Research Progress of Acupuncture and Moxibustion in the Treatment of Knee Osteoarthritis

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Abstract: Knee osteoarthritis (KOA) is also known as knee degenerative arthritis. Its core change is the degenerative change of articular cartilage. At the same time, it involves the articular cartilage of the knee, resulting in degenerative change, accompanied by the following symptoms: cartilage exfoliation, cartilage bone hyperplasia, synovial inflammation, gradually destroy the joint, make it deformed, and finally lead to joint dysfunction. It is an osteoarthropathy mostly occurring in the elderly[1]. Both men and women can get sick. According to the report of the World Health Organization, osteoarthritis will become the fourth major disability disease in the world by 2020[2]. According to relevant data[3]: up to 3% of the people in China are suffering from osteoarthritis, of which the incidence rate of knee osteoarthritis is relatively large. About 60% of the people over 55 years old are older than 65 years old, and the incidence rate is 85%. With the increasing trend of population aging in China, the incidence rate of KOA is increasing year by year, which affects the physical and mental health of patients. Objective: In recent years, the research on the treatment of knee osteoarthritis with Traditional Chinese Medicine has become white hot, and great progress has been made. The main treatment methods include oral administration of Traditional Chinese Medicine, external use of Traditional Chinese Medicine and acupuncture and massage. Moxibustion has the function of warming and dredging meridians, and has become one of the research hotspots nowadays. Methods: This paper briefly summarizes the current situation of Moxibustion in the treatment of KOA in recent years, and puts forward the existing problems and future development direction.

1. Introduction

1.1 Disease Name

There is no clear record of the disease name of knee osteoarthritis in Traditional Chinese Medicine Classics, but many ancient documents record titles such as “Xibi”, “tendon injury”, “JianXi” and “Hexi wind”[4-5], in which the symptoms described are similar to those of knee osteoarthritis, which provides a reference for future research on knee osteoarthritis. The disease part of clinical diagnosis and treatment terms of Traditional Chinese Medicine[6] formulated by the China Administration of Traditional Chinese Medicine regulates that “bone arthralgia” is the Traditional Chinese Medicine name of osteoarthritis, and knee osteoarthritis is named “knee arthralgia”, which is the consensus reached on the Traditional Chinese Medicine name of knee osteoarthritis.

1.2 TCM Treatment

Most patients with knee arthralgia have a long history of Traditional Chinese Medicine treatment, which can improve their pain and improve their quality of life[7]. It is mainly divided into external treatment of Traditional Chinese Medicine and internal treatment of Traditional Chinese Medicine, such as Traditional Chinese Medicine, acupuncture, massage and other therapies.

1.2.1 Oral administration of Traditional Chinese Medicine

Traditional Chinese Medicine has been used to treat this disease since ancient times. Oral administration of Traditional Chinese Medicine is also a commonly used method to treat knee osteoarthritis. Traditional Chinese Medicine treatment of this disease mainly focuses on tonifying deficiency, warming and dredging, promoting blood circulation and removing blood stasis, dispelling wind and dehumidification, so as to achieve the effect of tonifying deficiency, discharging excess and treating disease. Traditional Chinese Medicine pays special attention to the compatibility of monarchs, ministers and envoys. It focuses on the overall concept. At the same time, it adds and subtracts with the syndrome according to the differences of individual conditions, which reflects the characteristics of the same disease, different treatment and people-oriented. Wang Hongjiang[8] et al. Used Xianling Gubao capsule and Bushen Zhuanggu Decoction to treat knee osteoarthritis and observed its clinical efficacy, and evaluated the knee function of the two groups before and after treatment. The treatment results showed that the total effective rate of the observation group was higher than that of the control group (P<0.05). After treatment, the total score of TCM symptoms and pain score of the observation group were lower than those of the control group (P<0.05). It is suggested that buxian Gubao capsule combined with shenzhuanggu decoction can disperse cold and relieve pain, tonify liver and kidney, reduce swelling and dampness, promote blood circulation and remove blood stasis, and enhance the therapeutic effect of KOA.

