Systematic review of adjuvant sulfasalazine in the treatment of ulcerative colitis

Hui Zhang[1], Yi Li[2, *], Yujiao Xue[1], Changan Zhou[1]

[1]Shaanxi University of Chinese Medicine, Xianyang 712046, Shaanxi Province, China

[2]The Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang 712000, Shaanxi Province, China

*Corresponding author: Conf_184697086@qq.com

Abstract: The incidence of ulcerative colitis is concentrated in those with a high educational level such as universities. The incidence is mainly young and middle-aged, and the occupational pressure is high, such as teachers and technicians, and the incidence of ulcerative colitis is not obvious in men and women. Difference; the disease can occur at any age, but more common in young adults. Its main symptoms are stool mucus pus and blood, abdominal pain, increased stool frequency, fatigue, loose stools, poor sleep, dry mouth, cold body and cold limbs, impatience, tenesmus, etc. OBJECTIVE: This study compared mesalazine and sulfasalazine to study the systematic review of sulfasalazine in the adjuvant treatment of ulcerative colitis. Methods: A total of 62 patients admitted to the hospital were selected and divided into two groups by random number method. They were treated respectively. The treatment effect, the frequency of defecation, diarrhea, abdominal pain and the incidence of adverse reactions were compared between the two groups before and after treatment. Results: The two groups of patients were compared after treatment, and the difference was statistically significant. The results showed that by comparing and analyzing the gender, age and other basic data of the two groups of patients, the curative effect of sulfasalazine was better, and the difference was not statistically significant (P>0.05), which was comparable.

1. Introduction

Ulcerative colitis is a non-specific inflammatory colon disease, the lesions are mainly concentrated in the rectum, and gradually develop to the descending colon. In general, the etiology of ulcerative colitis is characterized by significant complexity, and recurrent episodes are common, which has a serious impact on the normal life and work of patients [1]. At present, it is clinically believed that the disease may be related to multiple factors such as immunity, environment, spirit, psychology, etc. UC can lead to different degrees of diarrhea, abdominal pain, anemia, fever, mucus, pus and blood in the stool and other symptoms, which seriously affects the quality of life of patients. As the disease progresses, the entire colon can be involved. Through a comprehensive understanding of the incidence of ulcerative colitis in my country in recent years, it is found that the incidence of this

disease is high, and it shows a trend of increasing year by year, which reduces the quality of life of patients [2]. If ulcerative colitis is left untreated, it can become cancerous [3]. The current treatment of ulcerative colitis, drugs are the main means. In recent years, the incidence of this disease in my country has been on the rise [4]. Clinically, aminosalicylic acid drugs are mainly used for treatment, including mesalazine, oxalazine, sulfasalazine, etc. There are differences in the clinical efficacy of different drugs [5]. At this stage, the pathogenesis of ulcerative colitis has not been fully clarified. Relevant scholars believe that under the influence of related factors, such as intestinal bacterial infection, environmental factors and immune imbalance, it is very easy to induce the disease. In clinical manifestations, Symptoms include diarrhea and abdominal pain. How to effectively improve the therapeutic effect of UC is of great significance [6].

2. Ulcerative colitis and related research data

2.1 Brief description of ulcerative colitis

Ulcerative colitis is a chronic nonspecific ulcerative colitis, a type of inflammatory bowel disease. The symptoms are mainly abdominal sea, abdominal pain, pus and blood spots in the stool, and fatigue, abdominal chills and other symptoms. Ulcerative colitis (UC) is one of the most serious diseases in the gastrointestinal tract, and has been listed as one of the intractable diseases by modern medicine by WHO (World Health Organization) [7]. The main clinical features of this disease are diarrhea, abdominal pain, mucus pus and bloody stool, tenesmus, and may be accompanied by systemic symptoms of varying degrees, such as fever, anemia, water and electrolyte balance disorders, etc. Colonoscopy is often accompanied by mucosal congestion, edema, and bleeding. Multiple erosions and ulcers are also seen [8]. It is one of the modern intractable diseases due to its long course of disease, frequent recurrence, long treatment time and difficult treatment. In recent years, the incidence of sick colitis has been on the rise.

