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Retraction

Retracted: Nanotube Combined with Roller Skater Rehabilitation Therapy in the Treatment of Knee Arthritis

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This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of systematic manipulation of the publication and peer-review process. We cannot, therefore, vouch for the reliability or integrity of this article.

Please note that this notice is intended solely to alert readers that the peer-review process of this article has been compromised.

Wiley and Hindawi regret that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] P. Sun, "Nanotube Combined with Roller Skater Rehabilitation Therapy in the Treatment of Knee Arthritis," *Advances in Materials Science and Engineering*, vol. 2022, Article ID 8286306, 7 pages, 2022.

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Research Article

Nanotube Combined with Roller Skater Rehabilitation Therapy in the Treatment of Knee Arthritis

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As a kind of nanotechnology, nanomaterials have made great progress in recent years, among which nanotube is one of the most representative new nanomaterials. Knee arthritis, as a degenerative bone disease, often occurs in the elderly. According to statistics, the incidence of knee arthritis in China is between 3 and 15 percent, among which the incidence of the elderly over 65 years old is as high as 68 percent. The purpose of this study is to explore the application effect of the rehabilitation therapy of nanotube combined with roller skater in the treatment of knee arthritis and promote the continuous improvement of clinical treatment effect of knee joint. In this study, by comparing the curative effect of the roller skates combined with nanotubes in the rehabilitation treatment group and the control group, the clinical treatment effects of the two groups were comprehensively evaluated and evaluating the comprehensive effects of nanotubes combined with roller skates from various angles of a comprehensive role of rehabilitation therapy in the treatment of knee osteoarthritis, to give full play to the advantages of nanotubes and rehabilitation therapy, promote the continuous improvement of treatment, and provide important guidance for the clinical treatment of knee arthritis, thereby improving the therapeutic effect. The results showed that the total effective dose was 82.61% in the control group and 97.83% in the observation group. Before and after the treatment, the therapeutic effect of the nanotube drug treatment group was improved by about 40%, and the therapeutic effect of the observation group of rehabilitation therapy with nanotube combined wheel athletes was increased by about 42%. It indicates that compared with the single treatment, the rehabilitation therapy of the nanotube combined with roller skater greatly improves the therapeutic effect of knee arthritis.

1. Introduction

With the continuous extension of human life cycle, the incidence of osteoarthritis is on the rise, which has a negative impact on human survival treatment [1–3]. As a common osteoarthritis disease, survey data show that the incidence of knee arthritis in middle-aged and elderly people can reach as high as 40%, and the incidence is still on the rise [4]. Currently, no drugs have been found to effectively improve the condition of knee arthritis, and the treatment methods are still conservative treatment, surgical treatment, and rehabilitation therapy, among which conservative treatment and rehabilitation therapy are collectively called nonsurgical therapy [5]. Rehabilitation treatment refers to the treatment method that promotes the physical and mental dysfunction or disability caused by the injury, disease, developmental defect, and other factors to return to normalcy or close to normalcy. It is an important part of rehabilitation medicine. Although surgical treatment can achieve a certain effect, the cost of surgical treatment is expensive, and complications are very likely to occur during the operation. The most important thing is that this treatment method cannot guarantee the efficacy period [6]. Nonsurgical treatment can effectively control the pain, promote the continuous improvement of knee function, and play an important role in promoting the improvement of patients' quality of life. It is the preferred method for the treatment of knee arthritis at this stage. Therefore, it is of great significance to explore a reasonable and effective nonsurgical treatment [7].

