

Clinical Efficacy of Traditional Chinese Medicine Orthopedic in the Treatment of Senile Osteoarthritis

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Abstract: *Objective:* This paper aims to explore and analyze the clinical effect of traditional Chinese medicine (TCM) orthopedic treatment on elderly patients with osteoarthritis. *Methods:* The study period is from January 2021 to June 2023. 62 elderly patients with osteoarthritis admitted to our hospital were selected and divided into the study group ($n = 31$) and the control group ($n = 31$) using the random number table scheme. The patients in the control group were treated with conventional Western medicine acetaminophen, and the patients in the study group were treated with traditional Chinese medicine orthopedic. The treatment options included manual massage, traditional Chinese medicine fumigation, and oral administration of traditional Chinese medicine. The clinical effective rate, osteoarthritis function Japanese Orthopedic Association score (JOA), visual analogue pain score (VAS), and incidence of adverse reactions were compared between the two groups. *Results:* The clinical effective rate of patients in the study group was higher than that of the control group ($P < 0.05$), the JOA score of the patients in the study group was higher than that of the control group after treatment ($P < 0.05$), while the VAS score of the patients in the study group was lower than that of the control group after treatment ($P < 0.05$). Plus, the incidence of adverse reactions in the study group was lower than that in the control group ($P < 0.05$). *Conclusions:* TCM orthopedic treatment for elderly patients with osteoarthritis has a significant effect, it can improve joint function, relieve pain, with a low incidence of adverse reactions, which can be widely applied in clinical practice.

Keywords: TCM orthopedic; Senile osteoarthritis; Joint function; Pain; Adverse reaction

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1. Introduction

Osteoarthritis is a common joint tissue lesion in clinical practice. The main lesion feature is the damage of articular cartilage, which can lead to the damage of the entire joint tissue. The main clinical symptoms are joint pain, swelling, bone friction sound, deformity, accompanied by joint stiffness, decreased joint range of motion, etc., which can adversely affect patients' daily activities^[1]. The main goal of clinical treatment of osteoarthritis is to relieve pain, correct joint deformity, improve joint function, and improve the patients' quality of life^[2]. The main solution of Western medicine for the treatment of osteoarthritis is analgesic drug intervention, which has

the main drawback of short duration of drug effect and frequent adverse reactions. In the theory of traditional Chinese medicine (TCM), senile osteoarthritis is a bone numbness, and the treatment should be based on the principle of regulating *qi* and blood, and removing pathogenic wind, cold, and dampness^[3,4]. In this study, 62 elderly patients with osteoarthritis were selected to explore and analyze the clinical effect of traditional Chinese medicine orthopedic treatment.

2. Materials and methods

2.1. General information

The relevant procedures of this study are all submitted to the approval of the Medical Ethics Committee. The study period is from January 2021 to June 2023. 62 elderly patients with osteoarthritis admitted to our hospital were selected and divided into the study group ($n = 31$) and the control group ($n = 31$) by random number table scheme. The study group consisted of 17 males and 14 females, aged 65–77 years, with an average of 71.58 ± 3.66 years old, and a range of disease duration of 1–5 years, and an average of 2.96 ± 0.77 years. In the control group, there were 19 males and 12 females, aged 66–75 years, with an average of 71.62 ± 3.61 years old, the disease duration was 1–4 years, and the average was 2.88 ± 0.79 years.

Inclusion criteria included patients diagnosed with osteoarthritis by imaging examination, patients who did not receive symptomatic treatment before enrollment, and patients who know the study process and content and sign the consent document.

Exclusion criteria were patients with systemic diseases such as liver and kidney diseases, patients who have recently taken anti-inflammatory and analgesic drugs, and patients with pregnancy disorders or mental diseases.

2.2. Methods

The patients in the control group were treated with conventional Western medicine acetaminophen, 3 times a day orally, 30–60mg a day, for a total of 1 month.

The patients in the study group were treated by TCM orthopedic. The physician followed the theory of TCM and adopted the following treatment plan in combination with the characteristics of the patient's condition, for a total of 1 month.

