best results. The VAS and ROM scores of the two groups of patients before treatment were statistically processed and found that the VAS and ROM of the two groups before treatment had no statistical difference and were

comparable. The VAS and ROM scores of the two groups after treatment were compared with those before the treatment. After T test, they were statistically significant ($P < 0.05$), indicating that both groups had curative effects.

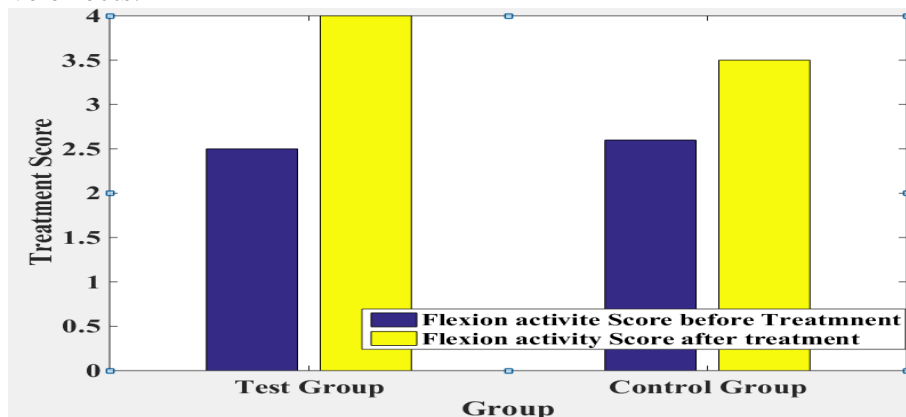


Figure 1. Comparison of flexion activity before and after treatment

According to the results in Table 1, there was no statistically significant difference in body weight between SR group, SR group, SB group and normal control group ($P > 0.05$). The tests in SR group, SR group, SB group and normal control group are shown in Figure 2.

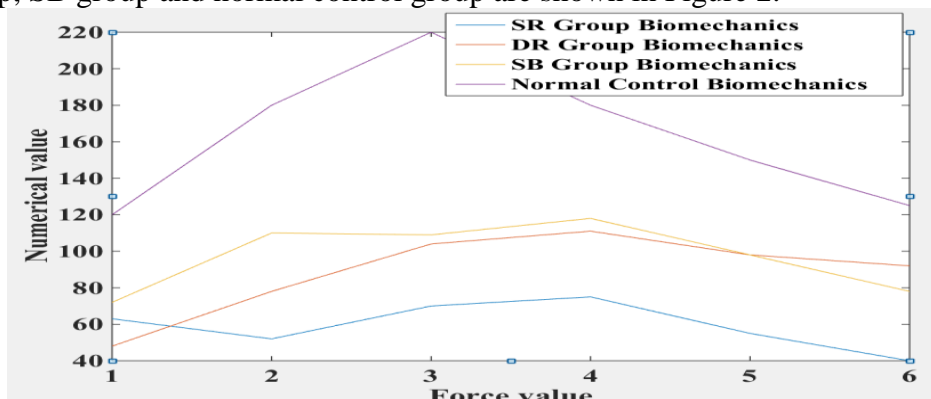


Figure 2. Biomechanics curves of each group

From the data in Figure 2, it can be seen that the superiority of the SR group, its treatment effect is enhanced compared to the general way, and the reliability is higher. It can basically achieve a complete rehabilitation process. In the process of elector-acupuncture treatment, this treatment has advantages over general treatments and can effectively alleviate the condition.

4.2. Clinical Analysis of Electroacupuncture Treatment of Volleyball Players' Shoulder Sleeve

Since the concept of rotator cuff and foot prints was proposed, many scholars have conducted anatomical studies on the supranational and infrastructures muscles at the stops of the large nodules. The results showed that the average distance of the maximum width and length of the supranational muscle at the large nodule stops was 23 and 16mm, respectively. The vestigial footprint of the supranational muscle was H-shaped, the average maximum inner and outer diameters were 6.9mm, and the average anterior and posterior diameter the maximum length is 12.6mm. The suture bridge technique can increase the contact area and contact pressure of the tendon-bone interface through multiple tail wire compression of the rotator cuff footprints, and obtain a higher healing rate, but there is no direct evidence of related animal experiments. Cut the foot print of rabbit supranational

to make a full-length rotator cuff injury model. The tear diameter is about 8 mm. Then use single-row technology, double-row technology and steel bridge technology to sew the shoulder sleeves. By observing the healing of the rotator cuff in the middle and marginal areas, the effect of the three methods on the rotator cuff healing was studied.

The treatment quality of life scores of the two groups of patients were tested by normal tests, which were in accordance with the normal distribution and homogeneity of variance tests. The clinical efficacy of acupuncture treatment of rotator cuff injuries was shown in Figure 3.

