https://www.scirp.org/journal/ns Natural Science, 2022, Vol. 14, (No. 2), pp: 56-61

Exploration and Study of Jianpi Qushi Powder Combined with Standard Anti HP Quadruple Therapy in the Treatment of HP Infectious Gastritis of Spleen Deficiency and Dampness Stagnation Type

Qiangcai Mai[1*], Guosheng Su[2#], Lihua Qin[2,3*], Shoulan Gong[4†], Miaoling Liang[1*], Yu Gan[1], Xinrong Huang[1], Xiaoye Su[3,5], Buqing Su[6], Xiuling Wei[1], Min Yang[1]

[1]The Second Department of Internal Medicine of Guigang Integrated Traditional Chinese and Western Medicine Orthopedic Hospital, Guigang, China; [2]Laboratory Department of People's Hospital of Guangxi ASEAN Economic and Technological Development Zone, Nanning Tenth People's Hospital, Nanning, China; [3]Department of Nursing, Graduate College of Eternity University of the Philippines, Las Pinas, Philippines; [4]People's Hospital of Gangbei District, Guigang, China; [5]Department of Critical Care Medicine, Fuzhou Second People's Hospital, Fuzhou, China; [6]Department of Nursing, Vocational College of Liaoning Hospital, Shenyang, China

Correspondence to: Guosheng Su, 563449581@qq.com

Keywords: Traditional Chinese Medicine Jianpi Qushi Powder, Helicobacter Pylori, Standard Anti HP Quadruple Therapy, Spleen Deficiency Dampness Stagnation Type, Gastritis

Received: January 18, 2022 **Accepted:** February 20, 2022 **Published:** February 23, 2022

ABSTRACT

Objective: To explore the therapeutic effect of traditional Chinese medicine Jianpi Qushi powder combined with standard anti-HP quadruple therapy in the treatment of HP infectious gastritis with spleen deficiency and dampness stagnation. Methods: From January 2020 to December 2021, 223 patients with laboratory-confirmed HP infection who were admitted to the Outpatient and Inpatient Department of Internal Medicine in our hospital were selected as the research objects and randomly divided into two groups. 101 patients in the control group were given standard anti HP quadruple therapy; 122 cases in the treatment group were given traditional Chinese medicine Jianpi Qushi powder combined with standard anti HP quadruple therapy. The two groups were rechecked carbon breath test after the designed course of treatment, and the curative effects of the two groups were compared. Results: 113 cases in the treatment group were cured by traditional Chinese medicine Jianpi Qushi powder combined with standard anti HP quadruple therapy, and the cure rate was 92.62%. 84 cases in the control group were cured by standard anti HP quadruple therapy,

*Co-first author.
#Corresponding author.
†Co-corresponding author.

and the cure rate was 83.17%, χ^2 = 4.7955, P = 0.0285, the difference was statistically significant (P < 0.05). Conclusion: Traditional Chinese medicine Jianpi Qushi powder combined with standard anti HP quadruple therapy in the treatment of HP infectious gastritis with spleen deficiency and dampness stagnation is one of the best treatment schemes for HP infection. The results of this study achieve the best clinical treatment effect, and provide a more valuable and reliable method for the treatment of gastropathy in clinical internal medicine, which is worthy of popularization and application.

