

# Research Progress of Jianpi Qushi Powder Combined with Standard Anti Hp Quadruple Therapy in the Treatment of Hp Infectious Gastritis with Spleen Deficiency and Dampness Stagnation

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## Abstract

Stomach *Helicobacter pylori* infection is one of the common gastric diseases. *Helicobacter pylori* infectious gastritis of spleen deficiency and dampness stagnation is a relatively intractable chronic disease. In recent years, traditional Chinese medicine methods have emerged one after another in the treatment of gastric *Helicobacter pylori* infection. By collecting references, the author reviewed the clinical characteristics of gastric *Helicobacter pylori* infection and the new progress of traditional Chinese medicine treatment.

## Keywords

Traditional Chinese Medicine Jianpi Qushi Powder, Quadruple Therapy, Spleen Deficiency Dampness Stagnation Type, *Helicobacter Pylori*, Infection, Gastritis

## 1. Introduction

*Helicobacter pylori* (Hp) is an important pathogenic bacterium, which was first discovered in 1982. Research results showed that this bacterium could not only cause gastritis and gastric ulcer, but also was closely related to MALT lymphoma

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and gastric cancer. It is the only bacterial pathogen that has been confirmed by WHO to be related to human tumorigenesis. Recent research results also found that Hp also has a high correlation with cardiovascular diseases such as human coronary heart disease. Hp infection is a global problem, 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, the infection rate of the general population is about 50% - 80%, and it increases at a rate of 1% - 2% every year. A survey of the general population in areas with high incidence of gastric cancer shows that the prevalence of Hp is 63.4% [1] [2] [3] [4] [5]. It can be seen that Hp is one of the pathogenic bacteria with high infection rate, and it has a global epidemic trend; however, there are significant differences in infection rates around the world. Hp can infect people of different ages, and the infection rate varies in different countries and regions due to differences in economic level and living habits. China is one of the countries with high Hp infection rate and gastric cancer incidence. Hp infection is not only a clinical problem to be solved, but also a major concern of health management. How to formulate a treatment plan for Hp infection is very important for the prevention and treatment of Hp-related diseases in China. The literature is now collected and reviewed as follows.

## 2. Research Status of *Helicobacter pylori* Infection at Home and Abroad

Since the discovery of *Helicobacter pylori* (Hp), a large number of studies at home and abroad have shown [6] [7] [8] that *Helicobacter pylori* is the main cause of chronic active gastritis and peptic ulcer infection. *Helicobacter pylori* infection is also associated with gastric lymphoma, gastric cancer and dyspepsia. The World Health Organization Agency for Research on Cancer (IARC) defined *Helicobacter pylori* as a class I carcinogen in 1994. Multinational health departments take *Helicobacter pylori* eradication as a guideline for preventing gastric cancer.

*Helicobacter pylori* infection is a global problem [9] [10], and it is estimated that more than 50% of the global population is infected. Hp infection rate is 30% - 50% in developed countries and about 80% in developing countries. 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 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.

### 3. Clinical Diagnosis and Treatment Mechanism of Gastric *Helicobacter pylori* Infection at Home and Abroad

A large number of studies and clinical treatment practices at home and abroad show that [11] [12] [13] [14] [15] 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  $\leq 4.5$  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 *et al.* believed that Hp urea channel ure I could absorb urea from the extracellular, and contribute to the decomposition of intracellular urease into ammonia ( $\text{NH}_3$ ) and carbon dioxide ( $\text{CO}_2$ ). The “ammonia cloud” formed by ammonia ( $\text{NH}_3$ ) created a “comfortable” environment with low oxygen and weak acid for Hp colonization, which was the necessary molecule for Hp colonization. However, the immunological properties of ureI and whether it can be used as a drug target to prevent Hp infection have not been further reported.

