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Recovery of Exercise Fatigue of Traditional Wu Shu Athletes from Tai Shan chi Ganoderma to Repair Skeletal Muscle Injury after Repeated Exercise

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Abstract: Wu Shu athletes have to go through a long period of intensive training and exercise, which often leads to the phenomenon of skeletal muscle micro-injury. At present, the treatment methods for this kind of injury are very limited, and Tai Shan Ganoderma is very effective, so it is necessary to carry out research on the recovery of exercise fatigue of traditional Wu Shu athletes from Tai Shan Ganoderma for the repair of skeletal muscle micro-injury after repeated exercise. The purpose of this article is to solve how to from red of mount tai Ganoderma lucidum micro damage of skeletal muscle repair after the repeated movement to explore the recovery of sports fatigue problems of traditional Wu Shu athletes, through the study of Tai Shan red Ganoderma lucidum in repeated movement caused by the application of micro skeletal muscle loss treatment and understand the previous traditional Wu Shu athlete's sports fatigue recovery treatment process, and then using MRI and ultrasound or high resolution microscopy observations imaging examination for the damage to the damage of skeletal muscle, thus according to get the correct information to the traditional martial arts athlete's sports fatigue recovery methods are also proposed. The results showed that Tai Shan Ganoderma lucidum had a certain effect on the repair of skeletal muscle damage after repeated exercise, and it had a protective effect on skeletal muscle ultrastructure. This kind of Ganoderma lucidum is very effective in the recovery of fatigue of traditional Wu Shu athletes, and the recovery rate is higher than the general treatment of 20%.

1. Introduction

Sports fatigue is a very common phenomenon for basketball players in the arena. It directly

affects the performance of athletes' skills and tactics in the game and is a bottleneck restricting the improvement of sports performance [1]. Sports fatigue refers to the fact that the athlete's body cannot maintain its athletic ability or training state at a specific level of exercise intensity, resulting in a temporary decline in performance; excessive fatigue can also cause sports injuries. Studies have shown that after high-intensity exercise training, protein changes, enzyme inactivation, and cell damage are caused. Sports fatigue is an important research topic in current sports training disciplines [2]. With the continuous development of martial arts, the level of martial arts competition has increased year by year, and the competition has become increasingly heated. In order to continuously improve the level of martial arts sports, repetitive exercise training (exhaustive exercise) with a large amount of exercise has become an important means to improve the martial arts athletes' athletic level and athletic performance, and the subsequent skeletal muscle micro-injury is inevitable. Among various types of sports injuries, skeletal muscle micro-injuries accounted for the highest proportion [3]. At present, most scholars believe that the skeletal muscle ultra-structural changes caused by repeated eccentric exercise are not damage, but skeletal muscle remodeling. Different exercise methods and sports events can cause skeletal muscle ultra-structure changes [4]. It is suggested that repeated exercise training may have a certain cumulative effect on skeletal muscle fiber damage. In today's competitive sports, competition is becoming increasingly fierce, and repetitive exercise has become an important training method. Among the injuries caused by sports training, skeletal muscle micro-injuries account for the highest proportion, which is manifested as delayed muscle soreness. Studies have shown that proper nutritional intervention during training can help repair skeletal muscle injury. Tai Shan red Ganoderma can improve the body's immunity, promote human metabolism, and has an adjuvant therapeutic effect on fatigue, chronic illness, and other symptoms [5].

In addition, "Tai Shan red ganoderma" is a famous Tai Shan specialty. It has 1,700 base pairs in genetic material, which is more than 7 times that of normal ganoderma. Tai Shan red ganoderma contains ganoderma polysaccharide, ganoderma adenosine, ganoderma acid, 18 amigo acids, More than 100 kinds of nucleolus, a variety of trace elements, and other chemical components such as organic germanium multivitamins [6]. Ganoderma can promote the metabolism of the human body, strengthen the human body's immunity, have obvious auxiliary treatment for neurasthenia, excessive fatigue and other symptoms, and can promote the improvement of the body's ability. The research on the effectiveness of Tai Shan Red Ganoderma in the field of sports training for athletes to resist exercise fatigue and improve exercise capacity and prevent sports injuries is still blank at home and abroad. The study attempts to test martial arts athletes during high-intensity exercise training and take Tai Shan Ganoderma Lucidum Polysaccharide Oral Liquid to test its related physiological indicators and study its impact on athletes. How to delay the high-intensity training while improving athletes' skills and physical fitness The emergence of athlete's sports fatigue during this period reduces the risk of sports injury, improves exercise efficiency [7], and provides theoretical and experimental basis; at the same time, it provides a new way to reduce sports fatigue in the field of sports training [8].

