

Research Progress of Traditional Chinese Treatment of Diabetic Diarrhea

Ru Yuan¹, Zhen Feng¹, Defen Wang^{2,*}

¹*Shaanxi University of Chinese Medicine, Xiayang, Shaanxi, 712046, China*

²*Xi'an Hospital of Traditional Chinese Medicine, Xi'an, Shaanxi, 710021, China*

**Corresponding author*

Keywords: Diabetic diarrhea; etiology; traditional Chinese medicine treatment

Abstract: Diabetic diarrhea is one of the chronic complications of diabetes mellitus, which belongs to one kind of gastrointestinal autonomic neuropathy, and can seriously affect the quality of life of patients. In recent years, Traditional Chinese medicine has achieved more satisfactory efficacy in the treatment of diabetic diarrhea. In addition to the treatment of Chinese herbal medicine, acupuncture, acupoint plasters and other Chinese medicine special therapies can significantly improve the clinical symptoms of diabetic diarrhea patients and improve the quality of life. This article mainly summarizes the treatment of Chinese medicine, in order to provide new ideas for the treatment of such diseases.

1. Introduction

In recent years, the incidence of diabetes mellitus has been increasing year by year, and according to the literature review, the incidence of diabetic autonomic neuropathy accounts for 10%-20% of the total incidence of complications ^[1]. Diabetic diarrhea belongs to non-infectious diarrhea, which is a diabetic complication with diarrhea as the main clinical manifestation due to long-term glucose metabolism disorder that impairs the body's immune function and leads to gastrointestinal dysfunction ^[2]. Clinically, it is usually intermittent episodes, brown watery stools, not accompanied by abdominal pain, mostly in the early morning or night episodes. As its pathogenesis is still unclear, western medical treatment mainly consists of controlling blood glucose, improving intestinal spasm, nutritional nerves and symptomatic treatment. Although it can alleviate the symptoms during the attack period, it has the disadvantages of poor long-term efficacy and easy recurrence of symptoms. After reading the literature, it is found that Chinese medicine has achieved more satisfactory efficacy in the treatment of this disease at this stage. In this paper, we will briefly summarize the relevant literature on the treatment of this disease by Chinese medicine.

2. Etiology and pathogenesis

Diabetic diarrhea is a modern medicine disease, although there is no corresponding name in traditional Chinese medicine, according to its symptoms, it can be categorized as "Diabetic" and "diarrhea". The name "diabetes mellitus" was first described in "Suwen *Treatise on strange diseases*" ^[3]. "Synopsis of Golden Chamber" set up a special article to discuss the etiology and

pathogenesis of diabetic, and identified diabetic as a class of disease name ^[4]. Its etiology can be traced back to the "*Inner Canon of Huangdi*" period, which summarizes that it is closely related to the inadequacy of the vegetative system, improper diet, emotional and emotional disorders, inappropriate work and rest, and physical factors. The name of diarrhea was first mentioned in *Taiping Shenghui Fang* ^[5]. In the relevant chapter of *Plain Questions*, it is recorded that: "Excessive damp-pathogen can cause diarrhea to occur." pointing out that spleen deficiency and dampness is the key to the development of diarrhea. The paper on diarrhea in "*Jingyue Quanshu*" mentions that "the origin of diarrhea is the spleen and stomach." It can be seen that diarrhea is mainly caused by dampness, and the key to the production of dampness lies in the function of the spleen and stomach.

For the etiology and mechanism of the disease, many medical doctors have different opinions. Prof. Tong Xiaolin ^[6] believes that dietary disorders, weakness of internal organs and other reasons can lead to the spleen main transportation and ascension of the clear dereliction of duty, the stomach cannot be putrefied to reduce turbidity, elevation disorders and the development of diabetic diarrhea. Professor Shao Jingming ^[7] believes that diabetes mellitus and gastrointestinal dysfunction, mainly due to disease for a long period of time, dual vacuity of qi and yin, the spleen and stomach dysfunction, the transport of essence of water and grain is not as good as, resulting in diarrhea, leading to diarrhea, and the location of the disease mainly involves center burner. Professor Chen Dashun ^[8] believes that the underlying pathology of diabetic diarrhea lies in the malfunctioning of the zang-fu visceral, dysfunction of the corporeal soul gate, mutual combination with evil qi in the body, and lack of circulation between the zang-fu visceral and the corporeal soul gate. Prof. Zhang Yuqin ^[9] believes that the main pathogenesis of diabetic enteropathy is spleen vacuity with damp encumbrance and insufficiency of kidney yang. diabetes for a long time, on the one hand, the spleen qi deficiency, putrefaction and transportation function is weakened, water and dampness accumulation in the gastrointestinal, hair for diarrhea, if the spleen transportation function is reduced, the lack of fluids, can also appear constipation; on the other hand, the kidney is the root of earlier heaven, yin and yang are rooted in each other, insufficiency of kidney yang cannot warm the spleen, it can also appear diarrhea.

