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Research Progress of Traditional Chinese Medicine on Diarrhea-predominant Irritable Bowel Syndrome

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Abstract: ***Irritable bowel syndrome (IBS) is a common functional disorder of the digestive system, characterized by recurrent abdominal pain and bloating accompanied by changes in stool consistency and bowel habits. The symptoms often recur or persist and are difficult to resolve. In clinical practice, diarrhea-predominant irritable bowel syndrome (IBS-D) is the most common subtype. This article mainly reviews internal and external treatment methods of traditional Chinese medicine for this disease, summarizes their advantages and disadvantages, and aims to provide more effective therapeutic strategies for clinical practice.***

Keywords: Diarrhea-predominant irritable bowel syndrome, Internal and external treatment of traditional Chinese medicine.

1. Introduction

Diarrhea-predominant irritable bowel syndrome (IBS-D) is a common and frequently occurring disease in gastroenterology, with high prevalence and recurrence rates, a long disease course, and severely impaired quality of life for patients. Currently, the specific pathogenesis of IBS-D has not been fully elucidated. Given the limitations of current Western medical treatments, traditional Chinese medicine has demonstrated unique advantages in treating IBS-D. This article will focus on introducing combined internal and external treatment methods of traditional Chinese medicine, including but not limited to oral medications and external therapies (such as acupoint application), aiming to provide clinicians with more comprehensive and effective therapeutic strategies, help improve patients' clinical symptoms, reduce recurrence rates, and enhance quality of life.

2. Traditional Chinese Medicine Understanding of IBS-D

In traditional Chinese medicine, there is no disease name exactly corresponding to diarrhea-predominant irritable bowel syndrome. This condition can be classified under categories such as "diarrhea" (xie xie), "undigested food diarrhea" (sun xie), "profuse watery diarrhea" (dong xie), "abdominal pain" (fu tong), and "depression pattern" (yu zheng). The Suwen (Plain Questions) attributes its location to the spleen and stomach, stating: "When deficient, there is abdominal fullness and borborygmus, undigested food diarrhea with incomplete digestion." Zhang Jingyue of the Ming Dynasty further proposed that diarrhea is related to dysuria, suggesting that when water and grains are properly separated, diarrhea will naturally cease. The Expert Consensus on TCM Diagnosis and Treatment of Irritable Bowel Syndrome [1] points out that this disease involves the liver, spleen (stomach), and kidney, with dampness as the central pathogenic factor. Liver depression and spleen deficiency constitute the main pathogenesis, among which spleen-stomach weakness with failure of normal dispersion and spleen-kidney yang deficiency are key factors. The pathogenesis undergoes dynamic changes: in the early stage, liver qi stagnation transversely invades the spleen, followed by spleen-stomach weakness with endogenous dampness, and over time leads to spleen-kidney yang deficiency with mixed deficiency and excess manifestations. Scholars such as Yao Naili [2] emphasize the importance of the strength or weakness of the spleen and stomach, protecting and consolidating them, and regulating the ascending and descending of qi movement. Wang Yong [3] believes that the onset of irritable bowel syndrome is related to deficiency of the spleen and kidney as well as liver depression and qi stagnation, and he created Gu Chang Wan (Intestine-Solidifying Pill) which regulates the three viscera, achieving good clinical efficacy. Liu Qiquan [4] summarized that this disease is closely related to the liver and spleen, proposing harmonizing the liver and spleen as a treatment method, and achieved significant clinical results. Scholars such as Lv Lin [5] further refined from clinical practice the view that the root lies in the spleen and stomach while the branch lies in liver depression. Since ancient times, many medical experts have held different views on the pathogenesis of irritable bowel syndrome (IBS), but all emphasize strengthening the spleen and harmonizing the stomach, and regulating qi movement. In summary, the TCM pathogenesis of IBS can be generalized as follows: weakened spleen function leads to abnormal ascending and descending of qi movement, affecting the normal conduction function of the intestines, ultimately resulting in disordered separation of clear and turbid substances. This theory highlights the core role of spleen deficiency and qi movement disharmony in the pathogenesis of IBS, providing a theoretical basis for TCM treatment of IBS.