In order to discuss the recovery method of sports fatigue of traditional martial arts athletes, this article discusses the recovery of sports fatigue of traditional martial arts athletes from the repair of skeletal muscle micro-injury after repeated exercise. Among them, Boniello made a detailed introduction to the sports fatigue machine of the athletes, analyzed the problems existing in the commonly used healing methods, and explained related research methods and techniques. It also shows the importance and controversy of the medical industry on the study of alleviating sports fatigue, and indicates the importance and research significance of Tai Shan red ganoderma to alleviate sports fatigue [9]. In his article, Li C put forward the research significance and current research status of skeletal muscle micro-injury repair, expounded the common basic repair surgery

procedures and methods, and analyzed the problems existing in this treatment. In addition, it showed the significance and importance of Tai Shan Red Lingzhi to alleviate sports fatigue and rehabilitation of traditional martial arts athletes, and made a solution to the improvement and problems [10]. In the article, JIANG elaborated the efficacy and role of Tai Shan red ganoderma in detail, and put forward the importance and influence of Tai Shan red ganoderma on the recovery of sports fatigue of traditional martial arts athletes, and the necessity of carrying out related research [11]. Moreno proposed a technology and related principles for extracting the active ingredients of Tai Shan Red Ganoderma, and pointed out the role of these active ingredients and how to take them. It is also proposed that Tai Shan red ganoderma has a certain effect on the repair of skeletal muscle micro-injury after repeated exercise, and it has a protective effect on the skeletal muscle ultrastructure. Moreover, the relationship between it and various biochemical indexes was analyzed, and its mechanism for alleviating the sports fatigue of traditional martial arts athletes was explained [12].

In brief, this article discusses the research on the recovery of sports fatigue of traditional martial arts athletes. The main research content is how to use Tai Shan red ganoderma to repair skeletal muscle micro-injury after repeated exercise for the treatment of martial arts athletes' sports fatigue and rehabilitation. Specifically, the main research content of this article is roughly divided into five parts: the first part is the introduction part, which aims to systematically review the main research content of this article from the research background, research purpose, research ideas and methods; the second part is The theoretical basis, a detailed and systematic summary of the research status of Tai Shan red ganoderma and the repair of skeletal muscle micro-injury. In addition, the role of Tai Shan red ganoderma in the relief of sports fatigue is introduced. The third part is related research. Through querying data and conducting relevant experiments, the effects of Tai Shan red ganoderma on the repair of skeletal muscle micro-injury after repeated exercise and the application status of Tai Shan red ganoderma in the treatment of sports fatigue of martial arts athletes and the problems of traditional treatment methods are explained. . The fourth part is the analysis of the data. Through the specific survey data and research results, the feasibility and superiority of Tai Shan red ganoderma for the treatment of sports fatigue of martial arts athletes are verified from the aspects of recovery speed and rehabilitation effect. The fifth part is the summary and recommendations of this article are a summary of the results of the article and a prospect of further application of Tai Shan Red ganoderma for martial arts athletes' sports fatigue and rehabilitation methods.

2. Proposed Method

2.1. Characteristics and Regularity of Pathological Changes

With the continuous development of martial arts, the level of competitive martial arts has been increasing year by year, martial arts competitions have become increasingly fierce, and the requirements for martial arts athletes' physical strength, physical fitness and comprehensive quality have become higher and higher, and the role of skeletal muscle ultra-structure function training and adjustment has become more and more important. It is highly valued by martial arts coaches, making scientific and reasonable arrangement of large amount of exercise (exhaustive exercise) training an important means to improve martial arts performance. Wushu athletes' skeletal muscle ultra-structural injuries are common injuries in competitive sports. Among the types of injuries in various sports, skeletal muscle ultra-structural injuries account for the highest proportion. Due to the pathological mechanism changes of skeletal muscle ultra-structure after injury, it poses a potential threat to the martial arts athletes' athletic ability and sports life, so fully study the mechanism of skeletal muscle ultra-structure injury, understand the characteristics and rules of pathological changes, and explore Its corresponding prevention, treatment and rehabilitation

measures have always been an important subject in the field of sports medicine research. In modern martial arts, skeletal muscle ultra-structural damage is more common in the training of speed, endurance, strength, sensitivity and other aspects of periodic repetitive large-volume exercise (exhaustive exercise) such as martial arts training. The damage was most pronounced. Therefore, in the experiment of skeletal muscle ultra-structure sports injury, many scholars have used the centrifugal exercise of downhill running to replicate the pathological model of skeletal muscle ultra-structure damage.

The research on the ultra-structure and mechanism of human and animal muscle fibers provides direct evidence of muscle fiber damage: Electron microscopy of exercise-induced skeletal muscle micro-injury is mainly characterized by hypochondria swelling, changes in contractile proteins, and changes in the cytosine. Among them, the Z disc is the most vulnerable part of the entire sarcoma structure. This change manifests as the Z disk (medical name) widens, the Z band (medical name) breaks, or disappears completely. The ultra-structural changes of skeletal muscle caused by eccentric exercise are more obvious, and the ligaments will also be damaged. It should be noted that sports skeletal muscle injury only accounts for a very small part of all muscle fibers. In human experiments, due to the limitations of sampling techniques and biopsy sampling, the ultra-structural changes of certain muscle fibers are often missed during research, which may cause Different findings. The amount of ultra-structure of Tai Shan red ganoderma feeding showed that the ultra-structure and function of skeletal muscle cells gradually recovered, and the degree of body damage began to gradually decrease. Over time, the muscle fiber arrangement was basically normal, the cell membrane was partially shrunk, and the nuclear membrane gap was locally expanded No muscle fiber edema was seen.