In summary, the occurrence of this disease is based on diabetic, disease for a long time, dual vacuity of qi and yin, and other pathogenic factors, ultimately leading to the spleen and stomach physiological function of the serious malfunctioning, The transportation of water and grain essence and micro-organisms is not as good as the transmission and distribution of water and liquid accumulation, which leads to the occurrence of diarrhea.

3. Diagnosis and treatment

Regarding to the therapeutic principle and the syndrome differentiation groups about this disease, various medical practitioners hold their own views based on their many years of clinical experience. Academician Tong Xiaolin ^[10] believes that the key to treatment lies in restoring the qi of the middle jiao and normalizing its elevation function. Therefore, in clinical treatment, it is advocated that the main focus should be acrid opening and bitter discharge and smoothness of qi movement. The common clinical patterns include damp-heat diarrhea, liver qi exploiting the spleen, spleen-stomach vacuity, and pattern of spleen-kidney yang vacuity. They were treated with Gegen Qinlian Decoction, Tongxieyaofang, and Lizhong pill. Professor Zhao Jinxi ^[11] classified diabetic diarrhea into spleen and stomach vacuity, pattern of spleen-kidney yang vacuity, damp-heat obstruction, and liver-spleen disharmony on the basis of the trinity diagnosis and treatment model of "identification of constitution, identification of disease, and identification of evidence". Specifically, It was treated with Seng Ling Bai Zhu San, Lizhong Tang and Si Shen Wan, Gegen Qinlian Decoction, Tongxieyaofang. At the same time, it is emphasized that in actual clinical

practice, the occurrence of this disease is often not a single type of evidence. Therefore, we should be paid to the balance in treatment. Prof. Wang Dong ^[12] proposed the theory that Lesseryang and Taiyin combintain disease is consistent with the pathogenesis of diabetic and diarrhea, and he believed that Chai Hu Gui Zhi Gan Jiang Decoction should be applied in the treatment to conciliate the Shaoyang, and add or subtract according to the evidence. Prof. Fang Zhaohui^[13] advocated that diabetic diarrhea should be divided into three types: damp-heat internalization, spleen deficiency and dampness, and pattern of spleen-kidney yang vacuity, which should be treated with Ge Gen Scutellaria Lian Tang, Shenzhu Tiaopi Granule, and Sishen Pills as the main prescriptions, and with the additions and subtractions according to the symptoms.

4. Treatment methods

4.1 Treatment with single-flavored drugs

According to the relevant literature, the commonly used drugs for the treatment of diabetic diarrhea are tonic drugs, water-inducing and dampness-permeating drugs, and antidiabetic drugs, whose flavors are warm and sweet, and which are attributed to the spleen and stomach channels ^[14]. When treating, tonic drugs should be the mainstay, together with water-inducing and dampness-permeating drugs and antiexpressive drugs. Based on data analysis, the most commonly used drugs for treating diabetic diarrhea are six flavors of Atractylodes , Poris cocos, Dioscorea, Codonopsis, Astragalus, and Coixi seed ^[15].

