

Relationship between differentiation syndromes in stomach disease and *Helicobacter pylori*

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Author contributions: All authors contributed equally to the work.

Original title: *China National Journal of New Gastroenterology* (1995-1997) renamed *World Journal of Gastroenterology* (1998-).

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Received: February 27, 1996
Revised: April 26, 1996
Accepted: May 20, 1996
Published online: June 25, 1996

Abstract

AIM: To demonstrate the relationship between *Helicobacter pylori* (Hp) infection and differentiation syndromes in stomach diseases.

METHODS: Prospectively, 317 patients with stomach disease were randomly selected for study recruitment. All patients were diagnosed endoscopically and the diagnosis was confirmed by biopsy. All cases were classified according to the syndromes of traditional Chinese medicine (TCM) at the same time.

RESULTS: There were 213 cases with Hp (+) and 104 cases with Hp (-). Among the groups classified according to syndromes of TCM, the Hp (+) rate in syndrome of stagnation of qi and heat was highest (76.8%), while the pure asthenic cold was lowest (57.5%). Most of the Hp (+) cases (52.7%) had incoordination of liver and stomach. Less patients suffered from pure asthenic cold in the Hp (+) group than in the Hp (-) group (19.7% vs 29.8%, $P < 0.05$). The incidence of stomachache in the Hp (+) group was 80.0%, which was higher than that in the Hp (-) group (70.6%) ($P < 0.05$).

CONCLUSION: Hp infection may be one of the objective indexes for syndrome of stagnation of qi and heat. Heat allaying medicine can be used to treat the syndrome clinically.

Key words: Stomach disease; differentiation-treatment; *Helicobacter pylori*; Zheng; *Helicobacter* infections

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Shan ZW, Shen H, Zhang MJ, Xu JG. Relationship between differentiation syndromes in stomach disease and *Helicobacter pylori*. *World J Gastroenterol* 1996; 2(2): 73-75 Available from: URL: <http://www.wjgnet.com/1007-9327/full/>

v2/i2/73.htm DOI: <http://dx.doi.org/10.3748/wjg.v2.i2.73>

INTRODUCTION

In recent years, more attention has been paid to the relation between *Helicobacter pylori* (Hp) and gastritis and peptic ulcers. It has become one of the hot-points to eliminate Hp by traditional Chinese medicine (TCM). In order to provide valuable references for clinical treatment, we summarize herein the relationship between the differentiation of syndromes in stomach disease and Hp.

MATERIALS AND METHODS

Subjects

Of 317 cases enrolled in the study, 182 were male and 135 were female. Fifty-seven of the participants were < 30 years-old, 82 cases were 31-40 years-old, 60 cases were 41-50 years-old, 69 cases were 51-60 years-old, and 49 cases were over 61 years-old. Seventy-seven cases had a course of illness < 1 year, 83 cases had 1-5 years, 78 cases had 6-10 years, and 79 cases had > 10 years. The histories of patients with stomach disease were recorded and the patients were then classified into different groups according to the four diagnostic methods of TCM, prior to the endoscopy and biopsy being performed for pathologic diagnoses. Hp was detected using basic fuchsin staining and the urease test.

Classification according to differentiation of syndromes

Incoordination of liver and stomach: The clinical manifestations were stomach ache related to hypochondrium, acid regurgitation, frequent belching, preference for sighing, white or yellow and thin fur on tongue, and taut and slippery pulse.

Asthenic cold syndromes of spleen and stomach: This type is characterized by dull stomachache, preference of warmth and pressing, pain which can be relieved by food or worsened when hungry, intolerance of coldness, cold extremities, fatigue, loose stool, pale tongue with white and thin fur on tongue, and deep and feeble pulse.

Deficiency of stomach-yin: This type is characterized by dull and burning stomachache, dry mouth but unwilling to drink, poor appetite, feverish sensation in the palms and soles, dry stool, red tongue with little liquid, little fur or exfoliative fur on tongue, and thready pulse.