Ulcerative colitis is one of the high-risk factors for colorectal cancer, and colorectal cancer accounts for 15% of the mortality rate of ulcerative colitis. The incidence rate in my country is gradually increasing [9]. Exploring the pathogenesis of ulcerative colitis is the basis for effective treatment of this disease, but its pathogenesis has not been fully clarified, and studies have found that it is mostly related to immune, genetic, environmental and other factors. The disease is "intestinal seclusion" and "red fertile". When the yin receives it, it enters the five viscera, and when it enters the five viscera, the abdomen is full and occluded, the lower part is the mother's discharge, and after a long period of time, it is the bowel speech [10]. Can be classified as "diarrhea", "dysentery", "intestinal stagnation" and other TCM disease names, the disease is mostly related to the lung, spleen, liver and kidney. The victory of Shaoyin, the abdominal fullness and pain, is known as Chiwo. Similar manifestations of UC are called "big sputum" and "small intestine bleed", such as "small intestine bleeds and pus and blood in the stool, less abdominal pain, and large bleed, tenesmus, and can't defecate, and pain in the stem".

2.2 Related research materials

A total of 62 UC patients admitted to the hospital from January 2014 to December 2016 were selected as the research subjects [11]. There were 40 male patients and 32 female patients. The ages ranged from 20 to 66 years, with an average age of (41.2±5.7) years. In terms of the degree of disease, the number of patients with mild, moderate and severe cases was 50, 30 and 20, respectively. Among the lesions, the rectum, rectum, sigmoid colon, and whole colon were 38 and 32, respectively. , 30 cases. The disease course ranged from 1 month to 7 years, with an average course of (19.48±6.32) months; 32 cases were in active stage and 8 cases were in remission stage. All were in line with the

diagnostic criteria for ulcerative colitis; aged 18 to 75 years old; the diagnosis was confirmed by barium meal enema, pathological examination, endoscopy, etc.; they gave informed consent to this experiment and signed the informed consent voluntarily. To compare the curative effects of mesalazine and sulfasalazine. The clinical symptoms of the patients were: bloody stool in 12 cases, diarrhea in 20 cases, and abdominal pain in 30 cases [12]. The medical record showed abdominal pain, diarrhea, mucus pus and bloody stool; no serious organic diseases such as heart, liver, kidney, blood coagulation mechanism disorder, and systemic infection. The patient's mental function was normal. The disease course ranged from 0.5 to 9.1 years, with an average course of (4.2±1.6) years. There were 18 male patients and 13 female patients in the observation group.

Combined with the treatment methods, they were divided into observation group (31 cases) and control group (31 cases). The patient has not received UC treatment within 2 weeks before receiving treatment, and has clear consciousness, no mental illness or cognitive impairment, and good compliance. Patients with progressive disease; patients with severe heart, lung, liver and kidney diseases; patients with severe complications; patients with blood system diseases or endocrine system diseases. The gender, age and other basic data of the two groups of patients were compared and analyzed, and the difference was not statistically significant (P>0.05), which was comparable. According to this study, the efficacy of sulfasalazine is better. There are contraindications for mesalazine and sulfasalazine in patients; patients with other digestive system diseases, such as gastric cancer, gastrointestinal stromal tumor, etc.; lactating and pregnant women; patients with severe liver and kidney diseases, or severe infectious diseases Diseases, etc., should be excluded.

3. Discussion of methods and results

3.1 Method

The control group received conventional treatment, and then received sulfasalazine treatment and oral administration of sulfasalazine enteric-coated tablets. In the acute attack period, the initial dose was 2-3 g/d, 4 times/d. If the symptoms of discomfort were not obvious, gradually increase to 4~6g/d. The patients in the observation group were treated with mesalazine, that is, mesalazine enteric-coated tablets, orally, 1 g/time, tid, without chewing when swallowing, for 4 consecutive weeks, and the dose was adjusted to 0.5 g/time after 4 weeks. tid, continue treatment for 4 weeks. Both groups received 2 months of treatment, and the clinical effects of the two groups were observed. Including abdominal distension, stool frequency, tenesmus, stool character, abdominal pain, bloody stool and other main symptoms before and after treatment, and scored, the lower the score, the better the effect. At the same time, the adverse reactions of the two groups were recorded and compared. The colonoscopy scores and C-reactive protein (CRP) levels before and after treatment in the two groups were observed. Colonoscopy score: 0 points: no active lesions; 1 point: mild tissue lesions; 2 points: moderate tissue lesions; 3 points: severe tissue lesions.