1. INTRODUCTION

Since the discovery of *Helicobacter pylori* (HP), a large number of studies at home and abroad have shown that [1-8], *Helicobacter pylori* is the main cause of infection of chronic active gastritis and peptic ulcer; *Helicobacter pylori* infection is also associated with gastric lymphoma, gastric cancer and dyspepsia. The World Health Organization's Agency for Research on Cancer (IARC) defined *Helicobacter pylori* as a class I carcinogen in 1994, and the eradication of *Helicobacter pylori* was taken as a guideline for preventing gastric cancer in many countries [9-12]. With the extensive drug treatment of HP infection, drug resistance has an increasing trend, and the probability of eradicating HP is also decreasing year by year. The treatment of *Helicobacter pylori* infection is facing greater challenges [13-16]. In recent years, the treatment plan of *Helicobacter pylori* has changed from tripartite combination to quadripartite combination, and the course of treatment has been extended continuously. The dosage of antibiotics has been increasing, but the efficacy is very limited; the side effects have been increasing, and a few patients have repeated attacks. The treatment of HP has entered a difficult period, and the exploration of traditional Chinese medicine for the treatment of HP infection has become a new idea for many domestic researchers [17, 18]. In recent years, some domestic scholars and research institutions have also studied the treatment plan of traditional Chinese medicine, and made some breakthroughs with definite curative effect, which has been well received by the majority of patients [19]. In order to understand the therapeutic effect of traditional Chinese medicine Jianpi Qushi powder on HP infectious gastritis of spleen deficiency and dampness stagnation type, this study used traditional Chinese medicine Jianpi Qushi powder combined with standard anti HP quadruple therapy to explore and study the treatment of HP infectious gastritis of spleen deficiency and dampness stagnation type. The results are reported as follows.

2. MATERIALS AND METHODS

2.1. Research Object

A retrospective control analysis was performed on 223 laboratory-confirmed patients with HP infection who were admitted to the outpatient department and inpatient department of our hospital from January 2020 to December 2021. They were randomly divided into two groups, including 101 patients in the control group, aged 20 - 67 years old, with an average age of (45.74 ± 11.58) years old, 52 males and 49 females. $\chi 2$ = 0.1782, P = 0.6729, there was no significant difference between male and female; while, there were 122 patients in the treatment group, ranging in age from 21 to 71 years old, with an average age of (43.46 ± 11.56) years old, 50 males and 72 females, $\chi 2$ = 7.9344, P = 0.0049, and the difference was statistically significant. Although there was a certain gender difference in this group, the gender difference in the same group did not affect the treatment effect. The number of cases between the two groups was compared, $\chi 2$ = 3.9552, P = 0.0467, the difference was statistically significant; the age comparison of the two groups, t = 0.7741, P = 0.2209, the difference was not statistically significant, and the treatment effects were comparable. Comparison of gender between the two groups, $\chi 2$ = 2.4553, P = 0.1171, the difference was not statistically significant, and the treatment effects were comparable. The specific results are shown in Table 1. All enrolled cases were signed and agreed by the individual and implemented after discussion and comparison by the Ethics and Ethics Management Committee of the hospital.

Table 1. Comparison of gender and age of patients with *Helicobacter pylori* infection between the two groups.

Group	Number of cases	Average age (years)	Male (cases)	Female (cases)	χ^2 value	P value
The treatment	122	43.46 ± 11.56	50	72	0.1782	0.6729
The control group	101	45.74 ± 11.58	52	49	7.9344	0.0049
χ^2 or t value	3.9552	0.7741	2.4553		-	-
P value	0.0467	0.2209	0.1171		-	-

2.2. Treatment Methods

The treatment group was treated with traditional Chinese medicine jianpiqushi Powder combined with standard anti-HP quadruple therapy. Standard anti-HP quadruple drugs (Pantoprazole capsule 40 mg Qd, amoxicillin capsule 1.0 g, Bid, clarithromycin tablet 0.5 g Bid, bismuth potassium citrate tablet 0.6 g Bid) were taken orally for 14 days as a course of treatment. Traditional Chinese medicine: *Codonopsis pilosula* 30 g, *Atractylodes macrocephala* 10 g, *Poria cocos* 10 g, white lentil 7.5 G, tangerine peel 10 g, *Platycodon grandiflorum* 2.5 G, yam 15 g, lotus seed 7.5 G, coix seed 7.5 G, fructus amomi 2.5 G, moxibustion licorice 10 g. One dose per day, packed 100 m mesh after crushing, taking one tablespoon each time with boiled water and once in the morning and evening, 14 days as a course of treatment. The control group received standard anti-HP quadruplet therapy (Pantoprazole capsule 40 mg Qd, amoxicillin capsule 1.0 g, Bid, clarithromycin tablet 0.5 g Bid, bismuth potassium citrate tablet 0.6 g Bid) for 14 days as a course of treatment. Patients meeting the inclusion criteria were given periodic carbon breath test after the end of treatment.