3. TCM Treatment of IBS-D

The Expert Consensus on TCM Diagnosis and Treatment of Irritable Bowel Syndrome (2017) classifies IBS-D into five syndrome types and provides corresponding formula

treatments, specifically: Spleen deficiency with dampness predominance type treated with Shen Ling Bai Zhu San; Spleen-kidney yang deficiency type treated with Fu Zi Li Zhong Tang; Liver depression and spleen deficiency type treated with Tong Xie Yao Fang; Spleen-stomach damp-heat type treated with Ge Gen Huang Qin Huang Lian Tang; and Mixed cold-heat type treated with Wu Mei Wan [6].

3.1.1 Spleen Deficiency with Dampness Predominance Type

Wang Jingyu et al. [7] divided IBS-D patients with spleen deficiency and dampness predominance syndrome into a treatment group receiving oral Shen Ling Bai Zhu San and a control group receiving pure Western medicine, with 40 patients in each group. Through observation after treatment, it was found that the total effective rate in the treatment group was 95.00%, while that in the control group was 75.00%, approximately 20% higher in the treatment group than in the control group. Moreover, the scores on the symptom severity scale and individual symptom scores of patients treated with oral Shen Ling Bai Zhu San were lower than those of the Western medicine group. Thus, it was concluded that using modified Shen Ling Bai Zhu San orally yields better effects for treating patients with spleen deficiency and dampness predominance type. Zheng Baonai et al. [8] found through research that the serum levels of intestinal barrier function indicators D-LA and DAO in IBS-D patients were higher than those in healthy individuals. After treatment, the serum DAO and D-LA levels in IBS-D patients taking Shen Ling Bai Zhu San showed significant improvement compared to the Western medicine group. The improvement in symptoms such as epigastric fullness, stool consistency, poor appetite, frequency of bowel movements, fatigue and lassitude in patients treated with Chinese medicine was significantly better than that in the control group receiving oral pinaverium bromide, indicating that Shen Ling Bai Zhu San can better repair intestinal barrier function and improve the clinical symptoms of IBS-D patients.

3.1.2 Spleen-Kidney Yang Deficiency Type

Zhang Mingxia [9] conducted a grouped study on 120 patients with diarrhea-predominant irritable bowel syndrome. The control group received oral pinaverium bromide, while the treatment group received oral Fu Zi Li Zhong Tang, with 60 cases in each group. After treatment, the total effective rate of the treatment group was higher than that of the control group ($P < 0.05$). Following treatment, both groups showed significantly higher IBS quality of life scores and SF-36 quality of life scores compared to pre-treatment levels ($P < 0.05$). Furthermore, the treatment group (treated with Fu Zi Li Zhong Tang) had significantly higher post-treatment IBS quality of life scores and SF-36 quality of life scores than the control group (treated with pinaverium bromide) ($P < 0.05$). This indicates that Fu Zi Li Zhong Tang is superior to pinaverium bromide in treating diarrhea-predominant irritable bowel syndrome, supporting the conclusion that Fu Zi Li Zhong Tang, as an effective traditional Chinese medicine treatment, has significant advantages in improving quality of life and inflammatory responses in patients with IBS-D. Guo Xingfei et al. [10] randomly divided 86 IBS-D patients with spleen-kidney yang deficiency type into two groups. The control group was treated with oral pinaverium bromide tablets, while the observation group was treated with oral Fu Zi Li Zhong Tang. The results showed that the total effective rate of the observation group was significantly better than that of the control group ($P < 0.05$), indicating that Fu Zi Li Zhong Tang has better therapeutic efficacy for IBS-D patients.

3.1.3 Liver Depression and Spleen Deficiency Type

Zhang Mingyu et al. [11] observed the therapeutic effect of Li Chang Yin on IBS-D patients with liver depression and spleen deficiency type, and found that Li Chang Yin could improve patients' abdominal pain, stool consistency, loose stools, etc., with efficacy superior to Western medicine, and could also improve colonic peristaltic function. Si Yingjie et al. [12] divided 120 IBS-D patients with liver depression and spleen deficiency type into groups. After 8 weeks of treatment, the TCM syndrome effective rate of the experimental group (Shu Chang Fang) reached 94.87%, which was superior to 84.62% in the control group and 34.38% in the placebo group. The experimental group showed better long-term efficacy, with significant improvement in TCM symptom scores. Analysis of the results indicated that Shu Chang Fang, modified on the basis of Tong Xie Yao Fang, can effectively improve the clinical symptoms of IBS-D patients. Chen Jingye et al. [13] selected 108 IBS-D patients with liver depression and spleen deficiency type and randomly divided them into a control group of 54 cases and an observation group of 54 cases, each treated for 4 weeks. It was found that the total effective rate of the observation group reached 96.30%, significantly higher than that of the control group. After treatment, the improvement of symptoms such as abdominal pain, abdominal distension, stool consistency, and frequency of bowel movements in the observation group was significantly better than that in the control group, indicating that taking Tong Xie Yao Fang on the basis of conventional treatment can effectively relieve symptoms without increasing the risk of adverse reactions, with high safety.