Exhaustive eccentric exercise can cause morphological changes in soleus muscles of rats. These changes include irregular arrangement of myofibrils, zigzag lines or abnormal wave-forms, and even disappear. Based on the quantitative statistics of the percentage of abnormal Z-line after exhaustive exercise, it is concluded that the skeletal muscle ultra-structural damage first aggravates with the time after exercise. Consistent with the results under this group of light microscopes. In this experiment, we found that skeletal muscle showed obvious changes in tissue morphology and ultra-structure after eccentric exercise. Moreover, this change has obvious temporal and delayed characteristics. The ultra-structure of skeletal muscle has a tendency to recover during repeated exercise. For example, at the beginning, it is characterized by changes in interstitial blood vessels and infiltration of inflammatory cells, and then swelling of muscle cells can be seen. The morphological changes of skeletal muscle fine damage under electron microscope are mainly: disordered myofibrillar arrangement, sarcoma, and myofilament disorder , Z line is blurred and distorted, showing jagged and corrugated changes. Swelling or contraction of the nucleus, swelling of the mitochondria, etc. This change is the response of skeletal muscles to exercise load stimuli, suggesting that this type of skeletal muscle micro-injury may not be a complete pathological process, and may be an intermediate process between skeletal muscles adapting to sports training stimulation. "Dissociation before reconstruction" may be the adaptation of skeletal muscles to sports training stimuli.

2.2. The Efficacy and Effects of Tai Shan Red Ganoderma

The preciousness of Tai Shan Ganoderma is its medicinal value. Ganoderma contains 17 amino acids and 23 trace elements. It is rich in zinc, chromium and strontium, which are closely related to human health. It can promote metabolism and blood circulation, especially germanium, which enhances the ability to absorb oxygen. The content is significantly higher than that of ginseng. Therefore, Ganoderma lucidum Ganoderma lucidum has good effects on coronary heart disease,

myocardial infarction, neurasthenia, and other diseases such as hepatitis, tracheitis and nephritis. Ganoderma lucidum ganoderma lucidum has the effects of improving the vitality of the body, significantly improving the body's adaptation to the environment, adjusting the physiological balance, enhancing the physique, improving the body's ability to resist disease, and self-healing. In Chinese medicine, righteousness is to improve physical fitness, to eliminate evils is to eliminate diseases, and to correct evils is to strengthen physicals and eliminate diseases. When the physical fitness is good, there are fewer diseases. Even if you are sick, it is easy to heal and recover. In addition, Tai Shan Ganoderma has good prevention and treatment effects on a variety of diseases, from tumors to hypertension, hyperglycemia, stasis, thrombosis, coronary heart disease, cerebral hemorrhage, myocardial infarction; from hemorrhoids to prostitutes, from neurasthenia to asthma, Both can be used for prevention and treatment of Ganoderma lucidum. Tai Shan Ganoderma also has a good prevention and treatment effect on diseases caused by low immune function, allergies and physiological disorders.

Red ganoderma folk called ganoderma grass. Poacher is a medicinal fungus. The shape is quite similar to a colorful mushroom. The "mushroom cover" is an irregular cloud shape with ring patterns interspersed with radial wrinkles. There are numerous fine pores under the "cover"; the stem is born under the "cover". , Shiny like paint. In summer, the temperature of Mount Tai gradually increases, the relative humidity between the forest gradually increases, and the sunlight scatters, forming favorable conditions for the rapid growth of Mount Tai. At the end of autumn, it can be collected beside the cricket and maple decaying wooden stakes. The whole plant is used for medicine, and has functions such as treating deafness, sharpening joints, protecting the soul, replenishing energy, strengthening bones, curing fatigue, and nourishing and strengthening. The effects are roughly as follows. Ganoderma lucidum polysaccharides, ergot alcohol, ganoderma acid U-Z and other components can directly inhibit the growth of cancer cells and achieve anti-cancer effects. Ganoderma lucidum is more effective in preventing tumors than other medical effects, and combined with western medicine can reduce the negative effects of western medicine. Ganoderma can expand cerebral blood vessels and increase cerebral blood flow by 24.8%, which is of great help to patients' physical therapy and rehabilitation. For cerebral embolism, adenine contained in ganoderma can inhibit platelet coagulation and prevent embolism.