1.2.2 External treatment with Traditional Chinese Medicine

External treatment of Traditional Chinese Medicine is based on the basic theory of Traditional Chinese Medicine, taking the skin as the treatment part, placing drugs with external treatment effect to stimulate meridians and acupoints, so as to achieve the purpose of treating and preventing diseases. The external treatment of Traditional Chinese Medicine is effective, green, safe and easy to operate. It is widely used in clinical treatment. The commonly used methods include fumigation, application, medicine bath and so on. Traditional Chinese Medicine fumigation and washing therapy has the functions of clearing heat and dispersing cold, expelling wind and dampness, dredging meridians and dredging collaterals.
through the dual effects of Traditional Chinese Medicine and water vapor. It is one of the commonly used external treatment methods in Traditional Chinese Medicine. Wang Yanhui[9] and others included 100 subjects with knee synovitis and randomly divided them into two groups, 50 cases in the control group and 50 cases in the treatment group. The treatment group was treated with exercise therapy combined with acupoint application. The drugs were applied to Ashi acupoints, Yanglingquan acupoints, Zusanli acupoints, internal and external knee eyes and changed once a day for 4 weeks; The control group was treated with oral non steroidal anti-inflammatory and analgesic drugs. Loxoprofen sodium tablets were used here, 1 tablet/time, 3 times/d for 4 weeks. The results showed that the two groups had the same curative effect (P>0.05), but the combination of the two treatment methods had higher safety, higher patient compliance and satisfaction.

1.2.3 Acupuncture treatment

The treatment of knee arthralgia by Acupuncture and moxibustion has been recorded in Lingshu official acupuncture[10]: “short stab, stabbing bone arthralgia, slightly shaking and deep to the needle bone”. In recent years, the non drug treatment of knee joint protection has received extensive attention all over the world and achieved unprecedented development. In the clinical diagnosis and treatment guide of orthopedics and traumatology of Traditional Chinese Medicine, acupuncture and moxibustion, as the first choice of non drug therapy, has a significant effect on improving the function of knee joint[11-12]. At present, acupuncture and moxibustion is commonly used in clinical treatment of KOA, which is characterized by simple operation, significant curative effect, safety and reliability, and many acupuncture methods. Acupuncture and moxibustion methods include conventional acupuncture, moxibustion, warm acupuncture, electroacupuncture and so on.

(1) Ordinary acupuncture

The 2012 edition of the American Academy of Rheumatology guidelines[13] clearly states that acupuncture is recommended when drug treatment is ineffective. Ordinary acupuncture therapy is widely used in clinical practice. Data analysis shows that[14], the acupoints most frequently used around the knee joint can be as high as 75.7%, of which internal and external knee eyes, yin and Yang Lingquan, blood sea, Zusanli and Liangqiu are the top priorities, providing priority value for clinical treatment of the disease. Filiform needling combined with acupoint selection along meridians and local acupoints, combined with pre and post acupoint matching, son and mother reinforcing diarrhea and corresponding operation techniques, has a good effect on the improvement of patients’ symptoms in all aspects. Tu Jianfeng[15] and others randomly divided 42 patients with koa into sham acupuncture group and acupuncture group to observe the effect of acupuncture on knee osteoarthritis. In the sham acupuncture group, non meridian non acupoint shallow acupuncture was used; In the acupuncture group, routine acupuncture was performed on the inner and outer knee eyes, Zusanli, yinlingquan, heding and Xuehai. The needle retention time of the two groups was 30 minutes, treated three times a week for a total of 8 weeks, and the scores of osteoarthritis and knee injury of the two groups were recorded. The results showed that the scores of daily activities, pain, quality of life and sports and entertainment functions of the two groups were higher than those before treatment, indicating the effectiveness of acupuncture in the treatment of knee osteoarthritis.

(2) Electroacupuncture

Electroacupuncture therapy combines two modes of action, acupuncture and electrical stimulation, and a certain frequency of current is transmitted to the body through the needle body. Studies have shown that electroacupuncture is superior to oral drugs in alleviating pain symptoms and skeletal muscle function in patients with koa[16]. Studies have also proved that[17], electroacupuncture can effectively improve the clinical symptoms of knee swelling, pain, dysfunction and so on in patients with KOA. Electroacupuncture can not only use acupuncture to accelerate human blood circulation to treat diseases; And it can stimulate the patient’s brain and relieve pain[18]. Cao Hongbo et al.[19] randomly divided 120 patients with koa into observation group and control group, with 60 cases in each group. The control group was treated with glucosamine sulfate capsule and functional training, and the observation group was treated with electroacupuncture on this basis. At the end of treatment, the VAS score, Lysholm score, Rom score, WOMAC score and treatment effect of the two groups were compared. The results showed that the total effective rate of the observation group was significantly better than that of the control group.

