

Comparative analysis of the therapeutic effect of traditional chinese medicine and western medicine on ROU

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Abstract. The prevalence of recurrent oral ulcer is as high as 50%. It is generally more prevalent in women than in men, and it typically occurs between the ages of 10 and 30. Surveys indicate that at least 10% to 25% of people have experienced this disease. This disease is characterized by cyclical, recurrent, self-limited symptoms of burning pain. Currently, there is no specific drug treatment available for recurrent oral ulcers, making it a major challenge in the academic field. This paper examines the efficacy of different medications in treating recurrent oral ulcers through literature review, data extraction, and quality evaluation. The study concludes that the most effective treatment approach is a combination of Chinese and Western medicine. The combination of Chinese and western medicine drugs has shown significant effects in reducing the recurrence rate of the disease, as well as improving oral flora and other aspects. Furthermore, the therapeutic effect of integrated Chinese and western medicine is considered to be superior.

Keywords: ROU/RAU, drug therapy, integrated medicine of Chinese and western medicine, occurrence mechanism, therapeutic effect.

1. Introduction

Recurrent oral ulcer (ROU), also known as re-current aphthous ulcer (RAU) or recurrent aphthous stomatitis, is one of the most common types of ulcerative diseases of the oral mucosa. Most lesions are located at the lip buccolingual margin, and may occur in all parts of the oral mucosa, but it is rare in the keratinized attached gingiva and hard palate. The disease is characterized by periodic recurrent self-limiting, marked ulcer-burning pain and can occur at any age. Clinically, the number, degree, area size, manifestation, and occurrence site of ROU are different; the severity, frequency and duration of the disease are also differ. The course of the disease is self-limited with an attack lasts 7-10 days on average, and the recurrence rate is about 20%, ranking first in oral mucosal diseases [1].

ROU typically presents as a recurring round or oval ulcer with the following clinical characteristics: the ulcer surface is covered by a yellow false film, surrounded by a red halo, and has a central depression at the lesion site. The pain is very pronounced, often described as "yellow, red, concave, pain". According to the attack cycle, ulcers can be divided into attack period, healing period, an intermittent period, and they possess the characteristics of self-healing without treatment. According to clinical characteristics, it is often divided into 4 types: light, heavy, herpetic, and complex. Among them, the number of light ulcers is not more than 10, and take 10-14 days to heal. However, a few patients will experience recurrent episodes with prolonged recurrence. Severe ROU, also known as peri glandular

aphthous ulcer, typically occurs in adolescence and mainly affects the mouth. The diameter of the ulcer is greater than 10mm, and it can last for 1 or 2 months or even longer. Herpes, also known as stomatitis aphthous ulcer, mostly in adult women, about 2 ~ 5mm in diameter. The number of ulcers can reach dozens and may be accompanied by headache, low fever and other symptoms. The complex type, also known as the severe type, is characterized by multiple ulcers. that are prolonged and persistent causing long-term pain.

At present, ROU occurs more frequently, but the pathogenesis remains unclear in the academic field. As a result, there is no specific drug available for treatment. Various hospitals through clinical investigation experiment have conducted clinical research experiments to study different effects of Western medicine, Chinese medicine and the combined effects of integrated medicine in the treatment of oral ulcers. The Third People's Hospital of Puyang City conducted a study on the use of traditional Chinese medicine gargle combined with Kangfuxin solution, and the study found that the therapeutic effect was better than superior to that of Kangfuxin solution alone. The Changting Hospital of Traditional Chinese Medicine of Longyan City, Fujian Province studied the use of vitamin C plus gentamicin sulfate, and the result showed that it was superior to vitamin B plus watermelon cream spray on various indexes. The Central Hospital of Qianjiang City, Hubei Province studied the use of Shuanghuanglian oral liquid combined with ranitidine hydrochloride capsule, and found that the clinical symptoms were significantly better than that of ranitidine hydrochloride capsule only. This paper will explore the therapeutic effect of traditional Chinese medicine, Western medicine and integrated Chinese and Western medicine on ROU through the research method of literature review, which will provide more effective drug treatment for patients with ROU, ultimately reducing their pain duration and the risk of recurrence.