In addition, there are some other effects of red ganoderma. For example, in heart disease, ganoderma can dilate cerebral blood vessels, reduce its blood flow resistance, enhance coronary blood flow, reduce arterial, venous blood oxygen content difference, and myocardial oxygen consumption. Amount, promote blood circulation in the area of myocardial infarction. Ganoderma lucidum polysaccharides A, B, C, and I all have a strong hypoglycemic effect, which can promote the utilization of glucose by tissue cells and transform it into liver sugar for future use. Ganoderma can be used as an excellent supplement for insulin to treat diabetes, and it can prevent gangrene. Ganoderma lucidum has the function of protecting the liver, can promote the regeneration of liver cells, and has obvious curative effects on acute and chronic hepatitis, especially those with chronic amino acid transmigrate elevation, and those who are not positive for hepatitis B surface antigen. Ganoderma can prevent renal enzymes from acting on plasma globulin, thus blocking its formation of angiotensin and avoiding high blood pressure. Its main ingredients are ganoderma aldehyde A, B, gadoteric acid B, C2, F, H, K, SI, and Y Among them, the most effective one is Ganoderma F. Ganoderma can prevent hypertension myocardial infarction and cerebral embolism. Ganoderma lucidum has the best medical effect on bronchitis, it can strengthen the immune system, it can nourish and strengthen the body, it can recuperate and eliminate evil, and solidify the strength of the body. Ganoderma can inhibit the release of histamine from mast cells, sooth bronchial smooth muscles, and reduce the symptoms of asthma.

3. Experiments

3.1. Related Processing of Experimental Data

The object of this experiment was to use a Tai Shan red ganoderma to repair skeletal muscle micro-injury after repeated exercise in a rehabilitation hospital, to test the feasibility of Tai Shan red ganoderma to recover the fatigue of traditional martial arts athletes. During the experiment, there is a large amount of experimental data to be processed, and there must be errors in these data. It is also very important to handle the errors appropriately. Therefore, before using these experimental data for forward and reverse analysis, the error should be processed and analyzed on the original data. Generally, the errors of the experimental data can be divided into three types: system error, random error and gross error. Among them, random errors are often caused by random factors, and their signs and absolute values are irregular. However, as the number of experiments increases, random errors are generally considered to be normally distributed. The gross error mainly refers to the fact that in the statistical data, due to the observer's carelessness, or sudden changes in environmental conditions, unstable instrumentation and other factors, the observation error does not conform to a certain statistical distribution rule, which is usually a measurement error. System error is the error caused by the measurement instrument, the change of the measurement reference and the influence of external conditions. At present, the systematic error of observations is generally composed of corresponding statistics based on the statistical characteristics of observations, and then test hypotheses are made based on the characteristics of their probability distributions, and judgments are made by comparing actual calculated values with quantifier values. Common test methods are: U test, variance test, t test and so on. In the measurement process, the gross error should be eliminated, and the system error should be eliminated or weakened, so that the observation value contains only the random error I, 0.

At present, when resolving this kind of problem at home and abroad, the least square method is usually used to process the experimental data twice. The basic idea of the least square method is to first assume that the observations only contain accidental errors, but this is basically not true in reality. Possibly, for this reason, a new theory has been developed to study systematic errors and gross errors. At present, the more effective method for processing systematic errors is the additional parameter method; there are two methods for processing gross errors. One is the data detection method that still belongs to the category of least squares, and the other is the method of robustness estimation that is different from the least squares method. Or robust estimation. In addition, in the actual situation, various social work-related links are constantly changing, and the information collection system is also in a moving state, which means that the entire collection process is dynamically changing, so there will be relative errors in experimental management. It is inevitable. Modern error theory generally believes that the measured true value cannot be determined, and the existence of the quantum effect excludes the existence of the unique true value, so the error cannot be accurately obtained. The error used in the experiment in the past is actually a kind of deviation; the experimental error evaluated is actually unavoidable and uncertain.

3.2. Experiment Objects and Methods

The experimental object is a martial arts athlete from a traditional martial arts college. Using Tai Shan Red Ganoderma Isolated and Refined Ganoderma Polysaccharide Oral Liquid 35ml / d provided by Tai Shan Bio-pharmaceutical Factory, the experimental group athletes took one bottle each after breakfast and before bed during the per-training day, and started to add one bottle of ganoderma daily after lunch from the beginning of the week. Oral fluid, 6 weeks to the end of training. A control group of athletes took a placebo. Reagents: Japan Wako Pure Chemical

Industries, Ltd., Beijing Rui Zheng Sudan Biotechnology Co., Ltd. reagents. Before the experiment, at the 3rd and 6th week, venous blood was collected in the early morning on an empty stomach. Immediately after specimen collection. Indicators measured: serum total protein (TP), blood lactic acid (HL), red blood cells (RBC), hematocrit (HCT), hemoglobin (HGB), urea nitrogen BUN indicators, and alanine aminotransferase (ALT), aspartame aminotransferase (AST), muscle enzyme (CK), lactate dehydrogenate (LDH) enzyme activity indicators test. Continuous detection method, ma late dehydrogenate method, dichromatic urea coloristic endpoint method. The changes of each index before, during (week 3), and later (week 6) were compared. The instrument uses a universal analytical TU-1810DSPC ultraviolet spectrophotometer. The statistical data is processed by the spssl3.0 statistical software package.