Based on the theory of traditional Chinese medicine, all of the above six drugs belong to the class of qi supplementing spleen-fortifying medicinal. The basic pathogenesis of diabetic is yin deficiency and internal dryness, and it is easy to damage the qi and yin after a long period of time, so the medicinals used are mainly to boost qi and nourish yin. Similarly, modern pharmacological research has proved that the active ingredients of many Chinese medicines have certain therapeutic effects. Atractylodes has the effect of strengthening the spleen and boost qi, drying dampness and transforming turbidity. Pharmacological studies have shown that the active ingredients such as lactones and polysaccharides in Atractylodes can not only lower blood glucose, but also improve intestinal function and intestinal flora ^[16]; Dioscorea not only has the efficacy of lowering blood glucose, but also regulates the function of the spleen and stomach. Some studies have even shown that dioscorea can inhibit gastric emptying as well as serum amylase secretion in rats and enhance the absorption function of the small intestine ^[17]; Astragalus can replenish the spleen qi and is mostly used to treat diarrhea due to spleen deficiency. Its main active ingredient is astragalus polysaccharide. A large number of studies have proved that polysaccharides can pass through the intestinal mucosa, protect the structural and functional integrity of the intestinal barrier, regulate the composition of intestinal flora, and improve the intestinal flora environment ^[18]. The results of the above studies indicate that many single-flavored herbs not only help to lower glucose, but also improve intestinal disorders and control diabetic diarrhea symptoms.

4.2 Classic formula treatment

It is known from years of clinical experience of medical practitioners that the treatment of diabetic diarrhea with meridian formulae can achieve satisfactory curative effects.

4.2.1 Banxia Xiexin Decotion

Banxia Xiexin Decotion is from Shanghan Lun, which consists of pinellia,coptis, Skullcap, Ginger, jujube, and licorice, and is used in the original classic text for treating glumos with

cold-heat complex pattern. Han Wenbiao et al ^[19] divided 100 patients with diabetic diarrhea into a treatment group and a control group. The treatment group was treated with the addition and subtraction of Banxia Xiexin Decotion, and the control group was treated with Glyburide and Bifidobacterium live capsule. The results found that the total effective rate of the treatment group was much higher than that of the control group, suggesting that Banxia Xiexin Decotion can significantly improve the symptoms of diabetic diarrhea. Lu Shaomin ^[20] believes that diabetic diarrhea patients, the spleen and stomach of moving and transporting are weakened, Non-upbearing of clear, no-downbearing of turbid yin, then lead to diarrhea occurs .This is the same as the theory of action of Banxia Xiexin Decotion, so they use it to treat diabetic diarrhea with cold-heat complex pattern. With the addition of subtractions with the signs.

4.2.2 Fu-zi Lizhong Decotin

Wen Xin ^[21] started from Zheng Shouquan's teacher's thoughts of spleen and stomach and the idea of supporting yang. They believed that the main pathogenesis of diabetic diarrhea was spleen-kidney yang vacuity. Therefore, they selected the treatment of Fu-zi Lizhong Decotin, which consisted of Atractylodes, blast-fried dried ginger, Ginseng, blast-fried aconite, and mix-fired licorice, the whole formula was mainly to warm the spleen and dissipate the cold, and the addition of a large number of blast-fried aconite enhanced the power of warming the kidney yang. Zhang Ning ^[22] selected 80 cases of type 2 diabetic diarrhea (spleen and kidney yang vacuity) patients, randomly divided into the control group and the observation group of 40 cases each, the control group was given bifidobacterium tetragonum live bacteria tablets combined with conventional hypoglycemic, and the observation group orally served with Fu-zi Lizhong Decotin on the basis of the control group, the results suggest that the content of bifidobacteria and lactobacillus in the observation group was higher than that in the control group, and the intestinal colonization and inflammation indicators were significantly lower than those in the control group, which suggests that Fu-zi Lizhong Decotin can improve the environment of intestinal flora and reduce the inflammatory response. In addition, pharmacological studies have demonstrated that Fu-zi Lizhong Decotin can regulate the intestinal microenvironment, reduce inflammation to the gastrointestinal tract stimulation, and alleviate the symptoms of diarrhea ^[23].

