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Clinical Observation of Huangqi Sijun Decoction in the Treatment of Chronic Atrophic Gastritis

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Abstract: *Objective:* To evaluate the therapeutic effects of Huangqi Sijun Decoction on chronic atrophic gastritis (CAG). *Methods:* Sixty CAG patients hospitalized between January 2020 and December 2022 were selected and randomly divided into two groups using a random number table. The Traditional Chinese Medicine (TCM) group (n = 30) was treated with Huangqi Sijun Decoction, while the Western medicine group (n = 30) received omeprazole. The total effective rate, TCM syndrome scores, and serological indicators were compared. *Results:* The total effective rate in the TCM group was higher than that in the Western medicine group, while the adverse reaction rate was lower ($P < 0.05$). Before treatment, there were no significant differences in TCM syndrome scores or serological indicators between the two groups ($P > 0.05$). After treatment, the TCM group had lower TCM syndrome scores and better serological indicators compared to the Western medicine group ($P < 0.05$). *Conclusion:* Huangqi Sijun Decoction can enhance the clinical efficacy of CAG patients, prevent adverse reactions, alleviate TCM symptoms, and regulate specific levels of serological indicators, demonstrating significant therapeutic advantages.

Keywords: Huangqi Sijun Decoction; Chronic atrophic gastritis; TCM syndrome scores; Serological indicators

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1. Introduction

Chronic atrophic gastritis (CAG) is a slowly progressing digestive disease characterized by symptoms such as abdominal distension, abdominal pain, acid reflux, and belching. It is often accompanied by anemia and indigestion and increases the risk of gastric ulcers and gastric cancer [1]. Conventional treatment typically involves oral Western medications such as omeprazole, aiming to eliminate pathogenic bacteria and stabilize the patient's condition. However, Western medications often have numerous side effects and suboptimal overall efficacy.

According to traditional Chinese medicine (TCM), CAG falls under the category of "Weipi" (stomach oppression) and is caused by liver Qi stagnation. Treatment requires detoxification, spleen awakening, and

turbidity transformation. Huangqi Sijun Decoction is the preferred prescription due to its therapeutic effects of Qi tonification, spleen strengthening, and blood replenishment [2]. Based on this understanding, this study selected 60 CAG patients to evaluate the therapeutic efficacy of Huangqi Sijun Decoction.

2. Materials and methods

2.1. General information

Sixty patients with CAG admitted between January 2020 and December 2022 were enrolled. Patients were randomly assigned into two groups using a random number table. The TCM group (n = 30) comprised 17 male and 13 female patients, aged 33–68 years, with a mean age of 52.13 ± 4.38 years and a disease course of 2–9 years (mean: 5.21 ± 0.79 years). The Western medicine group (n = 30) comprised 18 male and 12 female patients, aged 40–69 years, with a mean age of 51.22 ± 4.39 years and a disease course of 1–9 years (mean: 5.32 ± 0.74 years). No significant differences were observed in baseline characteristics between the two groups ($P > 0.05$).

Inclusion criteria: Endoscopic findings showing red and white gastric mucosa with a granular appearance and flat folds, confirmed as CAG; presence of typical symptoms such as abdominal distension and abdominal pain; complete clinical data; informed consent to participate in the study.

Exclusion criteria: Patients with heart, liver, or kidney dysfunction; those with malignant tumors; coagulation disorders; mental disorders; or a history of gastrointestinal surgery.

2.2. Methods

(1) TCM group: Patients were treated with Huangqi Sijun Decoction, comprising the following ingredients: *Astragalus membranaceus* (30 g), Poria (10 g), *Pseudostellaria heterophylla* (30 g), *Pinellia ternata* (10 g), dandelion (30 g), stir-fried Atractylodes (15 g), *Oldenlandia diffusa* (30 g), cinnamon twig (10 g), *Agrimonia pilosa* (30 g), *Amomum villosum* (added later, 10 g), and *Aucklandia lappa* Decne (10 g). The herbs were decocted in water to yield 100 mL of herbal extract. Patients took one dose daily, divided into three oral administrations, for 14 consecutive days.

(2) Western medicine group: Patients were treated with omeprazole enteric-coated capsules at a dose of 20mg twice daily (morning and evening) for 14 consecutive days.