The time of symptom disappearance, serum CRP (C-reactive protein), IL-6 (interleukin-6) and tumor necrosis factor (TNF-α) levels in the two groups were compared and observed. During the treatment, keep a light diet, avoid cold, spicy and irritating foods, maintain a relaxed and happy state of mind, and do physical exercise appropriately. The obvious effect is that the clinical symptoms such as abdominal pain, pus and blood in the stool disappeared, the number of stools was significantly reduced, less than 3 times a day, the blood routine test was negative, and the colonoscopy was normal. Effective for negative stool routine, mild inflammation of the ulcer surface, symptoms and signs were significantly relieved. The ineffectiveness was that there was no change in routine stool examination and colonoscopy, and no improvement in symptoms and signs. At the same time, the incidence of complications in the two groups was observed. In the detection of CRP, the combination of immunoturbidimetric method was used, and the enzyme-linked immunosorbent assay was used to

detect IL-6 and IL-8. The treatment effect was evaluated based on the treatment effect, the frequency of defecation, diarrhea, abdominal pain, and the incidence of adverse reactions before and after treatment in the two groups. All data were analyzed by SPSS17.0 software.

3.2 Discussion of results

Ulcerative colitis is a common and frequently-occurring disease in clinical practice. Because it is a nonspecific disease, patients present with a variety of clinical symptoms, such as fatigue, gastrointestinal discomfort, loss of appetite, vomiting, and diarrhea. Clinically, ulcerative colitis is one of the inflammatory bowel diseases. The etiology is not yet clear. It is very likely that genetically susceptible individuals may damage the intestinal mucosa through exogenous factors, resulting in edema and anemia. Patients with poor function may even promote the appearance of cancer, and the daily adjustment and feedback of patients are seriously imbalanced. Ulcerative colitis is a non-specific chronic inflammatory disease of the intestinal mucosa, which is characterized by repeated disease, easy recurrence, and prolonged non-healing. Affect the treatment of a patient's disease. The clinical efficacy comparison of the two groups of patients is shown in Table 1.

Table 1: Comparison of clinical efficacy between the two groups of patients

Group	show effect	Effective	Ee invalid
Control group	31	25	16
Observation group	49	33	20

In the current clinical diagnosis and research process of ulcerative colitis, the pathological mechanism of ulcerative colitis has not been fully explained. Ulcerative colitis is a chronic non-specific inflammatory disease that invades the colonic mucosa. Sulfasalazine is a widely used clinical drug for the treatment of ulcerative colitis. After the patient takes it, it can be decomposed into 19-aminosalicylic acid and sulfapyridine, which mainly affects the synthesis process of prostaglandins, thereby reducing inflammation., has a certain therapeutic effect on peptic ulcer and ulcerative colitis. The comparison of histological scores before and after treatment in the two groups is shown in Table 2.

Table 2: Comparison of histological scores between the two groups before and after treatment

Group	Before therapy	After treatment
Control group	2.71	0.84
Observation group	3.16	0.93

The disease seriously affects the physical and mental health of patients and reduces the quality of life. It can be seen that using effective methods to actively treat the disease has very important clinical significance for improving the quality of life. In the pathogenesis of the disease, the stomach and intestines are mainly affected by antigen triggers, such as pathogens, toxins, etc., to activate local immune cells in the digestive tract, and under the influence of long-term exposure to non-pathogenic bacterial antigens and food antigens in the intestinal lumen, It is not conducive to the control of the immune response of the body, resulting in the emergence of cross-immune reactions, and it is difficult to ensure a high balance between inflammatory mediators and protective factors, thereby causing repeated mucosal tissue damage and eventually causing ulcerative colitis.

Ulcerative colitis belongs to the categories of "dysentery", "intestinal diarrhoea" and "diarrhea" in traditional Chinese medicine. The theory of traditional Chinese medicine believes that this syndrome is caused by chronic diarrhea and damage to the spleen., Anorexia, nausea, fatigue, loose stools, pale tongue, white coating, slow pulse, so clinical treatment should be based on "spleen and diarrhea". The

clinical symptoms of ulcerative colitis vary in severity, some patients have alternating symptoms of remission and attacks, some patients have only colonic symptoms, and some patients have systemic symptoms. With widespread clinical application, it has been observed that patients are prone to adverse reactions such as abdominal pain, diarrhea, and bloody stools during the course of taking the drug, which can seriously affect the absorption of the drug and the therapeutic effect.