2.3. Statistical Analysis

Statistical software SPSS24.0 was used for statistical analysis. T test was used for comparison of age, Chi-square test was used for comparison of gender and treatment effect, and $P < 0.05$ was considered statistically significant.

3. RESULTS

A repeat carbon breath test was performed one month after the end of the treatment course as designed in both groups. In the treatment group, 9 cases of *Helicobacter pylori* were still positive in 122 cases, accounting for 7.38%; the number of negative cases after treatment was compared with the number of still positive cases, $\chi 2 = 177.3115$, $P = 0.0000$, the difference was statistically significant. In the control group, 17 of the 101 cases were still positive for Helicobacter pylori, accounting for 16.83%; the number of negative cases after treatment was compared with the number still positive, $\chi 2 = 88.8911$, $P = 0.0000$, and the difference was statistically significant. Comparison of the number of *Helicobacter pylori* positive cases between the two groups after treatment, $\chi 2 = 4.7955$, $P = 0.0285$, the difference was statistically significant. The specific results are shown in **Table 2**.

4. DISCUSSION

Helicobacter pylori infection is a global problem [20, 21], and it is estimated that more than 50% of the global population is infected. The infection rate of HP in developed countries is 30% - 50%, and that in developing countries is about 80%. About one third of adults in northern Europe and North America have HP infection, while the prevalence of *Helicobacter pylori* is usually higher than 50% in southern and Eastern Europe, South America and Asia. In China, a survey of the general population in areas with high

Table 2. Comparison of the number of *Helicobacter pylori* positive cases between the two groups after treatment.

Group	Number of cases	Number of positives	Number of negative	χ^2 value	P value
Therapy group	122	9	113	177.3115	0.0000
Control group	101	17	84	88.8911	0.0000
χ^2 value	-	4.7955		-	-
P value	-	0.0285		-	-

incidence of gastric cancer showed that the prevalence of HP was 63.4%. It can be seen that HP is one of the pathogenic bacteria with high infection rate and shows a global epidemic trend, while there are significant differences in infection rates all over the world.

A large number of studies and clinical treatment practices at home and abroad show that [22-24], HP infection and colonization is the primary condition for its pathogenesis. If HP is removed, gastritis and gastric ulcer will be improved. The pH value of membrane layer in normal human stomach is about 2 - 4, and the pH value of gastric juice is about 2. Studies by weeks and others have shown that HP extracellular urease is inactivated when pH value is ≤4.5 and survives for less than 5 minutes when pH value is lower than 4.0. Then why can HP survive in a highly acidic environment in the stomach? Weeks and Scott believe that HP urea channel UreI can absorb urea from outside cells for intracellular urease to decompose into ammonia (NH3) and carbon dioxide (CO_2). The "ammonia cloud" formed by ammonia (NH3) creates a "comfortable" environment with Low oxygen and weak acid for HP colonization, which is a necessary molecule for HP colonization, However, the molecular immune characteristics of UreI and whether it can be used as a drug target to prevent HP infection have not been further reported.

According to traditional Chinese medicine [25], *Helicobacter pylori* belongs to the category of "evil Qi". The "Qi will be empty if the evil is gathered together", "the positive Qi exists, and the evil cannot invade". Supporting the positive and eliminating the evil is the basic principle for the treatment of *Helicobacter pylori* related diseases. According to the method of dividing treatment of deficiency and excess, those with excess can reduce it, those with deficiency can supplement it, and those with both deficiency and excess can supplement and reduce it. The excess is mainly manifested as dampness and heat, and the method of dispelling evil focuses on clearing heat and dispelling dampness. Deficiency is mainly manifested as spleen deficiency, and the method of strengthening health focuses on tonifying middle Qi, strengthening spleen and stomach. The effectiveness and mechanism of traditional Chinese medicine in the treatment of HP infection need more in-depth and meticulous confirmation by more researchers through basic and clinical research. At present, the treatment method of traditional Chinese medicine is mainly through systemic regulation to achieve the therapeutic effect, which can directly inhibit and kill HP. Traditional Chinese medicine treatment can improve the clinical symptoms and quality of life of patients with HP infection.