At present, from the current situation of clinical treatment of Hp, the conventional treatment of Hp infection is the use of antibiotics or combined antibiotics. Although this medical measure of broad-spectrum antibiotic treatment has a certain effect on the individual elimination of Hp, this treatment is easy to cause flora disorder and the production of drug-resistant strains in the human body, and is not conducive to the prevention and treatment of Hp in the stomach and natural environment. Although PPI (Proton Pump Inhibitor) treatment can inhibit gastric acid secretion, as the pH value of gastric environment rises; it creates a neutral environment for Hp colonization in the stomach, which is conducive to the increase of Hp quantity. Starting from the molecular role and biochemical mechanism involved in the physiological metabolism of Hp, the immune technology is used to block the urea membrane channel of Hp, so as to block the biochemical reaction of urease decomposing urea. At the same time, the urease B subunit of Hp is used as the target to eliminate the activity of decomposing urea in the extracellular cells of Hp, so that Hp cannot resist the acid environment of the stomach and lead to death or non-colonization. This multi-target fusion design using the key molecules of Hp colonization achieves the purpose of both preventing and treating Hp infection, and avoids the clinical shortcomings of antibiotics and PPI reagents in the prevention and treatment of Hp; this combined application of multi gene and multi-target dominant antigen epitopes is an ideal method for the prevention and treatment of Hp [16] [17] [18] [19] [20]. Clinically, standard bismuth quadruple therapy [21] [22] [23], standard quadruple therapy: Pantoprazole capsules 40 mg Qd, amoxicillin capsules 1.0 g, Bid, clarithromycin tablets 0.5 g Bid, bismuth potassium citrate tablets 0.6 g Bid, 14 days as a course of treatment. At the same time, breath test and gastroscopy are performed in the two groups before treatment and 4 weeks after

treatment, and the clinical symptom score, ulcer area, efficacy evaluation and incidence of adverse reactions are statistically analyzed.

#### 4. Current Status of Traditional Chinese Medicine Treatment of Gastric *Helicobacter pylori* Infection

According to Chinese medicine, *Helicobacter pylori* belongs to the category of “evil qi”, “where the evil qi gathers, its qi must be deficient”, “the righteous qi is stored, the evil cannot dry”, and strengthening the righteousness 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. “Syndrome” is not only a bridge between the basis of traditional Chinese medicine and clinical treatment, but also an important link in the treatment of traditional Chinese medicine.

Syndrome differentiation and treatment is an individualized treatment based on personal signs, that is, according to the characteristics of tongue coating, symptoms, signs and pulse of each patient, use the four diagnosis and reference to determine the disease type of traditional Chinese medicine, and then give different prescriptions for treatment according to different diseases.

The latest treatment of Hp infection mainly refers to the rational application of non antibiotic drugs such as mucosal protectants, probiotics and traditional Chinese medicine in the treatment of Hp infection related diseases. Studies have shown that [24] [25], traditional Chinese medicine has a good effect in the treatment of Hp infection related diseases, and has a broad prospect of clinical application. According to the current clinical research, the drugs with good effect on the treatment of Hp infection related diseases include Wenweishu, Jinghuaweikang, Yangweishu, moluodan, Weifuchun, etc. These traditional Chinese medicines not only have good clinical efficacy, but also some probiotics such as lactobacillus, *Saccharomyces bradleyi*, as well as mucosal protectants combined with standard triple or quadruple combination including antibiotics can improve the eradication rate of Hp and reduce adverse reactions during treatment. 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.

## 5. Summary and Prospect

In conclusion, with the extensive drug treatment of Hp infection, drug resistance is increasing, and the probability of eradicating Hp is also decreasing year by year. The treatment of *Helicobacter pylori* infection is facing great challenges. 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, and the side effects have been increasing, and a few patients have repeated attacks. The treatment of Hp has entered a difficult period. Exploring the treatment of Hp infection with Traditional Chinese medicine has become a new idea for many domestic researchers. In recent years, some scholars and research institutions in China have also studied the treatment plan of traditional Chinese medicine, and have achieved certain breakthroughs with exact curative effects, which have been well received by the majority of patients. 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, hoping to achieve better research results.