4.2.3 Shen Ling Baizhu San

Shen Ling Baizhu San was first appeared in "*Taiping Huimin Heji Jufang*", consists of ginseng, cocos, atractylodes, white lablab, tangerine peel, licorice, amomum, Coix seed, Dioscoreae and Platycodonopsis. It has the effects of strengthening the spleen and stomach, benefiting qi and resolving dampness. Zhang Shijie ^[24] et al. collected 40 cases of diabetic diarrhea patients, 20 cases each in the control group and the observation group, the observation group was treated with Sheng Ling Baizhu San on the conventional treatment, and the control group was treated with the conventional hypoglycemic, and the results suggested that the total effective rate of the observation group was higher, and gastrointestinal hormones in the observation group were significantly lower than those in the control group. This suggests that Shen Ling Baizhu San can improve diabetic diarrhea symptoms and gastrointestinal hormones. Yang Li ^[25] selected 60 cases of diabetic diarrhea (spleen and stomach weakness type) patients, control group and observation group randomly 30 cases each, the control group was given pinaverium Bromide, the observation group in the control group on the basis of Shen Ling Baizhu San, the results suggest that the observation group's total effective rate, immunoglobulin level is higher than that of the control group, and the points of Chinese medicine symptoms, recurrence rate is lower than that of the control group. This suggests that Shen Ling Baizhu San has a certain role in the treatment of diabetic diarrhea.

4.2.4 Gegen Qinlian Decoction

Gegen Qinlian Decoction is composed of Kudzu, Baical Skullcap Root, Coptis, Licorice. Huang Yulong ^[26] et al. randomly selected 120 patients with irritable bowel syndrome (IBS-D) with damp-heat in the spleen and stomach, and randomly divided them into groups: the control group was treated with conventional treatment, and the observation group was treated with the addition of Gegen Qinlian Decoction on top of the conventional treatment. In addition, modern pharmacological studies have shown that Gegen Qinlian Decoction can regulate the intestinal microenvironment, reduce the inflammatory response, and promote the repair of gastric mucosa^[27].

4.2.5 ChaiHu Guizhi GanJiang Decoction

ChaiHu Guizhi GanJiang Decoction is from "*Shanghan Lun*", which was originally designed to treat the Shaoyang syndrome, and the formula consists of Bupleurum, Cassia Twig, Dried Ginger, Trichosanthes root, Skullcap, Oyster Shell, Mix-fired licorice. Professor Wang Dong analyzed the pathogenesis of diabetic and diarrhea from the perspective of Shaoyang incompatibility and Taiyin spleen deficiency, and chose ChaiHu Guizhi GanJiang Decoction for treatment^[28]. Mao Yanhong^[29] included 60 patients with diabetes mellitus with diarrhea symptoms, which were randomly divided into the control group and the treatment group, the control group was given the original hypoglycemic treatment, supplemented with exercise and psychological guidance; the treatment group was treated with ChaiHu Guizhi GanJiang Decoction on the basis of the control group. The results showed that the total effective rate of the treatment group was better than that of the control group, and the FPG, PGB and HBA1c after treatment were better than those before treatment. The study showed that ChaiHu Guizhi GanJiang Decoction had significant clinical efficacy in patients with diabetic diarrhea of cold and heat mismatch type.

4.2.6 Self-designed prescription treatment

The occurrence of diabetic diarrhea is close related to diet, mood, disease duration and many factors, many medical doctors based on the basic mechanism of the disease, synthesize various factors, self-proposed formula to treat the disease. Shen Yongxue^[30] randomly divided 82 cases of diabetic diarrhea patients into two groups, both groups were treated with Bifidobacterium bifidum triphalaenum on the basis of basic hypoglycemic therapy, the control group was treated with Bifidobacterium bifidum triphalaenum, while the experimental group was treated with the formula for strengthening the spleen and tonifying the kidney (Coix seed, Fried lentil, Poria cocos, yam, lotus seed, Hangzhou Baipeony, Atractylodes, psoraleae, simmering pueraria, Tangerine peel, Scutellaria baicalensis, Schisandrae fructus). The results showed that the experimental group had more intestinal flora than the control group, and the total effective rate was significantly higher than that of the control group, which indicated that Strengthening the Spleen and Replenishing the Kidneys Formula could alleviate the clinical symptoms of patients with diabetic diarrhea. Jia Nannan^[31] selected 135 patients with diabetic diarrhea, randomly divided into 68 cases in the study group and 67 cases in the control group, both groups were treated with basic hypoglycemic therapy, the study group was treated with Strengthening the Spleen, Stopping Diarrhea and Resolving Toxins Decotion (Astragalus, Codonopsis ginseng, fried Atractylodes, Coix seed, Poria, yam, white lentil, sand kernel, Tangerine peel, Gegen, bupleurum), and the control group was treated with Montmorillonite powder. The results showed that the total effective rate of the study group was better than that of the control group, which indicated that Strengthening the Spleen, Stopping Diarrhea and Resolving Toxins Decotion had good efficacy in the treatment of diabetic diarrhea of weak spleen and stomach type. Fei Xuan^[32] randomly divided 70 patients with type 2 diabetic diarrhea into a control group and an observation group. The control group received conventional