- (1) Physician performs pinching manipulation on the patient's quadriceps muscle, pulls the knee joint, massages the patella, and performs point pressing on the patient's Liangqiu, Xuehai, inner and outer knee eyes, and Weizhong acupoints, 2 times a day, with 30 minutes for each treatment.
- (2) Oral administration of traditional Chinese medicine. Physicians determine the medication plan based on the patient's condition and TCM syndrome type, guide the patient to take Xiaobi Decoction, Liuwei Dihuang Pill, Duhuo Jisheng Decoction, and other drug prescriptions, and adjust the medication plan appropriately according to the patient's clinical symptoms to achieve the best therapeutic effect.
- (3) Traditional Chinese medicine fumigation. The traditional Chinese medicine fumigation drug prescription is *Lycopodium clavatum* 25g, *Radix aconiti* 15g, *Clematis* 25g, *Angelica dahurica* 15g, *Pittosporum* bark 30g, *Sperancus* 30g, *Ligusticum wallichii* 15g, *Saposhnikovia divaricata* 10g, and Sappanwood 25g. 1L of clear water is added to the above medicinal formula and soaked for 30 minutes, and after boiling, the joint lesion area is fumigated, twice a day, with each fumigation time of 20–30 minutes.

2.3. Evaluation criteria

After 1 month of treatment, the clinical effective rate of the two groups was assessed. The following performance were evaluated as effective: relief of pain and other symptoms, improvement of joint function, no complications of other types, mild limitation of daily activities. If the treatment does not meet the criteria of evaluation, the treatment is ineffective. The effective samples are included as the category of effective treatment. Moreover, the osteoarthritis function Japanese Orthopedic Association score (JOA) of the two groups was evaluated before treatment and after 1 month of treatment. The scoring items include sensation, bladder function, upper limb motor function, and lower limb motor function. The full score for each item is 5 points, the higher the score, the better the joint function. Additionally, the visual analogue pain scale (VAS) of the two groups was evaluated before treatment and after 1 month of treatment. The full score is 10 points. The higher the score, the more severe the pain. Statistics on the incidence of adverse reactions in the two groups of patients were also evaluated.

2.4. Statistical methods

SPSS23.0 software was used to analyze the research data, measurement data (mean \pm standard deviation) was *t* test, count data % was χ^2 test, $P < 0.05$ indicated that there was a statistical level difference.

3. Results

3.1. Comparison of the clinical effective rate

As shown in **Table 1**, the clinical effective rate of patients in the study group was higher than that in the control group ($P < 0.05$).

Table 1. Comparison of clinical effective rate between two groups of patients (n/%)

Group	Markedly effective	Effective	Ineffective	Total effective rate
Study group (<i>n</i> = 31)	24	7	2	29 (93.5)
Control group (<i>n</i> = 31)	17	6	8	23 (74.2)
χ^2 value	-	-	-	4.292
<i>P</i> value	-	-	-	0.038

3.2. Comparison of JOA scores

As presented in **Table 2**, after treatment, the JOA scores of the patients in the study group were higher than those in the control group ($P < 0.05$).

Table 2. Comparison of JOA scores between the two groups (mean \pm standard deviation)

Group	Overall feeling		Bladder function		Upper limb motor function		Motor function of lower extremities	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Study group (<i>n</i> = 31)	1.63 \pm 0.41	4.08 \pm 0.55	1.84 \pm 0.52	4.12 \pm 0.63	1.77 \pm 0.24	4.01 \pm 0.63	1.59 \pm 0.44	3.96 \pm 0.57
Control group (<i>n</i> = 31)	1.59 \pm 0.44	2.97 \pm 0.24	1.79 \pm 0.56	3.08 \pm 0.25	1.75 \pm 0.28	2.58 \pm 0.29	1.62 \pm 0.38	2.84 \pm 0.33
<i>t</i> value	0.370	10.299	0.364	8.543	0.302	11.480	0.287	9.468
<i>P</i> value	0.712	0.000	0.717	0.000	0.764	0.000	0.775	0.0000

3.3. Comparison of VAS scores

As shown in **Table 3**, the VAS score of the study group was lower than that of the control group after treatment ($P < 0.05$).

Table 3. Comparison of VAS scores between the two groups (mean \pm standard deviation)

Group	Before treatment	After treatment
Study group ($n = 31$)	4.88 \pm 1.26	1.35 \pm 0.29
Control group ($n = 31$)	4.93 \pm 1.22	2.27 \pm 0.71
<i>t</i> value	0.159	6.679
<i>P</i> value	0.874	0.000

3.4. Comparison of the incidence of adverse reactions

As demonstrated in **Table 4**, the incidence of adverse reactions in the study group was lower than that in the control group ($P < 0.05$).

Table 4. Comparison of the incidence of adverse reactions between the two groups of patients (n/%)

Group	Headache	Gastrointestinal reaction	Rash	Incidence of adverse reactions
Study group ($n = 31$)	0	1	0	1 (3.2)
Control group ($n = 31$)	2	3	1	6 (19.4)
χ^2 value	-	-	-	4.026
<i>P</i> value	-	-	-	0.044

4. Discussion

Osteoarthritis is a lesion that involves the entire joint tissue, with articular cartilage damage as the main lesion. It is the main cause of articular cartilage fibrosis, degeneration, defect, and fracture. The main clinical symptoms were joint pain, stiffness, and reduced motion, and these were accompanied by joint deformity and enlargement, joint weakness, and muscle atrophy in some patients^[5]. Osteoarthritis mainly affects the elderly, and it can have an impact on the work and life of patients, thus it is necessary to control the disease early.