With the progress of medical technology and the renewal of ideas, scholars began to explore new ways to treat knee arthritis [8]. The treatment of knee arthritis should not only

reduce the pain of patients but also realize the effective recovery of knee function and enable patients to have normal activities [9]. The traditional treatment of knee arthritis is mainly drug and surgical treatment. Although this treatment can effectively relieve the pain of patients, it has no obvious effect on the recovery of the knee motor function. Therefore, to promote the rapid recovery of the normal function of the knee joint, treatment methods must be improved [10]. As a new material, compared with conventional orthopedic materials, nanotube's anti-infection performance and tissue compatibility performance are constantly improved. Moreover, because of its good load and drug release ability, nanotubes can realize the effective treatment for local orthopedic diseases [11]. Therefore, nanotubes are gradually popularized in the clinical treatment of orthopedic diseases. Rehabilitation therapy has attracted much attention in recent years and is dedicated to patients' postoperative recovery [12]. Rehabilitation therapy makes patients return to their normal state as much as possible through scientific and comprehensive nursing and rehabilitation training. Both treatments have unique advantages.

In this study, by comparing the therapeutic effects of nanotubes combined with roller shoes in the rehabilitation treatment group and the control group, the clinical treatment effects of the two groups were comprehensively evaluated. And evaluating the comprehensive effect of nanotubes combined with pulley shoes on rehabilitation therapy in the treatment of knee osteoarthritis from multiple perspectives, to give full play to the advantages of nanotubes and rehabilitation therapy, promote the continuous improvement of treatment, and provide important guidance for the clinical treatment of knee arthritis, thereby improving the therapeutic effect. The innovation of this paper is to combine nanotubes with rehabilitation therapy to study how to treat knee arthritis, which is innovative and practical.

2. Nanotubes and Rehabilitation Therapy

2.1. Knee Arthritis. Knee osteoarthritis (KOA) is a common chronic joint disease in the middle-aged and elderly, also known as knee proliferative arthritis and senile arthritis. The arthritis of the knee is a type of disease based on degenerative changes in the cartilage of the knee and involves other nearby structures from the location of the articular cartilage. Its main clinical manifestations are progressive knee pain, stiffness, swelling, dysfunction, limited joint activity, joint deformity, and loss of function, which seriously affect the quality of life of the middle-aged and elderly. Generally speaking, the multiple groups of knee arthritis are middle-aged and elderly people. Clinically, it is commonly seen in middle-aged and elderly women over 50 years old, with the characteristics of high incidence rate and high disability rate. The redness and swelling of the knee, difficulty in movement, effusion, and other common clinical symptoms of the knee joint were all caused by Pearl Harbor Huachi, which had a direct adverse impact on the normal walking and standing of the patients, thus greatly reducing the quality of life of the patients. If left untreated, knee arthritis can develop into joint deformities that can lead to disability in severe cases. The formation of knee arthritis is affected by many factors. The common factors include degenerative disease, overwork, and trauma. Knee arthritis can also be caused by poor walking posture, cold knees, and heavy weight. Knee osteoarthritis is mainly because the knee joint is under the action of external force or internal force, or because the abnormal effect of internal force makes the knee joint suffer a certain degree of damage, which leads to bone and joint inflammation. Currently, there are drug therapy and surgical treatment for knee arthritis, among which arthroscopic surgery is the most common surgical treatment. Avoiding further wear and tear of articular cartilage is the key to the treatment of knee arthritis. Taking cartilage protectors can not only effectively promote the rapid synthesis of articular cartilage but also effectively resist inflammation, playing a good role in the relief of joint pain and the improvement of overall function. At the same time, in our daily life, we should try to reduce the joint injury caused by various external factors and constantly reduce the incidence of knee arthritis, such as reducing the weight-bearing transport of knee joints and reducing the wear and tear of articular cartilage.