3.1.4 Spleen-Stomach Damp-Heat Type

Situ Chunyu et al. [14] selected 105 IBS-D patients with spleen-stomach damp-heat type for random grouping. The study group received oral Ge Gen Qin Lian Tang, while the control group received oral Bifidobacterium triple viable capsules, each treated for 4 weeks. The results showed that the total effective rate of the study group was significantly superior to that of the control group ($P < 0.05$), indicating that Ge Gen Qin Lian Tang can significantly improve treatment efficacy, alleviate symptoms such as diarrhea and abdominal distension, and enhance patients' quality of life. Shi Wenqi [15] compared the experimental group using Shao Yao Tang with the control group using Bifidobacterium triple viable capsules, and found that Shao Yao Tang had better clinical therapeutic effects on diarrhea-predominant irritable bowel syndrome (spleen-stomach damp-heat type), could significantly relieve patients' symptoms, and was safe with no side effects. Wang Yajun [16] selected 64 subjects and divided them into a treatment group and a control group. The treatment group received oral Chinese medicine Qu Shi Dao Zhi Fang, while the control group received oral Western medicine trimebutine maleate tablets. After treatment, analysis of various patient parameters showed that the clinical effect of Qu Shi Dao Zhi Fang was significantly superior to

trimebutine maleate tablets, could markedly improve patients' conditions, and patients treated with Qu Shi Dao Zhi Fang had a low long-term recurrence rate.

3.1.5 Mixed Cold-Heat Type

A meta-analysis [17] showed that Wu Mei Wan alleviates prolonged diarrhea and dysentery symptoms in patients with mixed cold-heat type through its anti-diarrheal and astringent intestinal effects, improves abdominal discomfort, and increases the overall short-term clinical efficacy rate. Luo Peiyi [18] selected 72 patients with diarrhea-predominant irritable bowel syndrome (mixed cold-heat type). The control group was given oral compound glutamine enteric-coated capsules and compound Lactobacillus acidophilus tablets, while the treatment group additionally received Chai Wu Tang. After treatment, it was shown that Chai Wu Tang could effectively improve TCM syndromes in patients with mixed cold-heat type, with good long-term efficacy and high safety. Ma Yidan [19] selected 60 patients with diarrhea-predominant irritable bowel syndrome of mixed cold-heat type for study, randomly dividing them into a treatment group and a control group. The treatment group was given modified Wu Mei Wan, while the control group was given the Chinese patent medicine Gu Chang Zhi Xie Wan. Comparing clinical efficacy, the total effective rate of the Wu Mei Wan treatment group was 96.7%, superior to the 93.3% of the Gu Chang Zhi Xie Wan group, indicating better improvement of clinical symptoms in the treatment group, with superior effects on symptoms such as abdominal distension, borborygmus, bitter taste in the mouth, and aversion to cold. It can greatly alleviate the condition, soothe patients' emotions, and is safe with no side effects.