2. Pathogenesis of ROU

ROU is an inflammatory disease caused by the combination of a variety of pathogenic factors, mainly related to genetic, bacterial and immune factors. The possible mechanism is attributed to individual genetic susceptibility and microbial imbalance activating the body's abnormal immune response, resulting in excessive destruction of oral mucosal epithelium, leading to ulcerative damage. However, the specific pathogenesis remains unclear. At present, the conventional treatment methods used in clinical practice are mainly symptomatic treatment to reduce the clinical symptoms of patients, but the efficacy varies from person to person. Therefore, clinicians should take full account of the possible factors of ROU occurrence, and carry out preventive treatment, blocking treatment, early diagnosis and treatment of related systemic diseases. With the continuous deepening of ROU research, it is expected that there will be more clear evidence to guide the clinical treatment of RAS, and bring good news to patients [2].

3. Clinical Trials of Drug Treatment for ROU

3.1. Application Effect of Proprietary Chinese Medicine

The First Clinical College of Shandong University of Chinese Medicine has discovered in clinical treatment that the combination of linear moxibustion and traditional Chinese medicine during the treatment process of ROU can significantly reduce the healing time of ulcer surfaces, alleviate patients' pain symptoms, and decrease the need for internal medication intake. The operation of thread moxibustion is simple and economical, providing significant advantages in the treatment of ROU. Thread moxibustion simultaneously functions as a fire needle and conducts heat. It is simple to operate, easy to master, suitable for primary medical treatment, and easily promotable. Additionally, it has non-toxic side effects and provides economic benefits. The external application of linear moxibustion can locally remove dampness and turbidness, promote blood circulation and relieve pain. At the same time, it is combined with the internal administration of traditional Chinese medicine for syndrome differentiation and treatment, reflecting the treatment concept of external and internal approaches, addressing both symptoms and root causes [3].

A total of 80 patients with ROU were divided into a control group and an observation group by drawing lots in the Nancun Community Health Service Center of Panyu District, Guangzhou, with 40 cases in each group. The control group received treatment with conventional Western medicine, while the observation group was administered Qingre Chuang decoction. Before and after treatment, the medical syndrome score (including ulceration facial volume, redness and swelling, pain and pain duration), and factor levels of inflammation (tumor-necrosis factor- α , interleukin-2, interleukin-6) were observed and recorded for both groups. Efficacy indicators such as pain relief time, food unaffected time, and healing time were recorded and compared post-treatment. Additionally, adverse reactions including diarrhea/abdominal pain, dizziness/headache, and rash were also assessed. Before treatment, there was no statistical difference between the two groups of patients as evaluated by TCM syndrome score. However, after the treatment, it was observed that both methods had certain effects. Specifically, the group treated by Qingre Chuang decoction had a better effect than the group treated by conventional Western medicine. There were significant differences in TCM syndrome scores, inflammatory factor levels, and incidence of adverse reactions. In summary, the treatment of ROU by Qingre Chuang Decoction can alleviate uncomfortable symptoms, and improve clinical efficacy. Additionally, the risk of adverse reactions is low, making it a promising option for promotion [4].

In the Third People's Hospital of Puyang City, 76 patients with ROU were divided into an observation group and a control group according to the random number table method, with 38 cases in each group, the control group was given Kangfuxin liquid, and the observation group was given self-made Chinese medicine gargles on the basis of the control group. The effects of the two groups were compared, as well as the degree of pain, inflammatory factors, and immunological indicators of oral ulcers before and after intervention. Before treatment, there was no statistical difference in VAS scores between the two groups. However, after the treatment, it was found that the VAS score of the observation group was significantly lower than that of the control group, indicating that both methods had certain effects. Specifically, the group treated with self-made Chinese medicine gargling solution had better efficacy than the group treated with conventional Kangfuxin solution only. There were significant differences in pain degree, inflammatory factors and immunological indexes. In this study, the self-prepared mouthwash can not only be anti-inflammatory but also improve immunity. It effectively promotes mucosal repair at ulcer sites, and when combined with Kangfuxin solution, it can prevent ulcer recurrence and improve the curative effect. In summary, traditional Chinese medicine mouthwash combined with Kangfuxin solution can relieve pain, reduce inflammatory factors, improve immune function, enhance the effect, and enable patients to obtain better rehabilitation [5].

