

Research Progress of Traditional Chinese Medicine Treatment of Knee Osteoarthritis

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Abstract: *Knee osteoarthritis (KOA) is a common degenerative joint disease, which seriously affects the quality of life of patients. In recent years, traditional Chinese medicine has made remarkable progress in the treatment of KOA. This paper reviews the understanding of the etiology and pathogenesis of KOA in traditional Chinese medicine, and introduces the research status of oral administration, external use, acupuncture, massage and other treatment methods in detail. Studies have shown that traditional Chinese medicine has the advantages of multi-target and overall regulation in the treatment of KOA, which can effectively relieve pain and improve joint function. Future research should further explore the mechanism of traditional Chinese medicine treatment, optimize the treatment plan, and improve the clinical efficacy.*

Keywords: Knee osteoarthritis, Chinese medicine treatment, Traditional Chinese medicine, Acupuncture, Massage.

1. Introduction

Knee osteoarthritis (KOA) is a chronic joint disease characterized by cartilage degeneration of the knee joint, also known as proliferative arthritis, hypertrophic arthritis, etc., mainly manifested as knee pain, swelling, and joint stiffness [1]. KOA occurs in middle-aged and elderly people, which seriously affects the quality of life of middle-aged and elderly people, and brings a heavy burden to patients and society. With the increasing aging in China, this problem has also become prominent [2]. Therefore, in the current clinical work, it is necessary to help patients with knee osteoarthritis get effective treatment as the top priority of clinical work.

For this disease, the current treatment is divided into conservative treatment and surgical treatment. Conservative treatment such as drug therapy, acupuncture and massage, intra-articular injection; surgical treatment such as arthroscopy, high tibial osteotomy, unicompartmental knee arthroplasty, total knee arthroplasty [3]. At present, conservative treatment mostly uses drugs such as celecoxib. Literature shows that celecoxib can inhibit the inflammatory response of KOA by inhibiting inflammatory response factors, thereby inhibiting the inflammatory response of KOA and alleviating the pain of patients. However, there are still some shortcomings in the conservative treatment of oral non-steroidal anti-inflammatory drugs, such as the need to be alert to gastrointestinal and cardiovascular adverse events, and the short timeliness of intra-articular injection. Although the surgical treatment of knee osteoarthritis is becoming more and more mature, the surgical treatment needs to consider the patient's lesion size, self-demand, complication risk, economic burden and many other factors, and is not the first choice for patients [4]. At the same time, a large number of literatures show that traditional Chinese medicine has unique clinical advantages in the treatment of knee osteoarthritis. Traditional Chinese medicine has a long history of prevention and treatment of KOA. It has significant advantages such as relatively low treatment cost, low side effects and good curative effect, which has attracted people's attention and attention. The purpose of this paper is to systematically

review the research status of traditional Chinese medicine in the treatment of KOA, and to provide reference for clinical practice and future research.

2. Traditional Chinese Medicine Understanding of Knee Osteoarthritis

According to traditional Chinese medicine, knee osteoarthritis belongs to the category of 'arthralgia', 'bone arthralgia', 'knee arthralgia', 'Lijie' in terms of its etiology, pathogenesis and clinical manifestations. Knee osteoarthritis is generally middle-aged and elderly patients, people to middle age after the liver and spleen and kidney gradually loss, combined with the wind cold dampness evil invasion of the virtual stay in the joint; or fall sprain or long-term strain, resulting in meridian obstruction, bone vein stasis, obstruction is pain [5]. Although the disease is located in the knee, the pathogenesis is in the liver and kidney, and the deficiency in origin and the excess in superficiality. It is based on 'deficiency', and 'evil and stasis' as the standard, that is, liver and kidney deficiency, qi and blood weakness, Wei Biao is not solid to feel wind, cold and dampness, and blood stasis is the standard. Liver storing blood and kidney storing essence and bone, liver and kidney deficiency, bone and tendon dystrophy, the joint is unfavorable; and liver and kidney loss, essence and blood loss, yin and yang mutual root, is caused by striae empty, evil resistance meridians, tendons spasm, resulting in knee arthralgia. Therefore, the treatment of knee arthralgia should be based on tonifying liver and kidney qi and blood, supplemented by dispelling wind and cold, removing dampness and dredging collaterals.

