

## Study on the Status of Helicobacter Pylori Treatment

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**Abstract:** The reduction in the eradication rate of triple therapy has led to a certain change in H. pylori treatment methods. More professionals have begun to invest in H. pylori treatment research and want to explore a treatment strategy that can effectively eradicate H. pylori. . Understanding the current status of H. pylori treatment will help to explore an effective H. pylori eradication method with high safety, low drug resistance rate, low relapse rate and low price. This article mainly describes the pathogenesis of H. pylori and the current status of treatment. It also introduces quadruple therapy, combination of traditional Chinese and Western medicine, and sequential method in addition to triple therapy. It is hoped that it will have some reference for the further improvement of H. pylori eradication therapy. .

Helicobacter pylori (helicobacter pylori, H. pylori) belong to a class of microaerophilic Helicobacter pylori. It is one of the main survival carriers of H. pylori in human gastric mucosa [1], and it is also a relatively common one in human infectious diseases. Species have an infection rate of about 50% worldwide. The infection rate of H. pylori is directly related to people's living standards and quality of life. The higher the living standard and quality of life, the lower the infection rate, so in general, The H. pylori infection rate in developing countries is higher than in developed countries. Children may acquire H. pylori infection early in their growth, mainly spread by feces or mouth. Once infected, they may parasitize the infected person for life. Most infections are asymptomatic, but it increases the digestion of infected persons. The probability of sexual ulcers, chronic atrophic gastritis, gastric adenocarcinoma and other diseases. At present, there are many types of antibiotics specifically used for the treatment of H. pylori. The gradual increase of antibiotic resistance makes the clinical treatment effect of antibiotics less obvious. Therefore, investing a certain amount of material resources and manpower in the research of H. pylori treatment has certain practical significance.

### 1. Pathogenesis and Treatment Status of Helicobacter Pylori

#### (1) Pathogenesis

After the human stomach is infected with H. pylori, H. pylori will reach the mucus layer through the flagella on one side of the human body, and then spread to the epithelial surface. Adhesin will allow it to adhere tightly to the epithelial cells. The reason why neutrophils are not killed H. pylori is because it is protected by secreted peroxides such as dismutase and hydrogenase. The urease contained in H. pylori will produce ammonia after hydrolysis, which can protect it from gastric acid damage. Inflammatory metabolites are produced in the gastric antrum mucosa because patients with H. pylori secrete excess gastric acid. The mucosal barrier and duodenal metaplasia have changed due to the nature of inflammatory metabolites, which ultimately lead to diseases such as gastric ulcer and gastric cancer [2]. Therefore, effective treatment of gastrointestinal diseases requires the selection of treatments that can eradicate H. pylori.

#### (2) Current status of treatment

Amoxicillin or metronidazole, clarithromycin, proton pump inhibitor triple therapy is commonly used in clinical treatment of H. pylori, a course of treatment is usually 14 days. However, the eradication rate of H. pylori decreases with the increase of antibiotic resistance, especially the

improvement of clarithromycin resistance in triple therapy. If proton pump inhibitors are used for a long time to treat *H. pylori*, patients may develop hypergastrinemia, and in severe cases, gastric cancer may occur [3]. If the double resistance rate of metronidazole and clarithromycin is more than 15%, bismuth quadruple therapy can be applied in this area. The resistance rate of metronidazole in China exceeds 60%, and the resistance rate of clarithromycin is 20% To 40% [4]. The quadruple therapy including bismuth is a widely used therapy in clinical practice, and the eradication rate of *H. pylori* can reach about 90%. In addition, combined Chinese and Western medicine therapy, sequential therapy, etc. are currently more effective ways to increase the eradication rate of *H. pylori*.