treatment with Western medicine, and the observation group received treatment with Shengyang Fangfeng Chushi Decotion on the basis of the control group. After 4 weeks of treatment, the total effective rate of the observation group was 91.18%, which was higher than 69.70% of the control group. And the patients' FBG, 2hPBG and HBAc1 were all reduced, which proved that Shengyang Fangfeng Chushi Decotion was effective in the treatment of diabetic diarrhea caused by spleen deficiency and dampness.

5. Traditional Chinese medicine specialty therapy

5.1 Acupuncture and moxibustion

Professor Li Xiaojuan ^[33] concluded that diabetic diarrhea is closely related to the stomach channel of foot Yang Ming, the Kidney channel of foot Shao yin, the Spleen channel of foot Taiyin. In clinical treatment, the method of "acupuncture and medicine" was adopted. On the basis of oral administration of traditional Chinese medicine, identification of evidence and taking acupuncture points, combined with opening and closing the six qi needles, the treatment of diabetic diarrhea efficacy is remarkable. Chen Li ^[34] used acupuncture auricular acupoints to treat 64 patients with type 2 diabetic diarrhea, and the results showed that the total effective rate of the combined treatment group was higher than that of the single acupuncture group, and the FPG, 2hPG, and HBAc1 of the combined treatment group were lower than those of the single group, which indicated that this treatment method can effectively improve the indicators of the patients and improve the prognosis of the patients.

5.2 Acupuncture Point Patching

Huang Huirong ^[35] included 60 cases of spleen and kidney yang deficiency type patients, and on the basis of giving 30 cases of control group conventional glucose-lowering and anti-diarrhea treatment, using moxibustion on salt (tianshu acupoints) and acupoint plastering method to treat the observation group. The results suggest that the data of the observation group are better than that of the control group, indicating that acupoint plastering can control the symptoms of diabetic diarrhea and can reduce the glycaemia of the patients. Zhang Xiaolei randomly divided 70 diabetic diarrhea patients (spleen deficiency and dampness type) into two groups, the control group was given oral trimethoprim maleate on the basis of basal hypoglycemia, and the observation group was combined with Shenling Baizhu San ,medicinal cake moxibustion (Intestinal wind point)on the basis of the control group. The results showed that the treatment rate of the observation group was significantly higher than that of the control group.

6. Summary

Diabetic diarrhea is an intractable diarrhea for which there is no better treatment in modern medicine. When treating diabetes mellitus, traditional Chinese medicine practitioners need to take into account both "thirst" and "diarrhea" at the same time. Based on the overall concept, identification of evidence, selection of prescriptions and medication, together with Chinese medicine characteristic therapy, can significantly reduce the patient's symptoms, improve their quality of life, and has a better clinical value. The treatment of diabetic diarrhea by Traditional Chinese medicine has certain advantages, but TCM lacks a unified standard for the etiology and identification of diabetic diarrhea, so more attention should be paid to the development of this aspect in the subsequent clinical research.