4. External Therapy of Traditional Chinese Medicine

External therapies of traditional Chinese medicine mainly include acupuncture, acupoint application, moxibustion, ear acupressure with seeds, and fire dragon cupping therapy, among others. These methods are simple and effective, and their applications are reviewed separately below. Zhan Daowei et al. [20] randomly divided 66 IBS-D patients into an acupuncture group and a medication group. The acupuncture group selected acupoints such as Baihui (GV20), Yintang (EX-HN3), and Taichong (LR3), while the medication group received conventional drug treatment. Both regimens were treated for 4 weeks. The acupuncture group showed greater improvement in symptoms compared to the medication group, indicating that acupuncture has significant efficacy in treating IBS-D, can effectively relieve abdominal pain, improve patients' quality of life, and regulate negative emotions and mood disorders such as anxiety. Huang Bei [21] selected 64 patients with diarrhea-predominant irritable bowel syndrome as study subjects, randomly divided into a control group and an observation group, with 32 cases in each group. The control group received conventional Western medicine treatment, while the observation group received additional acupoint application therapy on top of conventional treatment. By analyzing the therapeutic effects of both groups, it was found that the total effective rate of the observation group was 93.75%, significantly higher than that of the control group. The research results showed that acupoint application therapy has significant efficacy in treating IBS-D, improving clinical symptoms such as abdominal distension, abdominal pain, and abnormal defecation. This finding emphasizes the potential value of acupoint application therapy as a non-pharmacological treatment modality in IBS-D management. Such conclusions support the application of acupoint application therapy as an adjunctive treatment for IBS-D patients and provide a basis for further exploration of its mechanisms and optimization of treatment protocols. Professor Suhua Shi [22] creatively proposed using mind-regulating and intestine-soothing moxibustion (Tiao Shen An Chang Jiu) to treat IBS-D. Different from traditional moxibustion, this method combines ginger moxibustion with abdominal moxibustion, using meridian "lines" and local "areas" to replace traditional acupoint "points." This technique delivers strong stimulation, simultaneously regulates the Ren and Du meridians, maximally warms and tonifies spleen-kidney yang qi, and regulates the gastrointestinal tract. Practice has proven this method to be more effective than traditional therapies. Regarding the effect of ear acupressure with seeds combined with modified Xiao Yao San on the intestinal flora of patients with diarrhea-predominant irritable bowel syndrome, Xu Jin et al. [23] selected 150 patients with IBS-D and randomly divided them into a routine group, a Xiao Yao San group, and a combination group, with 50 subjects in each group. Three different treatment regimens were applied: the routine group only received oral trimebutine maleate capsules; the Xiao Yao San group received modified Xiao Yao San in addition to the routine regimen; and the combination group received ear acupressure with seeds in addition to the Xiao Yao San regimen. This design aimed to evaluate the adjunctive therapeutic effects of modified Xiao Yao San and ear acupressure with seeds by comparing the outcomes of different treatment combinations. The disappearance time of clinical symptoms and treatment effects were observed and recorded for the three groups, and changes in intestinal flora and intestinal motor function before and after treatment were statistically analyzed. Results showed that the combination group had significant effects. This combined treatment approach not only improved clinical efficacy but also promoted comprehensive recovery of intestinal health. These conclusions support the value of ear acupressure with seeds as an adjunctive therapy in IBS-D patients, especially when combined with traditional Chinese herbal formulas like Xiao Yao San, further enhancing therapeutic outcomes. Lin Fengyun et al. [24] selected 64 IBS-D patients with spleen-stomach weakness type and randomly divided them into an observation group and a control group, with 32 cases each. The control group received conventional treatment, while the observation group received fire dragon cupping therapy in addition to conventional treatment. Acupoints on the back such as Ganshu (BL18), Pishu (BL20), and Weishu (BL21), and abdominal acupoints such as Zhongwan (CV12), Qihai (CV6), Guanyuan (CV4), and Tianshu (ST25) were selected for manipulation. After 14 days of treatment, clinical efficacy, major symptom TCM syndromes, and adverse reactions were evaluated. It was found that the total effective rate of the observation group was significantly superior to that of the control group, indicating that combining fire dragon cupping therapy with conventional treatment is worthy of promotion.

5. Conclusion

From the above summary, it can be seen that in current TCM research on IBS-D, the pathogenesis of this disease is not yet fully understood. Ongoing studies have revealed that its onset is closely related to multiple factors. Clinically, it is mainly differentiated and treated according to five syndrome types. TCM treatment strategies emphasize addressing the root cause of the disease and combining internal and external therapies, which can significantly improve clinical efficacy. In particular, external therapies are simple, convenient, cost-effective, safe, and reliable, demonstrating great advantages in clinical treatment and being worthy of promotion. However, several major challenges remain. First, there is a lack of unified and widely accepted standards for TCM syndrome differentiation and classification. Second, experimental studies tend to have small sample sizes and single experimental designs, making it impossible to implement strict double-blind trials. Third, most studies focus on short-term effects, with less attention paid to long-term efficacy and recurrence rates. Future research should actively work toward unifying the standards for syndrome differentiation and classification, increase sample sizes, and strengthen long-term follow-up to evaluate the long-term efficacy of TCM treatment for IBS-D.

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