2.2. Nanotubes

2.2.1. Concept. Generally speaking, nanomaterials refer to materials whose size is between 1–100 nm. Because of the size of nanomaterials, their properties, such as physical properties, electrical properties, optical properties, and magnetic properties, are very significantly different from traditional materials. Many nanomaterials have catalysis, adsorption, and strong reactivity. Nanotube is a new kind of nanomaterial. There are many kinds of nanotube, however, most of the nanotubes mentioned in orthopedic treatment are titanium dioxide nanotube. The surface preparation materials of the nanotubes are pure titanium sheets and pure titanium alloy sheets, which are the most common nanotube materials in orthopedic research and treatment. From the exterior, the nanotube is similar to an ordinary titanium plate. It only has a certain difference in color. A normal titanium plate's color is silver, whereas the anodic oxidation process configuration of the titanium dioxide nanotubes is deep purple color. Put the titanium plate in the electron microscope observation. It is found that the basal area distribution of the titanium plate is with many tubular structures arranged evenly, and every pipe is open at the top and closed in the bottom. They have the characteristics of high specific surface area and porous structure, and based on the characteristics of the nanometer material, the drug has good adsorption properties. At present, there are three common ways to prepare titanium dioxide nanotubes, including anodic oxidation, hydrothermal synthesis, and template synthesis. The tubular existence form of titanium dioxide is titanium dioxide nanotube. It has been mentioned above that the nanotube has high specific surface area and high aspect ratio. Hence, it has strong adsorption and carrying capacity. Besides, as it is not toxic, it has good histocompatibility. Especially in the clinical application of

orthopedics, titanium dioxide nanotubes can promote the continuous improvement of the growth ability of osteoblasts. They also play an important role in promoting calcium deposition and osteogenic activity. The existing research results show that the nanotube has a good inhibitory effect on bacterial adhesion, thus reducing the probability of bacterial adhesion and promoting a significant reduction in the probability of infection. Therefore, the material has gradually become a new antibacterial modification material with wide application. The advantages of nanotubes promoted their development and made them the focus of orthopedic material research, as shown in Figure 1.

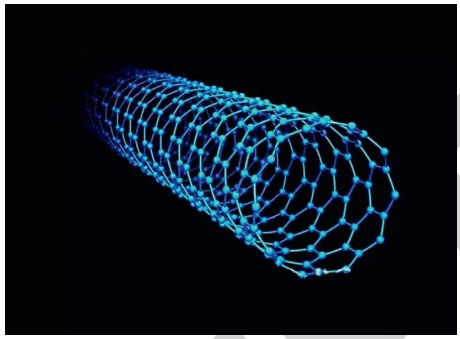

Figure 1: Nanotube molecular structure.

2.2.2. Application of Nanotubes in Orthopedics. At present, many studies on using titanium dioxide nanotubes as drug delivery carriers have shown that the array structure of titanium dioxide nanotubes has a good function of drug release, which can be used in orthopedic implantation and local treatment of drugs, with a relatively good development prospect. By attaching the drug to the nanotube, the nanotube can be directly released and diffused through its tubular array. In general, the spread of drug situation is closely related to specific size and appearance shape nanotubes, and the drug release of the nanotubes mainly includes two phases: the first is the rapid release period a year earlier. During this time, the drug can be released in a relatively short period of time by passing close to the attached nanotubes. The drug release can be used in the treatment of orthopedic implant infection. Too much drug release can cause adverse effect on organisms. It will reduce the efficiency in using drugs. The length of the nanotubes directly affects the time it takes to release the drug and the amount of the drug being loaded. As the length of the nanotube in the vegetation under the anodic oxidation method is relatively short, the release time of the drug is usually less than one week, and the short-term release of the drug cannot meet the needs of long-term treatment and recovery in orthopedics. It cannot completely eliminate the bacterial infection in orthopedics. The second is the slow-release period. In summary, the specific application of nanotubes in orthopedics is mainly reflected in two aspects: the prolongation of drug release time and load delivery of drugs.