In addition, the experimental group (feeding Tai Shan red ganoderma decoction) and the control group were also subjected to repeated heavy exercise training (exhaustive exercise). At the same time, the normal control group and the experimental group were repeatedly trained with high physical exercise (exhaustion). After exercise), they were sacrificed by cervical dislocation method. Two large and small muscles were taken from the quadriceps muscle, and the small muscles were quickly cut into rice-grain-sized tissue pieces. Fixed overnight (prepared by electron microscope). The large muscles were fixed in a 10% neutral buffered formalin fixative overnight (prepared with a light microscope). Animal model construction and grouping: 52 adult male SD rats were randomly divided into 2 groups: control group and experimental group. Animal model construction of repetitive exercise: Rats run downhill on a running platform with a speed of 18m / min and a slope of 1-16 degrees, and repeat training with a large amount of exercise (exhaustive exercise). Set up the experimental group (feeding Tai Shan red ganoderma decoction) and the control group, and perform the same repetitive exhaustion exercise. At the same time, the normal control group and the experimental group were repeatedly trained (exhausted exercise) after the large amount of exercise. The cephalic muscle, and at the same time, the rats in the experimental group were fed with Tai Shan Ganoderma lucidum, and the effect of the drug on the micro-injury variation of rat skeletal muscle under repeated exercise (exhaustive exercise) was investigated. To observe the ultra-structural variation of rat skeletal muscle under repeated exercise (exhaustive exercise) in the control and experimental groups. None of the rats had exercised on the treadmill before the experiment. The animal breeding room meets the national secondary animal breeding standards and has a free diet.

3.3. Experimental Results

Electron microscopy results of a badminton player accepted in a rehabilitation center discussed in this article: The normal control group showed the ultra-structure of skeletal muscle without any damage. Immediately after repeated exercise, the AO group showed normal sarcoma and mitochondria; 24 hours after repeated exercise, mitochondria appeared edema, internal crests began to melt, and vacuolation occurred, and the outer membrane was incomplete. The endoplasmic reticulation and muscle fibers showed different changes. 48h after repetitive exercise: muscle cell function began to recover, although mitochondria still showed signs of damage, it can be seen that it is gradually recovering. 72h after repetitive exercise: The band showed excessive contraction. Compared with 48h, the cell structure showed signs of recovery, but the number of mitochondria was small, and the outer membrane had not yet recovered. 168h after repeated exercise: the cell structure and mitochondria number recovered initially, but not obvious. The basic situation of the tester is shown in Table 1:

Table 1. The basic situation of the tester

Group	Average age	Height	Weight
Experimental group	20-30	184-186	80-83
Control group	20-35	182-184	82-85

Electron microscope specimens and section preparation Electron microscope specimens were rinsed 5 times with a phosphate buffer solution of 0.1 MPH value 7.2, and rinsed every 20 minutes. After fixing with 1% osmium acid (rhenium tetroxide) for 4 hours, it was rinsed 5 times with a phosphate buffer solution of 0.1M and pH 7.2 every 20 minutes. Dehydration with gradient ethanol (30%, 55%, 70%, 85%, 95%, 100% ethanol) takes 30 minutes per step, and then uses propensity oxide twice for 2 hours each time. Use Epon812 resin to soak, embed and polymerize. Ultrasonic sectioning was performed using an LKB ultra-thin micrometer, and stained with uranium acetate-lead cit-rate. The prepared electron microscope slice was observed with a transmission electron microscope produced by GE of the United States and photographed. Skeletal muscle thick and thin two kinds of muscle filaments, located in the sarcoma A-band, M-line, Z-line, H-band, I-band, A-band. Horizontal tubule: It is a small tube network formed by the sarcoma depression into the sarcoma. The horizontal tubule can quickly transmit the excitability of the sarcolemma to each sarcomere.

4. Discussion

4.1. Effect of Tai Shan Red Ganoderma on Repair of Skeletal Muscle Micro-Injury after Repeated Exercise

Under the condition of high-intensity training load of traditional martial arts athletes, the values of serum total protein, hematocrit and hematocrit decrease, and the decrease of these values can easily lead to skeletal muscle micro-injury. Hematocrit reflects the number of red blood cells and the concentration of hemoglobin. Decreased serum total protein can cause protein synthesis disorders and cell damage, which can lead to a decrease in red blood cell and hemoglobin values. Red blood cells are the main substances that perform blood transport functions. It and hemoglobin are indicators of the aerobic capacity of athletes. The change of the two directly affects the body's athletic ability. The increase in hemoglobin and red blood cells will increase the body's ability to carry oxygen, thereby releasing more oxygen for energy metabolism. Its decline will lead to a reduction in energy metabolism, which will lead to the emergence of exercise fatigue. Among them, the changes of TP, LD, RBC, HCT, and HGB index values within a few weeks of training. The experimental results of the set experimental group and control group are shown in Table 2.

Table 2. Change in index value

Group	TP	LD	RBC	HCT	HGB
Experimental group	80-83	0.8-0.97	5.3-5.6	40-45	144-150
Control group	52-57	1.9-2.12	3.1-3.3	32-33	130-133

Exercise fatigue is a common physiological phenomenon in competitions. This decline in functionality is usually temporary, but it can lead to a decline in athletic ability and movement errors. Studies have shown that the control group in the middle of the training has been caused by long-term high-intensity training, resulting in sports fatigue, but later indicators are still falling,

fatigue is deepening. Although fatigue appeared in the experimental group in the middle period, after increasing the dosage of Tai Shan Chi Ling zhi oral liquid, fatigue was effectively relieved and exercise capacity was enhanced. The decrease in red blood cell content causes temporary hypoxia in the brain, and the neurons in the brain are very sensitive to hypoxia, which destroys the balance between the central nervous system's excitation and inhibition of conduction, causing central nervous disorders, and the brain's regulatory response to the motor system. Slowness reduces the accuracy of technical movements, which in turn affects athletic ability. The effect of Tai Shan red ganoderma on the content of red blood cells is shown in Figure 1 below.