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## Conflicts of Interest

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

## References

- [1] Kimura, K., Taniguchi, Y., Satoh, K., *et al.* (1997) Composition for the Treatment of *Helicobacter pylori* Infection. Kaken Pharmaceutical Co Ltd., US5618564A.
- [2] Technische Universität München and Max-Planck-Gesellschaft zur Förderung der Wissenschaften E.V. (2017) *Helicobacter pylori* Vaccines. World Patent Organization, WO2017102779A1.
- [3] Abadi, A. (2015) *Helicobacter pylori* and Gastric Cancer: Clinical Aspects. *Chinese*

- Journal of Medicine (English Version)*, **128**, 3101-3105.  
<https://doi.org/10.4103/0366-6999.169107>
- [4] Yang, J.C., Shun, C.T., Chien, C.T. and Wang T.H. (2010) Composition for the Prevention and the Treatment of *Helicobacter pylori* Infection. National Taiwan University, US2010298244A1.
  - [5] Shiota, S. and Yamaoka, Y. (2014) Strategy for the Treatment of *Helicobacter pylori* Infection. *Current Pharmaceutical Design*, **20**, 4489-4500.
  - [6] Garault, P., Bourdet-Sicard, R. and Megraud, F. (2014) *Streptococcus thermophilus* Strains for Treating *Helicobacter pylori* Infection. World Patent Organization, WO2014064488A1.
  - [7] SHIONOGI & Co Ltd. (2000) Vaccine Composition for Infection of *Helicobacter pylori*. Shionogi & Co Ltd., JP2000083671.
  - [8] Harris, A. (2001) Treatment of *Helicobacter pylori*. *World Journal of Gastroenterology*, **7**, 303-307.
  - [9] CHIRON Corporation. (1998) *Helicobacter pylori* Diagnostics. Chiron Corporation, CA2270163A1.
  - [10] Jonsson, A.B. and Wehelie, R. (2011) Compounds, Medicaments and Methods of Treatment for *Helicobacter pylori* Infection. World Patent Organization, WO2011139226A1.
  - [11] Jonsson, A.B. and Wehelie, R. (2013) Compounds, Medicaments and Methods of Treatment for *Helicobacter pylori* Infection. European Patent Office, EP2566498A1.
  - [12] Go, M.F. and Fennerty, M.B. (1998) Treatment of *Helicobacter pylori* Infection. *Current Opinion in Gastroenterology*, **14**, 64-69.
  - [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] Lin, C.H. and Liu, T.W. (2014) Compositions and Assays for Treatment and Diagnosis of *Helicobacter pylori* Infection and Conditions. US8785402B2.
  - [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.
  - [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.
  - [17] RedHill Biopharma Ltd. (2017) Pharmaceutical Compositions for the Treatment of *Helicobacter pylori*. Red Hill Biopharma Ltd., US2017189341A1.
  - [18] Tongtawee, T., Wattanawongdon, W. and Simawaranon, T. (2019) Effects of Periodontal Therapy on Eradication and Recurrence of *Helicobacter pylori* Infection after Successful Treatment. *Journal of International Medical Research*, **47**, 875-883.
  - [19] Ranjbar, R., Behzadi, P. and Farshad, S. (2017) Advances in Diagnosis and Treatment of *Helicobacter pylori* Infection. *Acta Microbiologica et Immunologica Hungarica: A Quarterly of the Hungarian Academy of Sciences*, **64**, 273-292.
  - [20] 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*, **5**, 160-166.
  - [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.

- [22] Zhang, Y., Sun, H., Zhao, H.L., *et al.* (2017) Early Apoptosis of Monocytes Induced by *Helicobacter pylori* Infection through Multiple Pathways. *Developmental & Comparative Immunology*, **73**, 46-51.
- [23] Ribichini, D., Castelli, V., Pasquali, R., *et al.* (2017) Tablet and Oral Liquid L-Thyroxine Formulation in the Treatment of Naïve Hypothyroid Patients with *Helicobacter pylori* Infection. *Endocrine*, **57**, 394-401.
- [24] Ma, H., Gao, H., Huang, Y.B., *et al.* (2017) Efficacy Observation of Compound *Lactobacillus acidophilus* Combined with Conventional Quadruple Therapy in the Treatment of Peptic Ulcer Infected with *Helicobacter pylori*. *Chinese Journal of Hospital Infectious Diseases*, **27**, 2932-2934, 2946.
- [25] Cui, C.C., Li, C.F. and Zhang, B. (2017) Research Status and Progress of Treatment Regimens for *Helicobacter pylori* Infection. *Journal of Jilin University (Medical Edition)*, **43**, 1287-1290.