The research of nanotubes in drugs shows that promoting the changes of the structure and surface properties of double Enteromorpha nanotube array can effectively improve the overall drug release performance and prolong the drug release time. A novel way to modulate the release of a drug is to coat the surface of the TIO2 nanotube array with a plasma polymer and use this blocking effect to extend the release time to six to eight weeks, with the release curve consistent with the zero-order kinetic equation. Because of the different deposition time required by different plasmons, the thickness of polymer film formed on the surface of the nanotube was also different, and the rate of drug release could be regulated by regulating the thickness of the polymer film. In this way, the amount of drug released is moderate at the initial stage, and then the rate of drug release gradually slows down. The release time of drug can last for several weeks, which can be used in the long-term treatment of orthopedic surgery. Using nanotubes to extend the release time of drugs can not only promote the continuous improvement of surface cell adhesion performance of orthopedic implants but also promote the continuous improvement of bone integration ability.

Current research results demonstrate that the use of oleophilic and hydrophilic polymer micelles to load drugs can achieve multitype drug loading and promote the effective extension of drug release time. When the insoluble drug is loaded into the polymer micelles and the internal intramural nanotube array is completed, the time for drug release can be extended, and the properties of drug release can be controlled by the regulation of the nanotube properties, length, and diameter. Because of the large loading space of the polymer micelles, they have good drug loading performance and can be loaded on multiple drugs at the same time. Moreover, the micelle can automatically avoid the unfavorable system and protect the highly sensitive drug, thus smoothly transferring the drug to the target location. When the drug comes into direct contact with the cell environment, the dissolution rate of the drug can be accelerated. When the nanotube releases a drug, the drug in the upper layer is released first, followed by the drug in the lower layer, so that there is some continuity in the release process. In the process of drug release, the upper and lower micelles are independent of each other, and the type, amount, time, and specific sequence of the loaded drug can be adjusted by adjusting the preparation conditions.

2.3. Rehabilitation Therapy for Roller Skaters. Roller skating is a kind of sport with great wear on the knee joint. It is because, in the process of playing roller skating, the knee joint needs to bear a greater load than walking and running. At the same time, the knee joint needs to often do some activities with a large range. In this process, it is possible to accelerate the wear of the knee joint or cause damage to the knee joint. The rehabilitation therapy of roller skaters mainly includes the muscle strength exercise, reconstruction of proprioception, aerobic exercise, and joint activity training, among which the core rehabilitation training is muscle strength exercise and joint activity training. This rehabilitation therapy of roller skaters makes up for the single drug therapy of nanotube loading, which is beneficial to promote

the recovery of the joint motor function of patients. There are various types of muscle strength exercise training, which can effectively improve the strength of the knee joint, reduce the pain in this area, and promote the improvement of the activity intensity of the knee joint, so that the patients' knee joint exercise ability can quickly return to the normal level. Patients with different types of knee arthritis should choose different types of muscle exercise. The knee joint includes two kinds of free range of motion, respectively, flexion and extension and transverse rotation. The normal movement of the knee joint is closely related to these two kinds of free range of motion. The training of joint movement can help the damaged knee joint quickly recover to the normal range of motion. Active training on the proprioception of the knee joint can help the original adaptive response of knee joint reconstruction and is an essential part of knee joint rehabilitation. To sum up, the rehabilitation therapy of roller skaters is composed of a variety of activities, each of which plays a different role. It should be noted that to ensure the maximum effect of rehabilitation, professional guidance should be provided to patients in the process of activity training. The technology of rehabilitation therapy in the treatment of knee arthritis is becoming more mature, which reduces the operation rate of knee arthritis to a certain extent.

3. Case Study Experiment

3.1. Experimental Subjects and Data. In this study, 92 patients with knee arthritis treated in our hospital from January 2019, to January 2020, were selected as experimental subjects. According to the treatment sequence, 92 patients were divided into observation group and control group on average, with 46 patients in each group. The control group included 26 male and 20 female patients with an average age of 72.32 years and an average course of disease of 3.02 weeks. The observation group included 27 male and 19 female patients with an average age of 70.68 years and an average course of disease of 3.12 weeks. The difference between the basic data of the two groups of patients was not statistically significant and was comparable. In addition, the research experiment has passed the review and approval of the hospital ethics committee. The inclusion criteria of the subjects were as follows: firstly, it was consistent with the diagnostic criteria of knee arthritis. Secondly, the knee joint of the patient has pain symptoms, and the normal movement is limited. Thirdly, the patients had complete clinical treatment data and agreed to participate in the experimental study. The exclusion criteria for experimental subjects were as follows: firstly, knee injuries caused by external injuries. Secondly, patients with lesions in other vital organs. Thirdly, people with mental illness, and finally, the treatment of patients with low coordination.