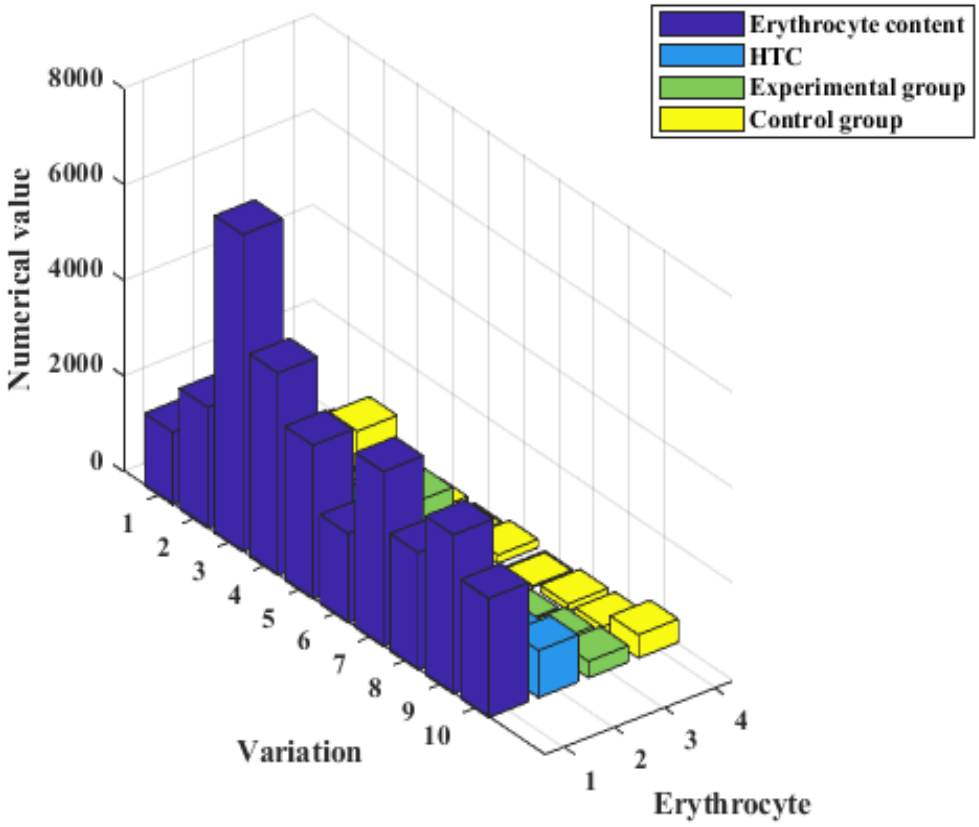

Figure 1. Effects of mount Tai Shan red ganoderma lucidum on erythrocytes

From the data in Figure 1, it can be seen that Tai Shan red ganoderma can effectively increase the red blood cell content of traditional martial arts athletes during exercise. Compared with the data of the control group, the red blood cell content has increased by 25%. The increase of red blood cell content will slow down the fatigue of traditional martial arts athletes and reduce the occurrence of skeletal muscle micro-injury.

In addition, at the beginning of training, regardless of whether the athletes in the control group or the experimental group were affected by the high-intensity training, the body's immune level decreased in different degrees. In addition, the number of immunologists has been reduced to varying degrees, and the increase in T lymphocytes has also decreased, indicating that athletes' immune functions are very fragile and are very vulnerable to sports diseases. However, the values of various experimental indicators of the control group were much larger than those of the experimental group, indicating that Tai Shan Red ganoderma oral liquid produced pharmacological effects on the experimental group of athletes. The ultra-structure of rats' skeletal muscle was

observed by transmission electron microscopy in the experimental group of Tai Shan Red ganoderma decoration repeated exercise, which had protective effects on repairing skeletal muscle micro-injury after feeding Tai Shan Red ganoderma decoration. Ultra-structural changes of skeletal muscle micro-injury were directly observed under electron microscope. Repeated eccentric exercise can have a certain cumulative effect on skeletal muscle fiber damage. The effect of Tai Shan red ganoderma on repairing skeletal muscle micro-injury after repeated exercise is experimentally compared, as shown in Figure 2.