2.3. Observation indicators

(1) Adverse reactions: Including dizziness, gastrointestinal reactions, nausea, and rash.

(2) TCM syndrome scores: Evaluating symptoms such as abdominal distension, abdominal pain, acid reflux, belching, and nausea with poor appetite. Each symptom was scored on a scale of 0–3, with higher scores indicating more severe symptoms.

(3) Serological indicators: Before and after 14 days of treatment, 5 mL of venous blood was collected. After coagulation, the blood was centrifuged at 1,000 rpm with a radius of 10 cm for 10 minutes. The supernatant was analyzed using an automated enzyme-linked immunosorbent assay (ELISA) system to measure interleukin-6 (IL-6), serum gastrin-17 (G-17), and pepsinogen I (PG I).

2.4. Criteria for efficacy evaluation

(1) Significant efficacy: A reduction of ≥ 70% in TCM syndrome scores and ≥ 75% in gastric mucosal lesions.

(2) Moderate efficacy: A reduction of 30–70% in TCM syndrome scores and 50–75% in gastric mucosal lesions.
(3) No efficacy: A reduction of < 30% in TCM syndrome scores and < 50% in gastric mucosal lesions.

2.5. Statistical analysis

Data were analyzed using SPSS 28.0 software. Measurement data were expressed as mean ± standard deviation (SD) and compared using *t*-tests, while count data were expressed as [*n* (%)] and compared using χ^2 tests. Statistical significance was set at $P < 0.05$.

3. Results

3.1. Comparison of overall efficacy rates between groups

Table 1 shows that the overall efficacy rate of the TCM group was significantly higher than that of the Western medicine group ($P < 0.05$).

Table 1. Comparison of overall efficacy rates between groups [*n* (%)]

Group	n	Significant efficacy	Moderate efficacy	No efficacy	Total efficacy rate
TCM group	30	18 (60.00)	11 (36.67)	1 (3.33)	29 (96.67)
Western medicine group	30	13 (43.33)	10 (33.33)	7 (23.33)	23 (76.67)
χ^2	-	-	-	-	5.192
P	-	-	-	-	0.023

3.2. Comparison of adverse reaction rates between groups

Table 2 shows that the adverse reaction rate of the TCM group was significantly lower than that of the Western medicine group ($P < 0.05$).

Table 2. Comparison of adverse reaction rates between groups [*n* (%)]

Group	n	Dizziness	Gastrointestinal reaction	Nausea	Rash	Adverse reaction rate
TCM group	30	1 (3.33)	1 (3.33)	1 (3.33)	0 (0.00)	3 (10.00)
Western medicine group	30	2 (6.67)	3 (10.00)	4 (13.33)	1 (3.33)	10 (33.33)
χ^2	-	-	-	-	-	4.812
P	-	-	-	-	-	0.028

3.3. Comparison of TCM syndrome scores between groups

Before treatment, no significant difference was observed in TCM syndrome scores between the two groups ($P > 0.05$). After treatment, the TCM group showed significantly lower scores compared to the Western medicine group ($P < 0.05$), as shown in **Table 3**.

Table 3. Comparison of TCM syndrome scores between groups before and after treatment (mean ± SD, points)

Group	*n*	Abdominal distension and pain		Acid reflux and belching		Nausea and poor appetite	
		Before	After	Before	After	Before	After
TCM group	30	2.13 ± 0.43	0.51 ± 0.13	2.21 ± 0.49	0.46 ± 0.10	2.20 ± 0.37	0.44 ± 0.09
Western medicine group	30	2.15 ± 0.41	0.95 ± 0.21	2.24 ± 0.44	0.79 ± 0.17	2.24 ± 0.33	0.69 ± 0.15
t	-	0.184	9.758	0.250	9.164	0.442	7.828
P	-	0.854	0.000	0.804	0.000	0.660	0.000

3.4. Comparison of serological indicators between groups

Before treatment, no significant differences in serological indicators were observed between the two groups ($P > 0.05$). After treatment, the TCM group showed significantly better improvements in serological indicators compared to the Western medicine group ($P < 0.05$), as shown in **Table 4**.