3.2. Treatment. Load control nanotube drug treatment: the patient is in a supine state. Disinfection treatment is done on the skin's surface of patients along the clearance of the flange joints for puncture. The nanotubes load the drug injected into the joint cavity. Sterile swabs were used for pressure. The pressing time was for 3 to 5 minutes. Pay attention to keep the injection site dry. Avoid infection at the injection site. Patients in the observation group were treated with nanotube-loaded drugs on the basis of combined pulley athlete rehabilitation therapy. Firstly, flat squatting was performed. The patients should stand with their feet spread at the same amplitude as the shoulder width and their heels close to the ground. The knee joint should be in the state of flexion and extension. The flexion and extension should not exceed 130 degrees. Secondly, sling balance was performed. Stand with both feet firmly, hold the sling with both hands, and keep the body balanced. Squat on one leg and increase the angle of flexion and extension as much as possible. Do 3 sets for 10 times every day, with an interval of 3 minutes for each set. Thirdly, the training chair was performed. The back is propped on the chair, and the hip joint flexures and stretches vertically. The duration of this state is 30 s, and the duration of this state is 3 times. It was done for 2 groups per day, and the interval of each group is 2 min. Fourth, the impedance method was performed. Keep the body upright, hips back, waist bent, and the hands and hip bones in the opposite direction of the resistance movement. The resistance movement duration was 30 seconds. It was done 3 times a day for 3 groups, with an interval of two minutes for each group. Fifth, the patients were asked to walk fast and slow. Fast walking and slow walking are alternating with each other. The time of fast walking is 1 minute, and the time of slow walking is 2 minutes. The training time of fast and slow walking is 30 minutes every day. Sixth, the leg flexion and extension and reverse leg flexion and extension training was given. The patients were in the lying position, and the leg flexor and extension training was performed for quadriceps femoris for 10 times in one group. 3 groups were performed daily, with an interval of 2 min for each group. The patient was in prone position, and the reverse leg flexion and extension training was carried out for the biceps femoris in one group of 10 times. 3 groups were carried out daily, with an interval of 2 minutes for each group. One course of treatment was 4 weeks for the two groups, and the efficacy of the two groups was evaluated after 4 courses of treatment.

3.3. Observation Index. Knee function: knee joint function is the primary indicator to evaluate the therapeutic effect of knee arthritis. Lysholm scoring scale was used for the evaluation. The score mainly included 8 items, including walking ability, squatting, and joint stability, with a full score of 80. Secondly, clinical treatment effect score. The patient was able to walk normally up and down the stairs, with no pain in the joints. Free flexion and extension is judged as a cure. The treatment is effective if the joints are able to walk normally, however, there is no obvious swelling after a certain distance. After treatment, severe pain and an obvious swelling of the joint were found to be ineffective. The total effective rate of the treatment was the sum of the cure rate and the effective rate. Thirdly, the complications were counted, and the patients were followed up for 6 months after the treatment to understand the relapse status of the patients. At the same time, to ensure the comprehensiveness

and accuracy of the experiment in this paper, the author also consulted relevant data websites and calculated the morbidity and treatment efficiency of knee arthritis at the present stage.

3.4. Experimental Data Statistics. SPSS statistical software was used to conduct the statistical collation of experimental data. After the completion of data statistics, computer graphics software was used to draw data charts and draw relevant experimental conclusions based on the analysis of data charts.