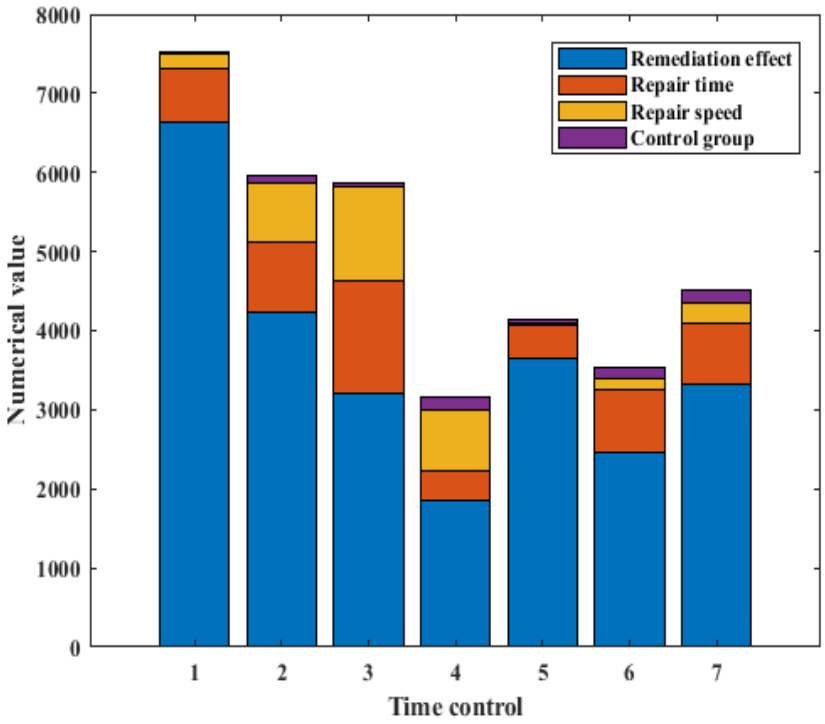

Figure 2. Effect of Tai Shan ganoderma lucidum on repair of skeletal muscle injury

From the data in Figure 2, it can be seen that the superiority of using Tai Shan red ganoderma in the treatment of skeletal muscle micro-injury is better than that of ordinary methods, and the reliability is higher. It can basically realize a complete rehabilitation training process, and greatly improves the cure rate. In addition, the cure rate of this treatment is also higher than that of ordinary treatments, which is 5% higher than the general recovery rate.

4.2. Analysis of Tai Shan Red Ganoderma on Recovery of Sports Fatigue of Traditional Wu Shu Athletes

LDH exists widely in human tissues and is an important indicator of whether athletes are fatigued. Tai Shan red ganoderma can effectively increase the activity of skeletal muscle LDH, enhance the brain's metabolic absorption rate, enhance the blood's oxygen carrying capacity and accelerate blood circulation to reduce glycolysis, prevent the increase of lactic acid levels, thereby reducing the accumulation of lactic acid and delaying body fatigue the generation. In addition, BUN is the main end product of human protein metabolism. It is a commonly used index to assess the fitness and intensity of exercise. The test found that the index of the experimental group increased during the beginning of the training, and then gradually decreased, indicating that the index of the control group initially increased, and then the amount of BUN not only did not decrease, but

gradually increased. Excessive urea nitrogen would destroy the micro-circulation in the body and cause damage to the tissues and organs of the athletes. This shows that the athlete's body is obviously not adapted to long-term high-intensity confrontation, which leads to fatigue and reduced athletic ability. The healing speed of this treatment is compared with the data of traditional healing methods, as shown in Figure 3.

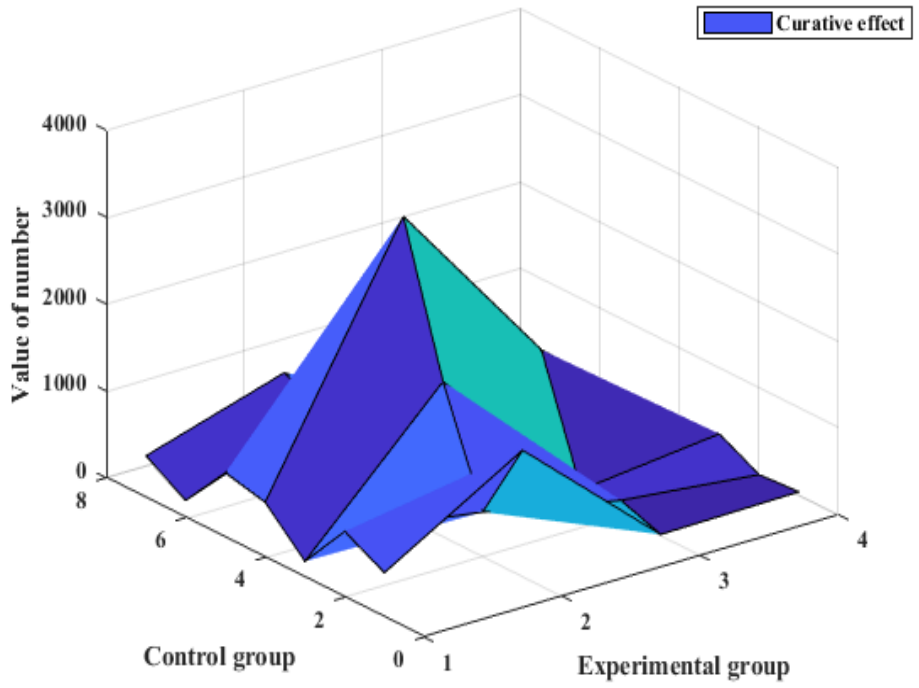

Figure 3. Effects of Tai Shan chi ganoderma lucidum on relieving exercise fatigue