The goal of clinical treatment of osteoarthritis is to relieve discomfort symptoms, correct joint deformities, control disease progression, and gradually improve joint function^[6]. The conventional treatment for osteoarthritis in Western medicine is analgesic and anti-inflammatory drug intervention. Acemetacin is a typical analgesic and anti-inflammatory drug. After medication, it can inhibit the body's inflammatory response, and relieve pain and other symptoms, but the duration of the drug's effect is short, hence recurrent pain after drug withdrawal, long-term drug resistance, and adverse reactions are likely to occur, which then affect the recovery process^[7,8]. According to the traditional Chinese medicine, senile osteoarthritis is bone arthralgia, and its main pathogenesis is that wind-cold-damp pathogens invade the joint tissues, leading to stagnation of *qi* and blood stasis, damage to joints, muscles, tendons, and bones, resulting in morning stiffness, pain, numbness, swelling, and other clinical symptoms^[9]. Traditional Chinese medicine treatment of senile osteoarthritis is based on the characteristics of the patient's condition. The use of drugs, massage, and other programs can relieve symptoms and eliminate the pathogen. The treatment is simple, without toxic side effects, and the patient's tolerance to the treatment program is high. Tuina therapy is a characteristic treatment plan of traditional Chinese medicine. Massage of muscles, joints, and specific acupoints can improve local blood supply, loosen joint adhesions,

repair damage, and improve joint mobility ^[10]. In the internal treatment plan of traditional Chinese medicine, doctors use prescriptions such as Xiaobi Decoction, Liuwei Dihuang Pills, and Duhuo Jisheng Decoction. Long-term use can dispel wind and cold, promote blood circulation, and remove blood stasis, clear the internal pathogen of the body, and effectively relieve various symptoms. Traditional Chinese medicine fumigation is a characteristic TCM external treatment program. The thermal stimulation can induce the drug to penetrate into the subcutaneous joint tissue, and can achieve the clinical effects of expelling wind and cold, promoting blood circulation, relieving pain, and removing blood stasis. The rational use of different TCM treatment programs can relieve pain and other symptoms, improve local blood circulation, and eliminate pathogen such as wind, cold and dampness, and its curative effect is significantly better than that of a single Western medicine treatment ^[11].

The results of this study showed that the clinical effective rate of patients in the study group was higher than that of the control group, and JOA score and VAS score were both better than those of the control group, suggesting that orthopedic treatment of traditional Chinese medicine can relieve pain and improve joint function in elderly patients with osteoarthritis, and the efficacy is better than that of single Western medicine treatment. Acemetacin is an anti-inflammatory and analgesic drug with a rapid onset of effect, which can relieve inflammation and pain in a short period of time, but the long-term treatment effect is poor, which is not conducive to the recovery of the patient. In the orthopedic treatment mode of traditional Chinese medicine, physicians perform massage therapy on diseased joints, which can improve local metabolism and blood circulation, loosen adhesions, repair damaged tissues, relieve pain, and improve motor function ^[12]. In the treatment plan of traditional Chinese medicine, doctors combine oral medicine with traditional Chinese medicine fumigation. The selected medicine formula has the effects of promoting blood circulation and relieving pain, reducing swelling and diuresis, warming meridian and dispelling cold and wind, which can eliminate internal pathogen, strengthen local stimulation, and then effectively control the disease and improve the therapeutic effect ^[13]. Compared with Western medicine treatment schemes, TCM orthopedic treatment schemes are diverse, and different schemes can produce synergistic effects, which can effectively control the patient's condition and improve the therapeutic effect ^[14]. The results of this study showed that the incidence of adverse reactions in the study group was lower than that in the control group. The reason is that long-term application of Western medicine can produce side effects. The orthopedic treatment of traditional Chinese medicine uses pure natural Chinese medicinal materials, and the incidence of adverse reactions is low ^[15].

In summary, the orthopedic treatment of traditional Chinese medicine has a significant effect on elderly patients with osteoarthritis, can improve joint function, relieve pain, with a low incidence of adverse reactions, which can be widely applied. The number of elderly patients with osteoarthritis included in this study was small, and the specific plan and mechanism of traditional Chinese medicine orthopedic treatment for elderly patients with osteoarthritis still need to be analyzed.

Disclosure statement

The author declares no conflict of interest.

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