4. Case Study Experimental Discussion

4.1. Experimental Result

4.1.1. Incidence and Treatment of the Knee Joint. Figure 2 shows the statistical data of the incidence and treatment of knee joints in China in the past five years. It can be seen from the figure that the incidence of knee arthritis in China has been rising in recent years, from 7.21% in 2015 to about 15% in 2019. Treatment effect is also increasing, however, the overall effect is not obvious, rising from 52.13% in 2015 to 55.47% in 2019. The recurrence rate after treatment has been kept at about 17% gradually. From this figure, the current treatment of knee joint has not achieved an ideal effect, which is related to the problems existing in the treatment of knee arthritis at the present stage. From the analysis of the problems in the treatment of knee arthritis in Figure 3, it can be seen that as can be seen from Figure 3, single treatment accounts for 27%, backward treatment accounts for 27%, poor rehabilitation care accounts for 23%, and others account for 23%. In the knee arthritis treatment at present stage, there exists many problems, which are mainly manifested in three aspects: backward treatment methods, single means, and poor postoperative care, the emergence of these problems directly affects the final effect of the treatment of knee osteoarthritis, which must attract our attention.

4.1.2. Comparison of Clinical Efficacy. Table 1 shows the comparison data of clinical treatment effect between the two groups. As can be seen from the data in the table, the number of cured patients in the control group and the observation group were 22 and 30, the effective patients were 16 and 15, the invalid patients were 8 and 1, and the total effective treatment amount was 82.61% in the control group and 97.83% in the observation group. In conclusion, the clinical effect of the rehabilitation therapy combined with nanotubes combined with wheeled athletes is better than that of single nanotube-loaded drug therapy slide.

4.1.3. Comparison of Lysholm Scores. Figure 4 is a comparison of the Lysholm score results. From the data in the figure, it can be seen that the nanotube drug treatment in the control group increased by about 40% before and after the nanotube drug treatment. When the athletes using nanotubes combined with roller skates underwent rehabilitation treatment, the observed curative effect group increased by about 42%, indicating that nanotubes combined with rehabilitation therapy can promote the therapeutic effect of knee arthritis in roller skaters.

4.1.4. Comparison of Complications and Recurrence Rate. Figure 5 shows the comparison of complications and recurrence rates between the two groups. It can be seen from the figure that the complications and recurrence rates of the control group are 10.21% and 9.84%, respectively. The incidence of complications and recurrence rates in the observation group were 1.24% and 0.98%, respectively, which were far lower than those in the control group. It indicates that the rehabilitation therapy of nanotube-combined athletes is less likely to have complications and relapse in the treatment of knee arthritis.

4.2. Result Discussion. Articular cartilage and periosteum inflammatory lesions are the two main characteristics of knee arthritis. Performance is not obvious in the primary stage of the disease symptoms. Generally, it is difficult to find, however, with the deepening of the illness, patients can show a series of symptoms, such as joint swelling and pain and in severe cases, chronic disability may occur and they cannot walk normally. At this stage, experts and scholars on the pathogenesis of knee arthritis have not formed a unified conclusion. The medical community generally believe that the generation of knee arthritis is the result of a variety of factors. The commonly agreed factors include genetics, obesity, water prison, and joint overuse. At present, there are also studies that the imbalance of knee biomechanics is an important factor causing knee arthritis. When joint susceptive pressure is too great, the collagen fibers can produce fatigue. Fatigue will occur to a certain degree of exercise, resulting in the occurrence of degenerative diseases. Osteoarthritis also develops on the surface of the articular cartilage, leading to a persistent inflammation around the knee joint, which, in turn, produces swelling and stiffness and affects the normal movement of the body. In this way, patients' life treatment and normal activities will be seriously affected and will even lead to cardiovascular diseases, posing a serious threat to people's life safety.