In order to advance the research, the group of incoordination of liver and stomach was divided into the following three subgroups according to secondary syndromes: pure stagnation of qi; combined stagnancy of heat; combined blood stasis. The group of asthenic cold syndrome of spleen and stomach was divided into the following two subgroups: pure asthenic cold; deficiency of middle-warm and stagnation of qi. The data obtained were classified into two groups

Table 1 Relationship between differentiation of syndromes in stomach disease and *Helicobacter pylori* infection

Classification	Rate of Hp (+), %	Hp (+)		Hp (-)	
		<i>n</i>	%	<i>n</i>	%
Ia	63.3	57	26.8	33	31.7
Ib	76.8	43	20.2	13	12.5
Ic	73.3	11	5.2	4	3.9
IIa	57.5	42	19.7	31	29.8
IIb	73.2	52	24.4	19	18.3
III	66.7	8	3.8	4	3.9

I: Incoordination of liver and stomach; Ia: Pure stagnation of qi; Ib: Stagnancy of heat; Ic: Blood stasis; II: Asthenic cold of spleen and stomach; IIa: Pure asthenic cold; IIb: Deficiency of middle-jiao and stagnation of qi; III: Deficiency of stomach-yin; Hp: *Helicobacter pylori*.

Table 2 Relationship between tongue characteristics and *Helicobacter pylori* in stomach disease

Characteristic	Hp (+), %	Hp(-), %
Pink	48.6	56.2
Red	29.9	24.8
Dark red	11.2	10.5
Enlarged and tender with teeth prints	6.5	6.7
Fissured	3.7	1.9

Hp: *Helicobacter pylori*.

Table 3 Incidence rate of different symptoms in stomach disease related to *Helicobacter pylori*

Symptoms	Group	
	Hp (+)	Hp (-)
Stomachache	80.0	70.5
Distension	64.8	57.7
Belching	63.8	64.1
Dry stool	44.8	25.0
Loose stool	36.2	53.6
Black stool	21.1	15.4
Acid regurgitation	27.1	23.1
Poor appetite	44.6	41.3

Hp: *Helicobacter pylori*.

(Hp positive and Hp negative), for analysis and comparison of the different types in Hp positive or negative groups.

RESULTS

Endoscopy and Hp

Three-hundred-and-five patients were diagnosed according to Western medicine as chronic gastritis, along with 44 cases of peptic ulcer, 5 cases of gastric cancer and 5 cases of other stomach diseases. There were 213 cases with Hp positivity (+) and 104 cases with Hp negativity (-), for a ratio of 2:1. In the Hp (+) group, active gastritis and ulcer were very common (106 cases or 75.1%), while in the Hp (-) group there were only 23 cases, comprising 22.0%.

Classification according to differentiation of syndromes in TCM

Among the various groups, the Hp (+) rate in syndrome of stagnation of qi and heat was highest (76.8%), and the next highest was the stagnation of qi and blood or hypofunction of middle-jiao and stagnation of qi. But there was no statistical significance for these comparisons ($P > 0.05$). The ratio of Hp (+) with pure asthenic cold was lowest (57.5%). In comparison of the constituents of Hp (+) and Hp(-), 52.1% of the Hp (+) group had incoordination of liver and stomach. While in the Hp (-) group, the percentage of incoordination of liver and stomach and of asthenic cold of spleen and stomach was 48.1%, respectively. More patients suffered from stagnation of qi and heat in the Hp (+) group (20.0%) than in the Hp (-) group (12.5%), but less patients suffered from pure asthenic cold in the Hp (+) group (19.7%) than in the Hp (-) group (29.8%). In these comparisons, there were statistically significant differences

(Table 1, $P > 0.05$).

Inspection of tongue

Color of the tongue: The proportion of red tongue in Hp (+) was higher than in Hp (-), while the pink tongue was on the contrary (Table 2).

Tongue coating: Yellow fur on the tongue was most common in the Hp (+) group, accounting for 47.2%. While in the Hp (-) group, the presence of white thin fur accounted for 47.3%. The rate of yellow and greasy fur was 18.1% for the Hp (+) group, which was far higher than that for the Hp (-) group ($P < 0.05$).

Pulse

A taut or slippery pulse was common in the Hp (+) group, accounting for 52.0%, which was far higher than that of the Hp (-) group (36.4%). The difference was statistically significant ($P < 0.001$). Thready, small and deep pulse (61.4%) was found in a large proportion of the Hp (-) group, which was significantly higher than that in the Hp (+) group (39.2%) ($P < 0.05$).

Analyses of symptoms (Table 3)

Stomachache: The incidence of stomachache in the Hp (+) group was 80.0%, which was higher than that in the Hp (-) group (70.6%); the difference was highly significant ($P < 0.05$). There was dull pain reported in both groups, but the incidence rates of burning pain, stabbing pain or colic were higher in the Hp (+) group than in the Hp (-) group.