## **2. Second, the treatment of *Helicobacter pylori***

### **(1) Quad therapy with bismuth**

Many scholars at home and abroad have explored the method of bismuth-containing quadruple treatment of *H. pylori*, and the results show that this method has a good effect on *H. pylori* eradication. Foreign scholars Malfertheiner and other 39 patients from European medical institutions were selected as the research objects, taking 10 days of triple therapy of omeprazole, clarithromycin and amoxicillin and taking 10 days of tetracycline, metronidazole and bismuth citrate. The comparison of potassium and omeprazole quadruple therapy showed that the eradication rates of *H. pylori* by the triple therapy and quadruple therapy were 70% and 93%, respectively,  $P < 0.05$  [5]. Chinese scholar Zheng et al. also chose the above triple and quadruple methods to treat patients with dyspepsia. The clinical efficacy results show that the triple and quadruple therapies have eradication rates of *H. pylori* of 65.1% and 91.6%,  $P < 0.05$  [6]. Foreign scholars selected patients with unsuccessful initial treatment as their research objects and divided them into two groups, using omeprazole, clarithromycin, amoxicillin, bismuth quadruple therapy and ofloxacin, azithromycin, bismuth Agent, omeprazole quadruple therapy for a course of 14 days, the results showed that: the former eradication rate of *H. pylori* (74.7%) is less than the latter (86.7%),  $P < 0.05$  [7]. The studies of these scholars have shown that quadruple therapy is a better treatment for *H. pylori*. If the patient's initial treatment is unsuccessful, he can choose bismuth quadruple therapy including ofloxacin as a complementary treatment plan.

### **(2) Integrated Chinese and Western medicine therapy**

Western medicine may cause many adverse reactions in the treatment of *H. pylori* infection. The drug resistance of patients will gradually increase due to the time course of taking Western medicine, which reduces the clinical treatment effect. In recent years, clinical trials of integrated traditional Chinese and Western medicine have begun to be tried, and the effect is more obvious. For example, choosing a Chinese medicine composed of *Salvia miltiorrhiza*, *Houttuynia cordata*, *Astragalus*, *Coptis chinensis*, and *Huang Cen* and taking a proton pump inhibitor at the same time can significantly increase the gastric acid value of the patient, thereby enhancing its sterilization ability. In addition, acupuncture therapy is also used clinically. In order to suppress the secretion of gastric acid in patients, local acupoints are stimulated by acupuncture to increase gastric acid value while reducing the gastric acid environment. The combination of Chinese and Western medicine has fewer side effects and can improve patient compliance.

### **(3) Sequential therapy**

Sequential therapy is proposed to solve the problem of reducing the eradication rate of triple therapy *H. pylori*. It is treated with esomeprazole, amoxicillin, clarithromycin, tinidazole and other drugs for 10 days. It is called sequential therapy. . The reason why *H. pylori*'s resistance to clarithromycin gradually increases is because it can produce a clarithromycin pump out channel to expel the drug, but the penicillin, amoxicillin and protein in the *H. pylori* envelope are combined , Can destroy the *H. pylori* cell wall, and then achieve the purpose of treating *H. pylori*. In the first five days of treatment, amoxicillin and proton pump inhibitors can be used to eradicate *H. pylori* and

prevent the formation of drug-resistant strains. The next five days can be composed of clarithromycin, tinidazole and proton pump inhibitors. Triple therapy to eradicate H. pylori residue more deeply.

## Conclusion

The effective treatment of gastrointestinal diseases focuses on the eradication of H. pylori, because H.pylori is a major gastrointestinal pathogen. At present, the drug resistance and recurrence of the widely used triple therapy are gradually increasing. The H. pylori eradication rate of the triple therapy used in many regions of the world is less than 80%, and the patient's compliance is not high, which is not in line with patients. Expectations and needs. Based on this, quadruple therapy, integrated traditional Chinese and western medicine, and sequential therapy are gradually proposed and applied to the clinic, but the long-term use of these therapies may also cause the problem of triple therapy, and medical workers should also consider the medication used in the therapy Safety. H. pylori eradication rate, patient tolerance, relapse rate, etc. should be considered when selecting a specific H. pylori therapy. In addition, whether the therapy is economically feasible should also be considered. Several current treatments in the clinic still have their own shortcomings, so there is still a long way to go to explore H. pylori therapy in the future.

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