Sodium hyaluronate is the component of cartilage matrix and joint lubricant. The stability of joint function plays an important role in promoting the recovery of joint function. It can prevent and reduce the occurrence of knee osteoarthritis to a certain extent, promote the continuous reduction of joint force, and have a good inhibitory effect on the production of articular cartilage lesions. However, knee arthritis is a chronic disease, which is prone to relapse. Although nanotube drug delivery therapy alone can reduce the degree of cartilage damage and promote the effective inhibition of inflammation, it cannot fundamentally treat knee arthritis. Overall, its therapeutic effect needs to be improved. Currently, studies have demonstrated the effectiveness of rehabilitation therapy for roller skaters in the treatment of knee arthritis. Such rehabilitation therapy can not only reduce patients' pain but also promote the effective improvement of joint function in patients. Joint disorders and pain are two of the most

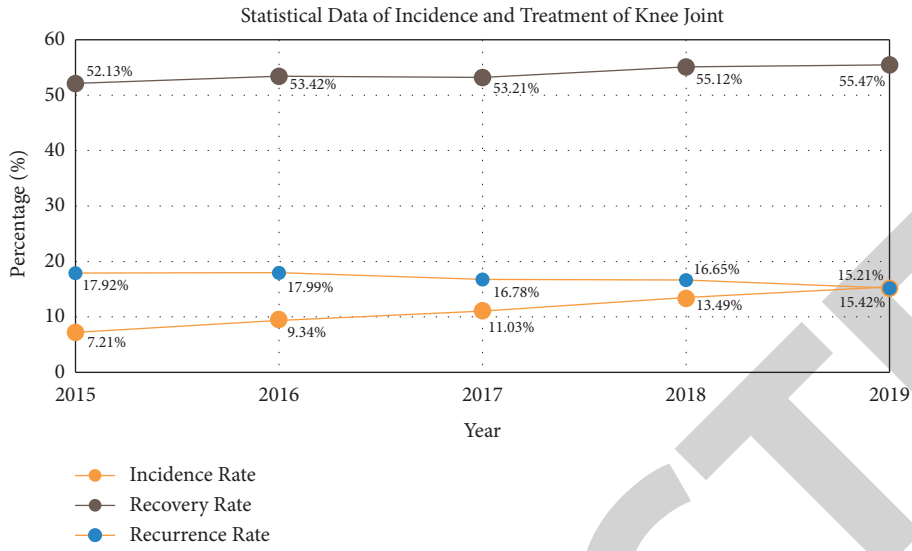

Figure 2: Statistical data of the incidence and treatment of the knee joint.

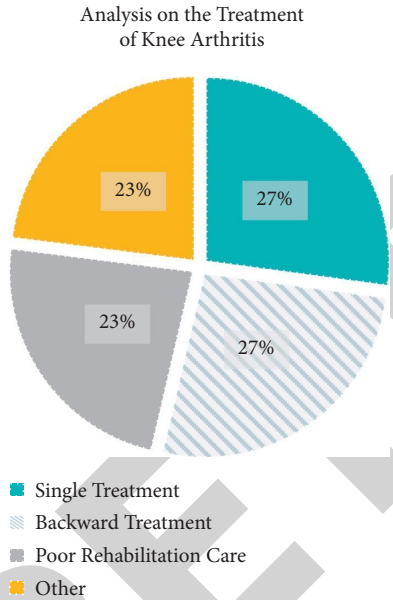

Figure 3: Analysis of the treatment of knee arthritis.

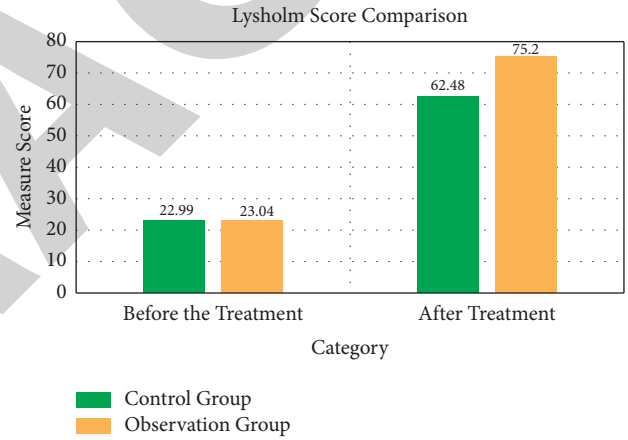

Figure 4: Comparison of Lysholm scores.