Table 4. Comparison of serological indicators between groups before and after treatment (mean ± SD)

Group	*n*	IL-6 (ng/L)		G-17 (ng/L)		PGI (μg/L)	
		Before	After	Before	After	Before	After
TCM group	30	84.98 ± 8.12	43.22 ± 4.62	38.77 ± 4.91	58.66 ± 6.34	58.33 ± 5.80	98.26 ± 9.46
Western medicine group	30	84.76 ± 8.19	49.72 ± 4.69	38.90 ± 4.86	52.43 ± 6.25	57.91 ± 5.93	87.12 ± 9.35
t	-	0.104	5.408	0.103	3.833	0.277	4.587
P	-	0.917	0.000	0.918	0.000	0.783	0.000

4. Discussion

The common cause of chronic atrophic gastritis (CAG) is Helicobacter pylori infection, and Western medicine often uses treatments to eradicate such pathogens, alleviate gastric mucosal inflammation, repair damaged gastric mucosa, inhibit the progression of intestinal epithelial proliferation, and ultimately improve disease prognosis [3]. Omeprazole, a commonly used Western drug for CAG, is a proton pump inhibitor (PPI) that reduces gastric acid secretion and lowers the pH within the stomach, thereby alleviating symptoms. Additionally, omeprazole has broad-spectrum antibacterial properties, providing stable therapeutic effects [4]. However, omeprazole alone is limited in its ability to improve gastric mucosal lesions and is associated with a higher incidence of adverse reactions. Therefore, it can be combined with traditional Chinese medicine (TCM) therapies.

In TCM, CAG falls under the categories of “Weipi” (stomach oppression) and “Weiwantong” (epigastric pain). Its causes are attributed to emotional disturbances, improper diet, and external pathogenic factors. The underlying pathology involves spleen and stomach deficiency, as well as liver-stomach disharmony, requiring treatment principles such as soothing the liver, harmonizing the stomach, strengthening the spleen, and replenishing vital energy. Huangqi Sijun Decoction is an optimized version of the traditional Sijunzi Decoction and is commonly used for conditions involving spleen and stomach qi deficiency. It enhances energy and yang, thereby improving the patient’s condition [5].

The results of this study show that the overall efficacy rate of the TCM group was significantly higher than that of the Western medicine group ($P < 0.05$), consistent with the findings of Zhang *et al*. [6]. The adverse reaction

rate in the TCM group was lower than in the Western medicine group, and the TCM syndrome scores in the TCM group were also lower ($P < 0.05$). This can be attributed to the fact that Huangqi Sijun Decoction, being a pure TCM formula, contains low-toxicity herbal ingredients that are less likely to cause side effects such as nausea or dizziness, offering strong therapeutic safety.

Key components of the formula include:

(1) *Astragalus membranaceus*: Enhances surface resistance and replenishes qi.

(2) *Agrimonia pilosa*: Aids in hemostasis, alleviates qi deficiency, and improves symptoms.

(3) *Pseudostellaria heterophylla*: Promotes fluid production and replenishes qi.

(4) *Aucklandia lappa* Decne: Strengthens the spleen, aids digestion, relieves pain, and promotes qi circulation.

When used together, these ingredients synergistically enhance qi, promote blood circulation, strengthen the spleen, and detoxify, thereby improving efficacy and alleviating disease symptoms.

After treatment, IL-6 levels in the TCM group were lower than in the Western medicine group, while G-17 and PG I levels were higher ($P < 0.05$). These findings suggest that Huangqi Sijun Decoction can reduce inflammatory responses and inhibit disease progression.

(1) IL-6: An inflammatory factor that regulates immune responses and reflects the degree of infection [7].

(2) G-17: Useful for early screening of gastric cancer risk and assessing the endocrine status of the gastric antrum. A decrease in G-17 levels indicates atrophic lesions in the gastric mucosa, while an increase suggests significant mucosal proliferation [8].

(3) PG I: A sensitive indicator for evaluating gastric inflammation, mucosal atrophy, and precancerous lesions, as well as overall gastric function.

Treatment with Huangqi Sijun Decoction significantly improved these indicators, due to its anti-inflammatory mechanisms that suppress gastric inflammation, prevent further tissue damage, and protect gastric function [9,10].

5. Conclusion

In conclusion, Huangqi Sijun Decoction significantly improves the overall efficacy rate in CAG patients, reduces adverse reactions, alleviates disease symptoms, and inhibits disease progression, leading to better clinical outcomes.

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Disclosure statement

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