4. Conclusions

In conclusion, sulfasalazine can effectively improve the therapeutic effect of ulcerative colitis, and has a positive effect on improving the symptoms and signs of ulcerative colitis in patients. Clinical studies have shown that the active ingredients of sulfasalazine are mainly 5-aminosalicylic acid, and part of sulfadiazine is a carrier molecule. Sulfasalazine is the drug of choice for the clinical treatment of ulcerative colitis. Its main component is 5-aminosalicylic acid (5-ASA), which can directly act on the intestinal inflammatory mucosa and inhibit the synthesis of prostaglandins by inflammatory cells. and leukotrienes to achieve anti-inflammatory effects. It stays in the intestinal wall for a long time, inhibits the synthesis of prostaglandins, reduces the release of other inflammatory mediators such as leukotrienes, and has significant antibacterial and anti-inflammatory effects, as well as immunosuppressive effects. It can directly act on the mucosa with inflammatory changes, can effectively inhibit the synthesis of prostaglandins that cause inflammatory symptoms, and also block the synthesis of leukotrienes, the mediator of inflammatory symptoms, thereby achieving anti-inflammatory effects. Total effective rate = apparent rate + effective rate.

References

[1] Eichele D D, Kharbanda K K. Dextran sodium sulfate colitis murine model: An indispensable tool for advancing our understanding of inflammatory bowel diseases pathogenesis [J]. World Journal of Gastroenterology, 2017(33): 6016-6029.

[2] Fujikawa H, Araki T, Okita Y, et al. Impact of sarcopenia on surgical site infection after restorative proctocolectomy for ulcerative colitis [J]. Surgery Today, 2017, 47(1): 1-7.

[3] Dan T, Baruch Y, Michal K, et al. Once- Versus Twice-daily Mesalazine to Induce Remission in Paediatric Ulcerative Colitis: A Randomised Controlled Trial [J]. Journal of Crohns & Colitis, 2017, 11(5): 527.

[4] AE Khodir, Atef H, Said E, et al. Implication of Nrf2/HO-1 pathway in the coloprotective effect of coenzyme Q10 against experimentally induced ulcerative colitis [J]. Inflammopharmacology, 2017, 25(1): 1-17.

[5] Zong S, Ye H, Ye Z, et al. Polysaccharides from Lachnum sp. Inhibited colitis-associated colon tumorigenesis in mice by modulating fecal microbiota and metabolites [J]. International Immunopharmacology, 2022, 108(3): 108656.

[6] FaNg W, Ke W, Wei X, et al. SIRT5 Desuccinylates and Activates Pyruvate Kinase M2 to Block Macrophage IL-1β Production and to Prevent DSS-Induced Colitis in Mice [J]. Cell Reports, 2017, 19(11): 2331-2344.

[7] Fugmann T, Sofron A, Ritz D, et al. The MHC Class II Immunopeptidome of Lymph Nodes in Health and in Chemically Induced Colitis [J]. Journal of Immunology, 2017, 198(3): 1357.

[8] ChiriAc M T, Buchen B, Wandersee A, et al. Activation of Epithelial Signal Transducer and Activator of Transcription 1 by Interleukin 28 Controls Mucosal Healing inMice with Colitis and Is Increased in Mucosa of Patients WithInflammatory Bowel Disease [J]. Gastroenterology, 2017, 153(1): 123-138.

[9] Xiaoyong, Chen, Xin, et al. Prevent Effects of Lactobacillus Fermentum HY01 on Dextran Sulfate Sodium-Induced Colitis in Mice[J]. Nutrients, 2017, 9(6):545.

[10] Nanjundappa R H, Ronchi F, Wang J, et al. A Gut Microbial Mimic that Hijacks Diabetogenic Autoreactivity to Suppress Colitis. [J]. Cell, 2017, 171(3): 655.

[11] B S Y Z A, A Y Q P, A B L X, et al. Study on the physicochemical properties and anti-inflammatory effects of paeonol in rats with TNBS-induced ulcerative colitis [J]. International Immunopharmacology, 2017, 42: 32-38.

[12] Wang D Y, Fei Y, Zhao S, et al. Incidence of immune checkpoint inhibitor-related colitis in solid tumor patients: A systematic review and meta-analysis. [J]. Oncoimmunology, 2017, 6(12): e1344805.