3.2. *Application Effect of Western Medicine*

Changting County Hospital of Traditional Chinese Medicine, Longyan City, Fujian Province, conducted a study on 100 patients with ROU. The randomized number table method was used to divide the patients into a study group and a control group. The patients in the study group were treated with vitamin C plus gentamicin sulfate, and the patients in the control group were treated with vitamin B and watermelon cream spray. The pain score, eating influence score and oral ulcer area of the two groups were compared at different time periods before and after treatment, and the therapeutic efficacy was evaluated, and the adverse reactions after medication were statistically analyzed. Within 3 days after treatment, pain, influence degree of eating and area of oral ulcers in both groups were found to be decreased. However, the study group, which received simultaneous treatment with vitamin C and gentamicin sulfate, demonstrated superior improvement in all indicators compared to the control group. Additionally, the study group also exhibited a lower rate of adverse reactions than the control group. In summary, in the patients with ROU, the implementation of vitamin C combined with gentamicin sulfate treatment was better than that of the control group. It can significantly reduce the pain of ulcers and the degree of influence of eating, and reduce the area of oral ulcers. If the treatment effect is significantly improved, and the incidence of discomfort after medication is low, the effect is ideal. [6]

Pakfetrat et al. treated 34 patients with ROU in a double-blind randomized clinical trial with either low-dose prednisolone (5 mg/day) or colchicine (0.5 mg/day). All ROU patients took the medication for

3 months and were evaluated every two weeks. They found that both colchicine and prednisolone treatments significantly reduced the signs and symptoms of ROU. However, colchicine (52.9%) had significantly more side effects than prednisolone (11.8%). They concluded that 5 mg/day of prednisolone appears to be a better option for reducing signs and symptoms of ROU [7].

Valerie G. A. Suter et al. conducted laser therapy in 11 studies, including 10 randomized controlled trials (RCTs) and 1 non-randomized controlled trial. The study participants in the laser group received treatment, while those in the control group were given either a placebo, no treatment, or topical corticosteroids. Pain relief, wound healing duration, and attack frequency were observed. Five of the six studies found significant pain relief immediately after treatment. Seven studies recorded pain relief in the days following treatment. The results show that the application of lasers (COlaser, Nd: YAG lasers, and diode lasers) is an option for relieving symptoms and promoting wound healing in patients with ROU with a low risk of side effects. Different laser applications (ablation or photobiological modulation) showed favorable results compared to placebo, other therapies or no treatment. However, due to the wide variation in the types of lasers used and laser Settings, no laser application can currently be considered a standard laser application for the treatment of ROU [8].

3.3. Application Effects of Integrated Chinese and Western Medicine

Xianning Central Hospital conducted a study on 92 patients with ROU. The patients were randomly divided into an external group and an external group, with 46 cases in each group. The external group was treated with recombinant bovine basic fibroblast growth factor, and the external group was treated with Kangfuxin solution on the basis of the external group. Clinical symptoms (including area and a number of ulcers, exudation, congestion, and pain and burning sensation), inflammatory indicators and immune indicators of the two groups were observed and recorded respectively. Before treatment, there was no statistically significant difference in the comparison scores between the two groups. While, after the treatment, it was found that each index of the internal and external groups was lower than that of the external group, indicating that the group treated with Kangfuxin solution had better efficacy than that treated with conventional recombinant bovine basic fibroblast growth factor alone, and there were significant differences in clinical symptoms, inflammatory indicators and immune indicators. To sum up, during the usage process, it is recommended to have the patient gargle with the rehabilitation solution first in order to ensure full contact of the medication with the wound. Subsequently, swallowing the medication will allow for continuous efficacy. Kangfuxin solution combined with recombinant bovine basic fibroblast growth factor has a good effect on alleviating clinical symptoms, reducing inflammation and enhancing immune function in the treatment of ROU [9].