References

- [1] Zhang Jiadong, Peng Liping, Zhu Di. Research status of Chinese medicine in treating diabetes diarrhea [J]. *Hunan Journal of Traditional Chinese Medicine*, 2017, (01): 169-171
- [2] Zhang Minying, Cao Wenjun. 30 cases of diabetes diarrhea treated with modified Shenling Baizhu powder [J]. *Shaanxi Traditional Chinese Medicine*, 2015, 36 (06): 670-671
- [3] Zhang Boli, Wu Mianhua. *Internal medicine of Traditional Chinese Medicine (the fourth edition of the new century)* [M]. Beijing: China Traditional Chinese Medicine Press, 2017, 8:316
- [4] Zhang Yue, Li Juan, Zhang Yi, Li Jintian, Zhao Kunpeng, Zhang Chaoning, Gu Changjun, Ma Tianxing Analysis of the Academic Origin and Syndrome Treatment of Xiaoke Disease in "Synopsis of the Golden Chamber" [J]. *Chinese Medical Forum*, 2020, (03): 5-7
- [5] Gao Yuying, Cao Hongxia, Luo Weixuan, Chen Guoquan. Research Progress on TCM Etiology and Pathogenesis of Type 2 diabetes [J]. *Clinical Research of TCM*, 2022, (21): 73-76
- [6] Li Ciyan, Li Mai, Yang Lixia, Shi Xiaowei, Qiu Lianli. Academician Tong Xiaolin's Academic Thoughts on the Treatment of Complications of diabetes [J]. *Chinese Medicine Research*, 2021, 34 (09): 67-70
- [7] Zhao Lu, Shao Suju. Professor Shao Jingming's experience in treating Complications of diabetes [J]. *Research on Traditional Chinese Medicine*, 2019, (01): 39-41
- [8] Guo Biao, Zhang Sa, Zhou Desheng. Chen Dashun's academic thought and clinical experience in the differentiation and treatment of diabetes diarrhea [J]. *Journal of Clinical Chinese Medicine*, 2018, 30 (04): 658-662
- [9] Fu Kefei. Professor Zhang Yuqin treats diabetes enteropathy from spleen and kidney [J] *Modern Drug Applications in China*, 2015, 9 (10): 223-224
- [10] Yuanjun Z, Zhenhua N. *Research Progress of Traditional Chinese Medicine in the Treatment of Diabetic Gastroparesis*[J]. *Chinese Medicine Modern Distance Education of China*, 2017.
- [11] Cong X , Wanjin J , Rong Y U ,et al. Meta Analysis of Randomized Controlled Trial of Diabetic Diarrhea Treated by Combination of Traditional Chinese and Western Medicine[J]. *Clinical Journal of Traditional Chinese Medicine*, 2019.
- [12] Zeng Xiangzhe, Wang Dong. Analysis of diabetes diarrhea from the perspective of Shaoyang Taiyin syndrome [J]. *Asia Pacific Traditional Medicine*, 2020, 16 (06): 89-91
- [13] Chen Zhi, Fang Chaohui. Fang Chaohui's experience in treating diabetes autonomic neuropathy based on syndrome differentiation [J]. *Hebei Traditional Chinese Medicine*, 2018, 40 (09): 1293-1295+1300
- [14] Zhang Yujie, Wang Shuang, Wang Rong. Analysis on the medication rule of traditional Chinese medicine for diabetes diarrhea [J]. *Journal of Shaanxi University of Chinese Medicine*, 2019, 42 (01): 126-129
- [15] Xu Chang, Shi Yan, Yang Yufeng. Analysis of the medication rule of traditional Chinese medicine for diabetes diarrhea based on data mining [J]. *Journal of Liaoning University of Traditional Chinese Medicine*, 2020, 22 (11): 96-99
- [16] Li-Juan M A , Guo-Ru Z .Treatment of Diabete Diarrhea from the Spleen Experience[J].*Journal of Liaoning University of Traditional Chinese Medicine*, 2011.
- [17] Chen Mengyu, Liu Wei, Shen Guixin, Wang Yongli. Research progress on the chemical components and pharmacological activities of yams [J]. *Journal of Traditional Chinese Medicine*, 2020, 48 (02): 62-66
- [18] Boulang éClaire L, Neves Ana Luisa, Chiloux Julien, Nicholson Jeremy K, Dumas Marc. Emmanuel Impact of the gut microbiota on inflation, obesity, and metabolic disease [J]. *Genome medicine*, 2016, 8 (1): 42-53
- [19] Han Wenbiao, Liu Yan. Clinical efficacy of modified Banxia Xiexin Decoction in the treatment of diabetes diarrhea [J]. *Chinese Journal of Anorectal Diseases*, 2019, 39 (08): 42-43
- [20] Ma Ruifang, Li Haoran, Liu Zhipeng, Lu Shaomin. Classic prescriptions for diabetes diarrhea [J]. *Asia Pacific Traditional Medicine*, 2020, (03): 104-105
- [21] Jian Z, Jing Z, Endocrinology D O .Clinical Effects of Ginger-partitioned Moxibustion on Diabetic Diarrhea and its Influence on Intestinal Flora[J]. *Research of Integrated Traditional Chinese and Western Medicine*, 2016.
- [22] Zhang Ning, Luo Shiren. Effect of Fuzi Lizhong Pill combined with Bifidobacterium Quadruple Viable Tablets in the treatment of type 2 diabetes diarrhea (spleen kidney yang deficiency syndrome) and its impact on gastrointestinal microecology and inflammatory indicators [J]. *Clinical Medical Research and Practice*, 2023, (03): 125-127
- [23] Huang You, Yang Shasha, Lin Xia, Zhao Shengjia, Wei Xinyi, Fu Chaomei, Zhang Zhen. Study on the mechanism of Fuzi Lizhong Pill in treating Ulcerative colitis based on network pharmacology Macromolecular docking [J]. *Acta Pharmacologica Sinica*, 2020, (08): 1812-1822
- [24] Zhang Shijie, Le Shiwang. Clinical efficacy of Shenling Baizhu Powder in the treatment of diabetes diarrhea [J]. *World's latest medical information abstract*, 2019, (47): 184-185
- [25] Yang Li, Xin Wei, Cui Shuo, Wang Di, Guo Yinghui, Yang Zhixia. Observation on the efficacy of Shenling Baizhu Powder plus Pivium Bromide in the treatment of diarrhea caused by diabetes with spleen and stomach weakness [J]. *Modern Journal of Integrated Traditional and Western Medicine*, 2021, (16): 1786-1789