3. Research Progress of Traditional Chinese Medicine in the Treatment of Knee Osteoarthritis

3.1 External Treatment of Traditional Chinese Medicine

The external treatment of traditional Chinese medicine is a treatment method that directly acts on the diseased part

through plaster application, traditional Chinese medicine fumigation, fumigation, hot ironing and so on [6]. The advantage of external treatment of traditional Chinese medicine lies in the use of drugs at the diseased site, direct transdermal absorption, which can quickly improve local pain and other symptoms and signs, and avoid the 'first-pass effect' of the liver [7]. The commonly used traditional Chinese medicines for external treatment generally include the following categories: promoting blood circulation and removing blood stasis, relaxing tendons and activating collaterals, removing blood stasis and relieving pain, such as safflower, turmeric, mulberry branch, lycopodium, sea tung bark, angelica dahurica, *Achyranthes bidentata*, and Zelan, Constituent prescriptions: Sanyu Heshang Decoction, Baxian Xiaoyao Decoction, Haitongpi Decoction, upper limb injury washing prescription, lower limb injury washing prescription, Shujin medicinal liquid, etc.; Warm and cold type, such as: Chuanwu, Caowu, Aiye, Guizhi, Xixin, Ganjiang, Qianghuo, etc., into the party such as Chuanyunsan, compound Wentongsan Xiaoyusan; ruanjian Sanjie, Qushi Huatan class, such as: Bombyx Batryticatus, *Atractylodes*, *Atractylodes*, Arisaema, white mustard, Pinellia, such as Jinhuang Powder, Sisheng Powder, Wulong Powder, etc.

3.2 Traditional Chinese Medicine Internal Treatment

Traditional Chinese medicine believes that KOA belongs to the category of 'arthralgia syndrome' and 'tendon arthralgia'. 'Plain question · long thorn section' says: 'The disease is in the tendon, the tendon contracture is painful, and it cannot be performed, which is called 'tendon arthralgia' [8].' The etiology and pathogenesis are mostly deficiency, evil and stasis, which are the main symptoms of deficiency in origin and excess in superficiality. The root cause is deficiency of liver, spleen and kidney, deficiency of qi and blood, dystrophy of sinews and bones. Wind-cold dampness obstruction and qi stagnation and blood stasis are also the causes of this disease. Referring to the 'Expert Consensus on TCM Diagnosis and Treatment of Knee Osteoarthritis (2015 Edition)' [9], the disease was treated based on syndrome differentiation. Cold dampness obstruction syndrome, cold evil stagnation in the bones, resulting in joint contracture, urgent adverse, it should be warm and cold, nourishing blood and dredging veins. Commonly used clinical Chinese medicine: ephedra, asarum, cassia twig, notopterygium, angelica, red peony root, white peony root, etc. Prescription: Juanbi Decoction, Magui Wenjing Decoction, Wutou Decoction, etc.; Qi stagnation and blood stasis syndrome, external evil stagnation of meridians, emotional injury, or strain caused by poor qi movement, blood stasis and bones, pain caused by obstruction, should adopt the method of promoting blood circulation to remove blood stasis, dredging collaterals and relieving pain. Clinical commonly used traditional Chinese medicine: safflower, frankincense, myrrh, *Achyranthes bidentata*, Chuanxiong, *Spatholobi Caulis*, *Rehmannia*, Angelica, etc. Prescription: Taohong Siwu Decoction, Fuyuan Huoxue Decoction, Xuefu Zhuyu Decoction, etc. Liver and kidney deficiency syndrome, liver deficiency is blood does not nourish tendons, tendons are difficult to maintain bone relaxation, kidney deficiency is not enough to generate marrow, bone is difficult to form, should adopt the method of nourishing liver and kidney, commonly used clinical Chinese medicine: Taxilli Herba, Cistanches Herba, *Eucommiae Cortex*, *Drynariae Rhizoma*, *Rehmannia*