The results of this study showed that the cure rate of standard anti HP quadruple therapy in the treatment of HP infectious gastritis with spleen deficiency and dampness stagnation was 83.17%, while the cure rate of Traditional Chinese medicine Jianpi Qushi powder combined with standard anti HP quadruple therapy in the treatment of HP infectious gastritis with spleen deficiency and dampness stagnation was 92.62%; the cure rates of the two groups were compared, $\chi 2 = 4.7955$, $P = 0.0285$, the difference was statistically significant ($P < 0.05$), which showed that Traditional Chinese medicine Jianpi Qushi powder combined with standard anti HP quadruple therapy was superior to standard anti HP quadruple therapy in the treatment of HP infectious gastritis with spleen deficiency and dampness stagnation.

5. CONCLUSION

Traditional Chinese medicine Jianpi Qushi powder combined with standard anti HP quadruple therapy in the treatment of HP infectious gastritis of spleen deficiency and dampness stagnation type is one of the best treatment schemes for HP infection. The results of this study achieve the best clinical treatment effect, and provide a more valuable and reliable method for the treatment of gastropathy in clinical internal medicine, which is worthy of popularization and application. This study provides an effective scientific basis for clinical practice, so as to reduce patients' pain, reasonably select antibiotics, reduce complications, reduce patients' economic burden, promote the development of traditional Chinese medicine, and then produce indirect economic and social benefits.

6. LIMITATIONS OF THE STUDY

The selected case area of this study is narrow, and the results can not represent all regions. It is necessary to further expand the research scope and select cases from different regions for research, so as to obtain more representative research results.

ACKNOWLEDGEMENTS

During the process of this topic research, we got much help from many departments and individuals, and other personnel not involved in this project research. All of them offered a great support and help in this research. Now here, all of members in this research show our deepest appreciation to them, and wish them good health and everything goes well.

FUNDING

Guangxi Zhuang Autonomous Region Traditional Chinese Medicine Bureau Self-Funded Scientific Research Project (NO.: GZZC2019157).

CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding the publication of this paper.

REFERENCES

1. Cui, C.C., Li, C.F. and Zhang, B. (2017) Research Status and Progress of Treatment Schemes for *Helicobacter pylori* Infection. *Journal of Jilin University* (*Medical Edition*), **43**, 1287-1290.
2. Technische Universität München, max-planck-gesellschaft zur förderung der wissenschaften e.v. *Helicobacter pylori* Vaccines: World Patent Organization, WO2017102779(A1). 2017-06-22.
3. Boltin, D. and Shirin, H. (2019) Summary of the Israel Gastroenterology Association (Iga) Guidelines for the Management and Treatment of Helicobacter Pylori in 2019. *Harefuah*, **158**, 398-403.
4. Univ nat taiwa. Composition for the Prevention and the Treatment of *Helicobacter pylori* Infection: US, US2010298244(A1). 2010-11-25.
5. Shiota, S. and Yamaoka, Y. (2014) Strategy for the Treatment of *Helicobacter pylori* Infection. *Current Pharmaceutical Design*, **20**, 4489-4500. https://doi.org/10.2174/1381612811319666073 1
6. Compagnie gervais danone. Streptococcus Thermophilus Strains for Treating *Helicobacter pylori* Infection: World Patent Organization, WO2014064488(A1). 2014-05-01.
7. Shionogi & Co Ltd. Vaccine Composition for Infection of *Helicobacter pylori*: Japan, JP2000083671. 2000-03-28.
8. Harris, A. (2001) Treatment of *Helicobacter pylori*. *World Journal of Gastroenterology* (*English Version*), **7**,