- [26] Huang Yulong, Li Zhijin, Wu Pingcai. *Observation on the efficacy and mechanism of Gegen Qinlian Decoction in treating diarrhea type irritable bowel syndrome with spleen stomach damp heat syndrome [J]. Chinese Journal of Medicine#Basic sciences of Traditional Chinese Medicine, 2022, (12): 2015-2017*
- [27] Liu Ruijuan, Shi Zhaohong. *Observation on the therapeutic effect of modified Gegen Qinlian decoction on diarrhea type irritable bowel syndrome of spleen and stomach dampness heat type [J]. Shanxi Traditional Chinese Medicine, 2021, (06): 17-19*
- [28] Zeng Xiangzhe, Wang Dong. *Analysis of diabetes diarrhea from the perspective of Shaoyang Taiyin syndrome [J]. Asia Pacific Traditional Medicine, 2020, (06): 89-91*
- [29] Mao Yanhong, Wang Yanfang. *Chaihu Guizhi Ganjiang Decoction in the treatment of 30 cases of diabetes diarrhea with mixed cold and heat [J]. Henan Traditional Chinese Medicine, 2017, 37 (06): 968-970*
- [30] Shen Xueyong. *Effect of Jianpi Bushen Recipe on diabetes diarrhea [J]. Grassroots Traditional Chinese Medicine, 2022, (03): 26-29*
- [31] Jia Nannan. *Observation on the efficacy of Jianpi Zhixie Huadu Decoction in the treatment of diabetes diarrhea with spleen stomach weakness [J]. Journal of Practical Traditional Chinese Medicine, 2021, (02): 186-187*
- [32] Fei Xuan, Shi Zhimin, Li Xueqing. *Clinical observation on Shengyang Chushi Fangfeng Decoction combined with western medicine in treating diarrhea of type 2 diabetes with spleen deficiency and dampness excess [J]. Chinese Journal of Integrated Digestion of Traditional and Western Medicine, 2020, 28 (10): 766-771*
- [33] Bao Rui, Li Xiaojuan. *Li Xiaojuan's experience in the treatment of diabetes diarrhea with acupuncture and medicine [J]. Journal of Clinical Chinese Medicine, 2021, 33 (01): 35-38*
- [34] Chen Li, Zheng Jinqing. *Study on the effectiveness of acupuncture and moxibustion combined with auricular plaster therapy in the treatment of diarrhea caused by type 2 diabetes [J]. Diabetes New World, 2021, 24 (16): 182-185*
- [35] Huang Huirong, Liu Qinyu, Han Xueqi, Miao Shaofang. *Observation on the therapeutic effect of salt separated moxibustion combined with acupoint application on diabetes diarrhea of spleen kidney yang deficiency type [J]. Fujian Traditional Chinese Medicine, 2019, 50 (05): 72-73*