Radix Preparata, *Polygoni Multiflori Radix*, *Lycii Fructus*, etc. Prescription: Zuogui Pill, Shenqi Pill, Liuwei Dihuang Pill, etc. Qi and blood deficiency syndrome, qi and blood deficiency, tendon and bone dystrophy and flaccidity, should adopt the method of tonifying qi and nourishing blood, commonly used clinical Chinese medicine: angelica, *radix paeoniae rubra*, *radix paeoniae alba*, *radix rehmanniae*, *radix astragali*, dangshen, etc. Commonly used prescriptions: siwu decoction, bazhen decoction, danggui buxue decoction, shiquan dabu decoction, etc. The above prescriptions should be modified according to the symptoms to form an individual treatment plan.

4. Research Progress of Acupuncture Treatment of Knee Osteoarthritis

As an important part of Chinese medicine, acupuncture is popular at home and abroad. Acupuncture has a long history, non-toxic side effects, small trauma, etc. Clinically, it has been verified that acupuncture can dredge meridians, promote blood circulation, dissipate blood stasis, and enhance tissue metabolic rate. Combined with traditional Chinese medicine adjuvant therapy, the drug can quickly reach the whole body with the blood, promote the further absorption of inflammation, effectively relieve the patient's knee joint pain, enhance the patient's knee joint flexibility, and delay the progress of KOA [10-12].

5. Research Progress of Massage in the Treatment of Knee Osteoarthritis

Massage treatment of KOA mainly acts on the soft tissue around the knee joint through manipulation, improves blood circulation, relaxes adhesions, and regulates the balance of joint mechanics. Massage can 'Shujin' and 'Zhenggu', with the functions of relaxing tendons and activating collaterals, removing blood stasis and activating blood, loosening adhesion, relieving pain, smoothing joints, and correcting wrong joints. Commonly used techniques include single therapy such as pushing, taking, kneading, rolling, rubbing, and patting, as well as integrated techniques such as rubbing and pressing [13]. The treatment of massage manipulation is based on the basic theory of traditional Chinese medicine and combined with modern medical theory to promote the metabolism of skeletal muscle cells and the repair of surrounding tissues, exercise muscle strength and delay the degradation of cartilage, to enhance the muscle strength and stability of the knee joint [14], so that the patient's knee joint function can be faster recovery.

6. Research Progress of Other Therapies in the Treatment of Knee Osteoarthritis

Tai Chi is one of the traditional fitness sports in China. Its movement is gentle and slow, dynamic and static, bone is soft, strength and frequency are easy to control, so that the blood circulation of the whole body can be improved, and it is not limited by the site, easy to promote the application. At present, many literatures and systematic reviews have shown that Tai Chi is effective in the treatment of knee osteoarthritis, which can relieve joint pain, stiffness and improve joint function [15]. Improve the patient's exercise capacity and quality of

life.

7. Discussion and Outlook

The treatment of KOA with traditional Chinese medicine is guided by the overall concept, focusing on syndrome differentiation and treatment, and adopting the overall advantages of comprehensive treatment of traditional Chinese medicine to regulate the overall immune function of the human body. The advantage of traditional Chinese medicine in the treatment of KOA lies in multi-target and overall regulation, which can not only relieve symptoms, but also regulate systemic function and delay disease progression. With the deepening of research and the progress of technology, TCM treatment of KOA will show greater potential and value, and provide more safe and effective treatment options for KOA patients. With the improvement of people's living standards and the diversified understanding of disease diagnosis and treatment, higher requirements have been put forward for the treatment of KOA. In the future, the use of traditional Chinese medicine clinical comprehensive therapy and the establishment of traditional Chinese medicine treatment mechanism are important research directions for the prevention and treatment of KOA.

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