303-307. https://doi.org/10.3748/wjg.v7.i3.303

9. Chiron corp, chiron corporation. *Helicobacter pylori* Diagnostics: Canada, CA2270163(A1). 1998-06-25.
10. Karolinska inst innovations abjonsson ann-bethwehelie rahm. Compounds, Medicaments and Methods of Treatment for *Helicobacter pylori* Infection. World Patent Organization, WO2011139226(A1). 2011-11-10.
11. Kimura ken (jp), kaken pharma co Ltd (JP). Composition for the Treatment of *Helicobacter pylori* Infection: US, US5618564. 1997-04-08.
12. Go, M.F. and Fennerty, M.B. (1998) Treatment of *Helicobacter pylori* Infection. *Current Opinion in Gastroenterology*, **14**, 64-69. https://doi.org/10.1097/00001574-199801000-00012
13. Coton, T., Debonne, J.-M., Guisset, M., *et al.* (1997) L'infection a *Helicobacter pylori* dans les pays en developpement. *Medecine Tropicale*, **57**, 77-82.
14. Academia Sinica. Compositions and Assays for Treatment and Diagnosis of *Helicobacter pylori* Infection and Conditions: US, US8785402(B2). 2014-07-22.
15. Chey, W.D., Leontiadis, G.I., Howden, C.W., *et al.* (2017) ACG Clinical Guideline: Treatment of *Helicobacter pylori* Infection. *The American Journal of Gastroenterology*, **112**, 212-239. https://doi.org/10.1038/ajg.2016.563
16. O'Connor, A., O'Morain, C.A. and Ford, A.C. (2017) Population Screening and Treatment of *Helicobacter pylori* Infection. *Nature Reviews. Gastroenterology & Hepatology*, **14**, 230-240. https://doi.org/10.1038/nrgastro.2016.195
17. RedHill Biopharma Ltd. Pharmaceutical Compositions for the Treatment of *Helicobacter pylori*: US, US2017189341(A1). 2017-07-06.
18. Tongtawee, T. and Wattanawongdon Wareeporn, S. (2019) Effects of Periodontal Therapy on Eradication and Recurrence of *Helicobacter pylori* Infection after Successful Treatment. *Journal of International Medical Research*, **47**, 875-883. https://doi.org/10.1177/0300060518816158
19. Dong, H., Jin, S.-L. and Miao, D.-L. (2017) Interpretation of ACG Clinical Guideline: Treatment of *Helicobacter pylori* Infection (Version 2017). *International Journal of Translational Medicine* (*English Version*), **5**, 160-166.
20. Ranjbar, R., Behzadi, P. and Farshad, S. (2017) Advances in Diagnosis and Treatment of *Helicobacter pylori* Infection. *Acta Microbiologica et Immunologica Hungarica*, **64**, 273-292. https://doi.org/10.1177/0300060518816158
21. Okuda, M., Kikuchi, S., Mabe, K., *et al.* (2017) Nationwide Survey of *Helicobacter pylori* Treatment for Children and Adolescents in Japan. *Pediatrics International*, **59**, 57-61. https://doi.org/10.1111/ped.13038
22. Zhang, Y., Sun, H., Zhao, H.L., *et al.* (2017) Early Apoptosis of Monocytes Induced by *Helicobacter pylori* Infection through Multiple Pathways. *Developmental and Comparative Immunology*: *Ontogeny*, *Phylogeny*, *Aging*, **73**, 46-51. https://doi.org/10.1016/j.dci.2017.03.010
23. Ribichini, D., Castelli, V., Pasquali, R., *et al.* (2017) Tablet and Oral Liquid L-Thyroxine Formulation in the Treatment of Na < Ve Hypothyroid Patients with *Helicobacter pylori* Infection. *Endocrine*, **57**, 394-401. https://doi.org/10.1007/s12020-016-1167-3
24. Karolinska Inst Innovations A. Compounds, Medicaments and Methods of Treatment for *Helicobacter pylori* Infection: European Patent Office, EP2566498(A1). 2013-03-13.
25. Ma, H., Gao, H., Huang, Y.B., *et al.* (2017) Therapeutic Effect of Compound *Lactobacillus acidophilus* Combined with Conventional Quadruple Therapy on Peptic Ulcer Infected by *Helicobacter pylori*. *Chinese Journal of Nosocomial Infection*, **27**, 2932-2934, 2946.