(3) Warm acupuncture

Warm acupuncture and moxibustion is the product of the combination of moxibustion and acupuncture. Appropriate moxibustion is placed at the end of the needle handle to achieve the purpose of synergistic treatment of diseases by acupuncture effect and warm heat effect of moxibustion. Acupuncture can relax local stiff muscles and promote local and systemic blood circulation, while moxibustion can warm the kidney and help Yang, warm meridians and dredge collaterals. Studies have shown that the amount of moxibustion and skin temperature are important factors affecting the efficacy of warm acupuncture in the treatment of KOA. When the skin temperature is 43 °C ~ 45 °C, the effective rate of pain relief is the highest[20]. The heat of moxibustion can promote the flow of Qi and blood in the meridians and improve the arthralgia caused by wind cold and dampness evil blocking the meridians.

(4) Floating needle

Floating needle therapy was invented by Professor Fu Zhonghua in 1996 and is widely used in the treatment of KOA. Floating needle is a kind of acupuncture therapy, which is easy to operate. It uses a disposable floating needle to sweep and disperse the superficial fascia in a certain area. The principle of action uses bioelectric and electrochemical reactions to eliminate muscle tension or contractile nodules in muscle, so as to achieve the purpose of treating diseases. “Su Wen” contains: “all the twelve meridians have the same part of the skin”. The action part of the floating needle is under the
skin. By stimulating the subcutaneous tissue, the Qi and blood of the whole body are smooth, so as to achieve the effect of general principles and no pain. The superficial fascia is its action site, and there is no nerve endings distributed in this site, so the patient has less pain and is easy to accept[21-22]. Huang Zhibang et al.[23] randomly divided 100 patients with koa into two groups, 50 in the observation group and 50 in the control group. The two groups were treated with floating needle and electroacupuncture respectively. After treatment, IL-6 and TNF were compared between the two groups- α, IL-1 β. No level, lesqueens mg and VAS scores were used to evaluate the clinical efficacy. The results showed that the improvement of floating needle group was better than that of electroacupuncture group.

(5) Subcutaneous indwelling needle therapy

On the basis of traditional acupuncture and moxibustion, subcutaneous indwelling needle therapy combines skin shallow needling with traditional acupuncture and moxibustion syndrome differentiation and acupoint selection along the meridians, and puts forward painless subcutaneous indwelling needle therapy. This therapy was created in the 1990s by Professor Wang Rongbin after widely learning from and drawing on the advantages of many modern subcutaneous shallow needling techniques. It integrates the strengths of hundreds of families on the basis of traditional acupuncture shallow needling therapy and modern wrist ankle acupuncture, floating needle and other shallow needling therapies. A new type of acupuncture treatment technology of extending subcutaneous flat needling and short-term indwelling is implemented on the selected treatment points on the body surface with a special needle. Through the indwelling of the needle, this technology produces continuous benign stimulation and reaches the focus directly. It can dredge the meridians and balance yin and Yang, and make the machine change from pathological state to normal physiological state[24].

(6) Massage therapy

Massage therapy is one of the common and effective methods for the treatment of KOA in clinic. Studies have shown that massage can release soft tissue adhesion, relieve muscle spasm, promote blood circulation around joints and promote soft tissue repair. Massage can also correct the tendon groove and bone dislocation through the principle of mechanical action, reduce the intraosseous pressure, improve the microcirculation around the knee joint, improve the muscle strength, improve the degree of joint lubrication, and strengthen the supply capacity of cartilage nutrition, so as to achieve the effect of analgesia and spasmolysis[25-27].

2. Results

At present, people are more and more widely recognized and accepted the efficacy of Traditional Chinese Medicine in the treatment of KOA. Traditional Chinese Medicine therapy has the advantages of green, safe, excellent effect, simple operation and less adverse reactions. But at the same time, there are also some deficiencies in Traditional Chinese Medicine therapy, because Traditional Chinese Medicine needs syndrome differentiation and treatment, according to individual conditions, the curative effect is closely related to the doctor’s personal clinical experience. Therefore, we need to constantly explore a set of standard treatment system, find new treatment schemes and summarize experience in order to give better play to the advantages of Traditional Chinese Medicine.

3. Conclusion

Knee osteoarthritis is a common clinical disease. We should correctly judge the risk factors, clarify its anatomical structure, and carefully choose the appropriate treatment. In addition, the pathogenesis and etiology of knee osteoarthritis need more exploration and theoretical support, a more comprehensive understanding of the development of the disease, and give comprehensive, stepped and personalized treatment methods to alleviate the pain, consolidate the curative effect and improve the quality of life of patients.

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References