The Department of Stomatology of the First Affiliated Hospital of Nanyang City conducted a study on 60 patients with mild ROU. The patients were divided into a conventional treatment group and the Kouyanqing group by random number table method, with 30 cases in each group. The patients in the conventional treatment group were treated with Kangfuxin liquid with gargle, and the patients in the Kouyanqing group were treated orally with Kouyanqing granules on the basis of the conventional treatment group. After treatment, the effective rate of patients in the Guyanqing group was higher than that in the conventional treatment group, the wound healing time was significantly shorter, the immune function was significantly higher than that in the conventional treatment group. The inflammation level was also significantly decreased, and the total recurrence rate in the Guyanqing group was significantly lower than that in the conventional treatment group. To sum up, Kouyanqing Granule combined with Kangfuxin Liquid has a good clinical effect in the treatment of ROU, which can significantly improve clinical symptoms and reduce the recurrence rate of patients. Its mechanism of action is related to inhibiting serum inflammatory response and regulating the body's immune function, and there are no obvious adverse reactions, which is suitable for clinical promotion [10].

In Qianjiang Central Hospital of Hubei Province, Shuanghuanglian oral liquid combined with ranitidine hydrochloride capsule was used in the clinical treatment of ROU and a comparative study was conducted. 112 patients with recurrent oral ulcers were selected and divided into an observation group and a control group by random number table method, with 56 cases in each group. The control group

was treated with ranitidine hydrochloride capsule for external use, and the observation group was treated with Shuanghuanglian oral liquid for external use on the basis of the control group. The ulcer surface healing of the two groups was compared 2 weeks later, and the recurrence was compared after 6 months of follow-up. Before treatment, there was no statistical difference in clinical scores between the two groups. After treatment, both methods had certain effects, but the clinical symptoms of the observation group were significantly better than those of the control group, and the inflammatory indicators, adverse reactions and recurrence after treatment were all lower than those of the control group. In summary, Shuanghuanglian oral liquid combined with ranitidine hydrochloride capsule in the treatment of ROU can effectively promote the healing of ulcer surface, alleviate clinical symptoms, reduce pain degree and recurrence rate, improve quality of life, and demonstrates high safety [11].

Nanjing Pukou District Hospital of Traditional Chinese Medicine used Kangfuxin solution combined with triamcinolone to treat ROU. A total of 170 patients with ROU were selected and divided into control groups and observation groups by random number table method, with 85 cases in each group. The control group was treated with triamcinolone acetate cream, and the observation group was treated with Kangfuxin solution on the basis of the control group. After 7 days, the clinical efficacy, the remission time of clinical symptoms, the level of serum inflammatory factors and the content of oral flora before and after treatment were compared between the two groups. Before treatment, there was no statistical difference between the two groups of patients by comparing the general data, and after treatment, both methods had certain effects. Specifically, the treatment group combined with Kangfuxin solution had a better effect than the control group, with significant differences in clinical efficacy, clinical symptoms, inflammatory factors and oral flora. To sum up, Kangfuxin solution combined with triamcinolone the treatment of ROU can promote the improvement of clinical symptoms of patients, alleviate the inflammatory response of patients, and help maintain the balance of oral flora, with significant efficacy and good safety. However, large sample size studies are still needed in the future to verify the conclusions of this study [12].

4. Conclusions

The pathogenesis of ROU is relatively complex. Clinical treatment aims to promote the healing of local oral ulcer wounds and relieve pain, with the treatment general principle being to administer appropriate medication. On this basis, the main therapeutic goals are to reduce the number of recurrences, relieve patients' pain and shorten the treatment time by regulating immunity and improving other symptoms. Through the summary and analysis of the literature, it can be found that traditional Chinese medicine, Western medicine and integrated Chinese and western medicine can accelerate the wound healing of patients with ROU and alleviate the pain of ulcers. However, only the integration of Chinese and Western medicine can effectively reduce the recurrence rate of the disease and improve the oral flora. In terms of long-term efficacy, integrated Chinese and Western medicine has the best treatment effect. However, this thesis cannot be proved empirically, which can be supplemented by large-scale clinical trials in the future. At present, there is no comparative experiment of different drugs on the market, and it is impossible to know which drug has the best effect on the healing of ROU wounds and provides the greatest relief from ulcer pain. Future studies should pay more attention to comparing the clinical effects of various drugs in treatment.

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