Abdominal distension: The incidence rate of this symptom in the Hp (+) group was 64.8% and 57.7% in the Hp (-) group. The distension due to stagnation of qi was common in the Hp (+) group, accounting for 74.0%, and the incidence was higher than that of deficiency of stomach-yin or insufficiency of spleen (62.0% or 54.0% respectively).

Belching: There was no significant difference between the Hp (+) and Hp (-) groups. In the Hp (+) group, the incidence rate of belching due to stagnation of qi (65.0%) was slightly higher than to insufficiency of spleen and deficiency of stomach-yin (62.0%).

Abnormalities of stool: Many more patients suffered from dry stool in the Hp (+) group than in the Hp (-) group (44.8% vs 25.0%). On the contrary, in the Hp (+) group, less patients had loose stool than in the Hp (-) group (36.2% vs 53.6%, $P < 0.05$).

Black stool (hemafecia): The frequency of this symptom was higher in the Hp (+) group (21.1%) than in the Hp (-) group (15.4%). In the Hp (+) group, the black stool incidence was high due to insufficiency of spleen or stagnation of qi (24.0% or 19.0%).

Acid regurgitation: The incidence of this symptom was 27.7% in the Hp (+) group and 23.1% in the Hp (-) group. In the Hp (+) group, incoordination of liver and stomach was most common, accounting for 74.0%.

Poor appetite: This symptom occurred in 44.6% of the Hp (+) group and in 41.3% of the Hp (-) group. In the Hp (+) group, the incidence of poor appetite in asthenic cold, incoordination of liver stomach and deficiency of stomach-yin groups was 47.0%, 41.0% and 30.0%, respectively.

DISCUSSION

Based on the pathological view of TCM, the vital energy is emphasized as a guiding position in disease development. Besides, the pathogenic factors also play an important role. As the "RUMEN SHI QIN" put it, "People didn't have the disease innately. Whether the disease comes exteriorly or interiorly, all were due to exogenous factors." We regard Hp infection as an important factor in developing stomach disease, which belongs to the pathogenic factor in the category of TCM.

Analyses of the relation between Hp infection and differentiation of syndromes of TCM were carried out in this study. Among the various groups, the Hp positive rate was highest in stagnation of qi and heat, and lowest in pure asthenic cold. In the Hp (+) group, most cases were due to stagnation of qi and heat, and the symptoms of red tongue, yellow tongue coating (especially showing

yellow and greasy fur), taut and slippery pulse, stomachache, abdominal distension, dry stool, black stool, acid regurgitation, and poor appetite were more common. On the contrary, the symptoms of pink tongue, white and thin fur, thready pulse, loose stool, and pale complexion were common in the Hp (-) group. These findings demonstrated that more patients with Hp (+) suffered from excessive syndrome, heat syndrome, syndrome mixed with excess and deficiency, and syndrome with deficiency of primary aspect and excess of secondary aspect due to their active gastritis, peptic ulcer and the inflammation which was relatively more serious than that observed in the patients with Hp (-). Moreover, these findings agree with the previous research results for stomach disease. That is, the acute, active gastritis may be the pathogenic basis of damp heat, stagnation of qi, and blood stasis syndromes. Stagnation of qi and blood stasis syndromes may be commensurate to the inflammation, while asthenic cold of spleen and stomach may be commensurate to the chronic stage or coalescent stage of acute inflammation. Etiologically, we think that Hp, the "pathogenic factor", invaded the

stomach and fought with the vital energy. It obstructed the qi and changed into heat or led to blood stasis. Along with the development of disease, the pathogenic factor would deplete the vital energy and promoted formation of the syndromes of mixture of excess and deficiency, deficiency of middle-jiao and stagnation of qi. If the vital energy was damaged, the asthenic cold of spleen syndrome would occur.

These findings collectively give insights into the treatment of patients with Hp (+). Since most of the patients who suffered from Hp were classified as having excessive heat, mixture of excess and deficiency of cold and heat, medicine (s) to allay heat and/or remove blood stasis should be prescribed to strengthen the patient's resistance and dispel the invading pathogenic factors. In this manner, the qi and blood can be regulated. Meanwhile, an herbal medicine that can inhibit or disinfect Hp should be selected according to an overall differentiation of syndromes and signs and according to disease conditions, so as to raise the therapeutic effect successfully.

S- Editor: Filipodia **L- Editor:** Jennifer **E- Editor:** Zhang FF



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ISSN 1007-9327