From the data in Figure 3, it can be seen that Tai Shan red ganoderma has excellent recovery from sports fatigue of traditional martial arts athletes, which can effectively increase the LDH and BUN content in the body, reduce the amount of lactic acid produced by exercise, and regulate the balance of ion metabolism in the body. Moreover, it has a better relief effect on sports fatigue, which greatly improves the healing speed. This kind of medicine recovers 20% faster than the traditional medicine, and the cost of treatment and research and development is lower.

Second, GPT and GOT in the body mainly exist in the liver and skeletal muscles. When athletes exercise vigorously, blood circulation is accelerated, resulting in increased enzyme activity, which releases a large number of free radicals. Cell membrane rupture in the body due to cell oxidant damage, which destroys muscle muscle fibers and cardiac muscle fibers. On the one hand, it reduces cellular immunity and the ability of cells to transport oxygen, causing cardiac muscle strain and muscle strain: on the other hand, it exposes tissues and organs such as the heart or liver. damage. CK is mainly distributed in cardiologists and the brain. it will increase the activity of CK in the brain tissue and deepen the degree of fatigue. The activity of CK increases, and changes within a certain range can well reflect the degree of fatigue during exercise. A large number of studies have shown that there is a high correlation between muscle soreness and serum CK level after high intensity exercise load. The change of CK has become an important indicator of sports fatigue. The experimental control results established in this paper are shown in Figure 4.

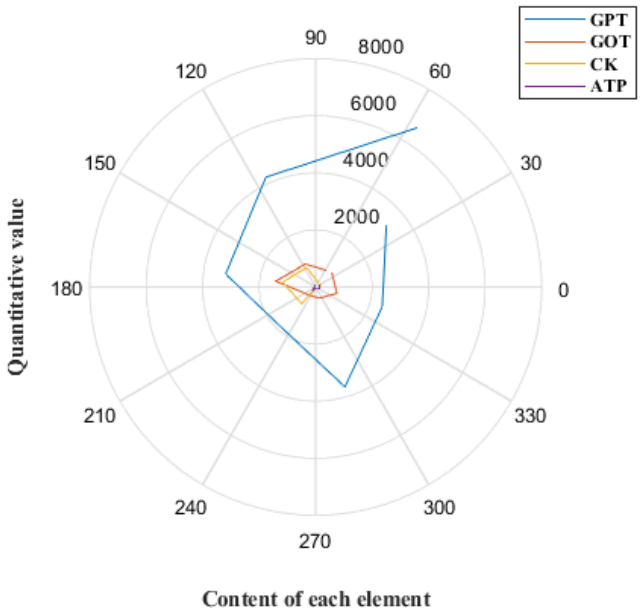

Figure 4. Regulation of enzyme activity of ganoderma lucidol

It can be seen from Figure 4 that after experimental testing, Tai Shan red ganoderma has an effect on promoting the recovery of GOT, GPT and CK levels in brain tissue caused by exercise fatigue, which can effectively prevent cell fission and reduce GOT, GPT and CK through the cell membrane. To protect the normal function of the cell membrane. It further protects the body's aerobic metabolism function and delays the generation of sports fatigue. The mechanism may be that multiple anti-oxidant ingredients contained in red ganoderma clear a large number of free radicals generated during high-intensity exercise, effectively prevent lipid per-oxidation of the cell membrane, thereby improving exercise capacity.

5. Conclusion

(1) This article analyzes the existing problems of elbow joint fatigue recovery of traditional martial arts athletes, discusses these problems, and proposes corresponding solutions. The development and effects of Tai Shan Ganoderma lucidum medicine were introduced, and the research of Tai Shan Ganoderma lucidum on repair of skeletal muscle micro-injury after repeated exercise was conducted. The efficacy and effects of Tai Shan Ganoderma lucidum medicine were analyzed.

(2) Analysis of the effect of Tai Shan red ganoderma on the repair of skeletal muscle micro-injury repair after repeated exercise. The corresponding working principle and theoretical guidance are proposed, and Tai Shan red ganoderma is explained on skeletal muscle after repeated exercise. The effects of micro-damage repair and the feasibility and superiority of its protective effect on the skeletal muscle ultra-structure can effectively increase the healing effect on traditional martial arts athletes, and increase the cure rate by 15% compared with ordinary treatment methods.

(3) Explored and verified the feasibility and excellence of Tai Shan Red Ganoderma for restoring the fatigue of traditional martial arts athletes. It has been experimentally verified that Tai Shan red ganoderma has a certain effect on the repair of skeletal muscle micro-injury after repeated exercise, and it has a protective effect on the skeletal muscle ultra-structure. This red ganoderma is very effective for the recovery of sports fatigue of traditional martial arts athletes, and the recovery speed is higher than 20% of general 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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