Table 1: Comparison of clinical treatment effect between the two groups.

Group	Cure	Effective	Invalid	Total effective rate
Control group	22	16	8	38 (82.61%)
Observation group	30	15	1	45 (97.83%)

Data came from the experimental analysis.

common clinical symptoms in patients with knee joint problems that further limit joint activity. Inadequate activity can lead to muscle weakness and soft tissue stiffness, further exacerbating the severity of knee arthritis. Proper and scientific joint activities can effectively compress cartilage and relax the articular cartilage. Based on the compression effect,

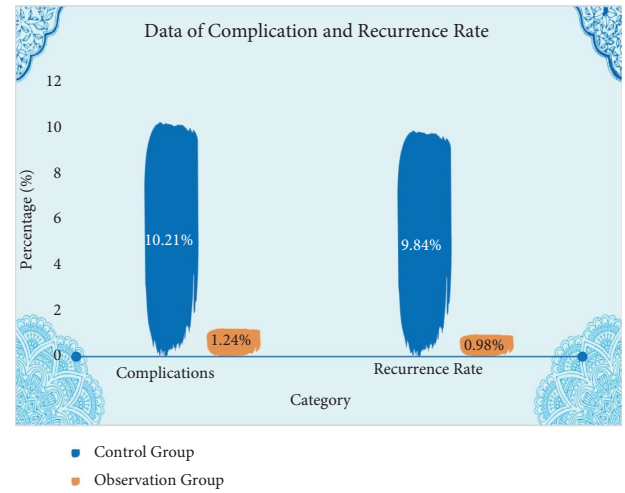

Figure 5: Comparison of complications and recurrence rates between the two groups.

the fluid inside the cartilage matrix keeps overflowing and the joint fluid takes the opportunity to flow into the matrix. Therefore, proper exercise training can accelerate the circulation of synovial fluid and effectively reduce synovial inflammation, and the damaged cartilage surface can be well-repaired to reduce pain and promote the continuous improvement of joint flexibility and overall joint function. In addition, the rehabilitation therapy of roller skaters can also reduce the inhibitory effect on muscles through the enhancement of quadriceps muscle strength, promote the effective recovery of muscle strength, and promote the continuous improvement of the overall stability of joints.

In this paper, the research results show that after the treatment, the curative effect of the observation group and the joint movement function score is significantly higher than that in the control group, indicating that the nanotube treatment combined roller skating athlete rehabilitation therapy can effectively improve the curative effect of knee osteoarthritis and help the effective recovery of knee joint motion function. The recurrence rate and complication probability is low. It shows that the proposed joint treatment is not only effective but also highly safe. It can reduce the probability of recurrence and consolidate the therapeutic effect. Therefore, the combined treatment of nanotube and roller skater rehabilitation therapy is worth to be widely used in clinical practice.

5. Conclusion

In this study, by comparing the therapeutic effects of the nanotube-combined roller skater rehabilitation therapy group and the control treatment group, the clinical therapeutic effects of the two groups were comprehensively evaluated. The curative effect and joint motor function score of the observation group were significantly higher than those in the control group, indicating that nanotube therapy combined with roller skater rehabilitation therapy can effectively improve the curative effect of patients. The final results showed that the combined therapy of nanotube and roller skater was effective and safe. Hence, it could be widely used in the clinical treatment of knee arthritis. However, because of the lack of a complete evaluation system for the rehabilitation therapy of roller skaters at this stage, it has certain limitations and needs to be further improved.

Data Availability

The data that support the findings of this study are available from the author upon reasonable request.

Conflicts of Interest

The author declares no conflicts of interest.

Acknowledgments

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