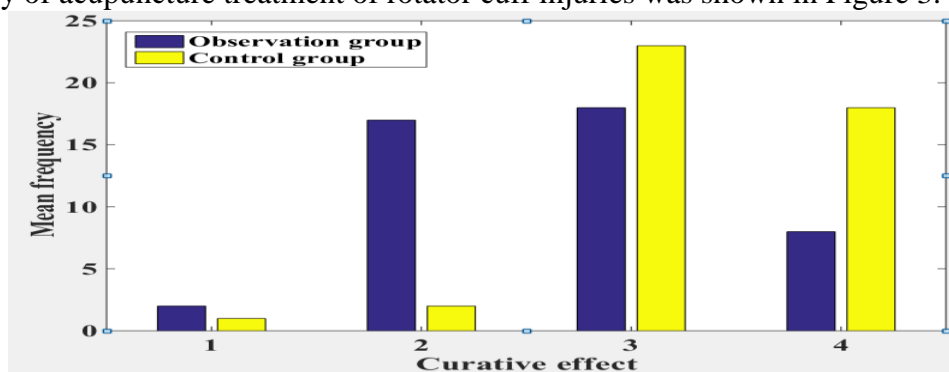


Figure 3. Comparison of clinical efficacy between the two groups

It can be seen from the data in Figure 3 that the difference is significant and statistically significant, so the improvement of the above items in the experimental group on patients with rotator cuff injury treated by acupuncture is better than the control group. The two groups of cured, markedly effective, and effective patients were followed up for observation 1 month after treatment. The experimental group followed up the patients by telephone. One patient suffered from excessive fatigue, and the pain was more severe after handling heavy objects than when receiving treatment. In the control group, the patients were followed up. The pain recurred in 3 patients, and the pain was worse than that at the end of the treatment. Acupuncture treatment of patients with rotator cuff injuries is shown in Figure 4.

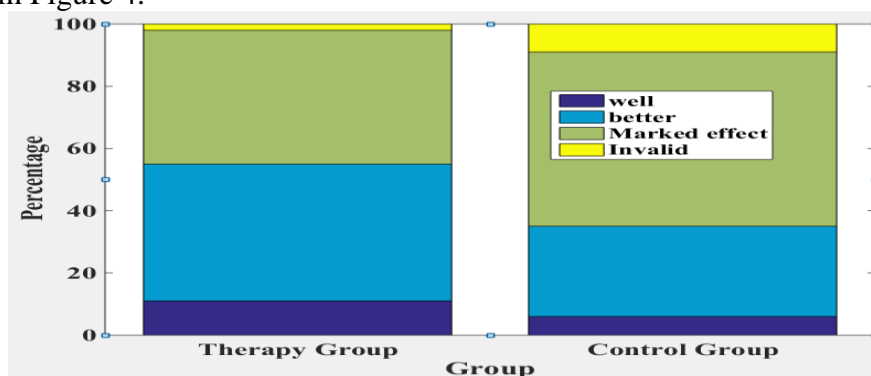


Figure 4. Comparison of the efficacy of the two groups of patients

It can be seen from Figure 4 that, through experimental testing, the treatment group has a higher percentage of rotator cuff injuries than the control group. The effect of the control group causes some patients to have no effect and not receive the optimal treatment. It can relieve pain and improve shoulder joint mobility, which is better than a single treatment. Through the low and high centers to exert analgesic effects, alleviate the inflammatory response of the local tissue of the shoulder joint and correct the abnormality of the bio mechanical structure of the shoulder joint, it can increase the tissue healing rate by 10% and prevent the adhesion of the shoulder joint and surrounding tissues. Clinical treatment of rotator cuff injury provides an effective and

reference-able treatment method, resulting in a 15% increase in cure rate.

5. Conclusion

(1) This article analyzes the common problems of rotator cuff injury, and discusses to solve these problems, and proposes the way of acupuncture treatment. Introduced the development and influence of related treatment methods, and carried out research on acupuncture treatment of rotator cuff injuries. Both acupuncture treatment and surgical treatment can improve the pain of patients with rotator cuff injuries and expand the mobility of shoulder joints. Acupuncture treatment is superior to surgical treatment, and the purpose of treating diseases can be achieved by adjusting the biomechanics of shoulder joints.

(2) The acupuncture treatment of rotator cuff injuries studied in this paper is analyzed. The curative effect is not obvious, the side effects are significant, the treatment time is long, the treatment cost is high, and the treatment process is complicated, etc., which cannot meet the needs of modern people with a fast pace of life. The corresponding working principle and theoretical guidance are put forward, the principle of acupuncture treatment of rotator cuff injuries and the feasibility and superiority of this non-drug interference treatment method are elaborated, which can effectively increase the curative effect and improve the cure rate by 15% compared with general treatment methods.

(3) Discuss and verify the feasibility and superiority of the acupuncture designed in this paper to treat rotator cuff injuries. Observe the clinical effect of improving shoulder pain and mobility, evaluate its effectiveness and the difference between the two. It has been verified by experiments that acupuncture treatment of rotator cuff injuries is a treatment method with obvious curative effect and small side effects. Most of them are conservative treatment. This method can reduce the rest time of 2-3 months or even several years compared with the general surgical treatment.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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