

The Impact Factor of Colon Polyp

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ABSTRACT

Objective: To evaluate the relationship between *Helicobacter pylori* and colonic polyp.

Methods: The clinical data of 850 patients who underwent both colonoscopy and *Helicobacter pylori* check were collected in our hospital from January 2018 year to January 2019 year. Patients were divided into polyp group and control group. To analyze the *Helicobacter pylori* infection of two groups, and the relationship among *Helicobacter pylori* infection, eradication treatment and recurrence of colonic polyp. Further to analyze the impact factor of the recurrence of colonic polyp.

Results: There was no significant difference in sex and age aspects of two groups. Through SPSS software analysis, the infection rate of *Helicobacter pylori* was higher in polyp group than in control group. The recurrence rate of *Helicobacter pylori* positive patients were more higher than *Helicobacter pylori* negative patients. The recurrence

rate of *Helicobacter pylori* eradication group was lower than *Helicobacter pylori* no eradication group. The impact factor of the recurrence of colonic polyp include *Helicobacter pylori* infection, pathological type of polyp and the number of polyps.

Conclusion: The *Helicobacter pylori* infection rate of colonic polyp group were more higher. The impact factor of colonic polyp recurrence include *Helicobacter pylori* infection, pathological types of polyp and polyp number.

Keywords: *Helicobacter pylori*, Colonic polyp, Recurrence, Impact factor

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BACKGROUND

The polyp of large intestine is a kind of common digestive tract lesion, and a mass formed by the proliferation of the large intestine mucosa into the intestinal cavity. Pathologically, it can be divided into proliferative polyp, inflammatory polyp, adenomatous polyp, hamartoma polyp and so on. Hyperplastic polyps and inflammatory polyps generally have no cancerous tendency, adenomatous polyps and hamartomatous polyps have certain cancerous tendency. Recently, the incidence of colorectal cancer have decreased due to increased precancerous lesion screening and resection of early colorectal lesions (Siegel RL, *et al.*, 2017; Miller KD, *et al.*, 2016). The incidence of colorectal cancer is related to diet structure, environmental changes, genetic factors, oncogene imbalance and other factors, and there is no definite and effective prevention method at present. *Helicobacter pylori* is a class of gram-negative microaerobic bacteria. *Helicobacter pylori* is associated with peptic diseases such as gastritis and peptic ulcer. It is the first carcinogen of gastric cancer. In addition, *Helicobacter pylori* is also associated with iron deficiency anemia, idiopathic thrombocytopenic purpura, diabetes and other extragastric diseases. Studies have shown that *Helicobacter pylori* is associated with the risk of colorectal polyps (Mao Y, *et al.*, 2019; Brim H, *et al.*, 2014).

In this study, through compared *Helicobacter pylori* infection of large intestine polyp group with control group, and compared *Helicobacter pylori* infection of different pathological types of polyp and control group, we analyze the relationship between *Helicobacter pylori* and polyp of large intestine.

OBJECTS AND METHODS

Objects

The clinical data of 850 patients who underwent both colonoscopy and *Helicobacter pylori* check were collected in our hospital from January 2018 year to January 2019 year. Exclusion of ulcerative colitis, Crohn's disease, systemic lupus erythematosus, familial polyposis, familial cancer hereditary disease.

Material

Colonoscope, Olympus CF-H260AZI, Biopsy forceps, Nanjing minimally invasive Medical Technology Co. Ltd, Carbon 14 breath detector, Single endoscopic biopsy sampling needle, Elec-

tron microscope.

Methods

Colonoscopy: All colonoscopy achieved ileocecal site. All polyps were biopsied and sent to pathology during the examination.

Size of lesion: The criterion follow as maximum opening of biopsy forceps (about 0.6 cm) or maximum diameter of tissue after resection by measurement.

Groups and methods: Patients were divided into polyp group and control group. Normal colonoscopy was the control group. The colonic polyp as polyp group. To analyze the *Helicobacter pylori* infection of two groups, and the relationship among *Helicobacter pylori* infection, eradication treatment and recurrence of colonic polyp. Further to analyze the impact factor of the recurrence of colonic polyp.

- *Helicobacter pylori* tests are based on carbon 14 breath test and pathology.
- All patients were followed up for one year.

Statistical analysis

Data collected were analysed using SPSS17.0. The measurement data use t test. The count data use Chi square test. $P < 0.05$ was statistically significant.

RESULTS

Patient's clinical data

We collected the clinical data of 850 patients who underwent both colonoscopy and *Helicobacter pylori* in endoscopic room of our hospital from January 2018 year to January 2019 year. Among these patients, there were 420 males, 430 females. 304 patients were *Helicobacter pylori* positive, and 546 patients were *Helicobacter pylori* negative. Among *Helicobacter pylori* positive patients, there were 162 patients have *Helicobacter pylori* eradicated, and 142 patients have not eradicated. In control group, there were 213 patients who's age over 60 years, and 202 patients who's age less than 60 years. In polyp group, there were 220 patients who's age over 60 years, and 215 patients who's age less than 60 years. In Table 1, there were no significant difference in sex and age aspects of two groups.

The colonic polyp and *Helicobacter pylori* infection

The polyp group have 435 patients, in which there were 192 *Helicobacter pylori* positive patients, and 243 *Helicobacter pylori* negative patients. The percentage of *Helicobacter pylori* positive was 44.1% in polyp group. The control group have 415 patients, in which there were 112 *Helicobacter pylori* positive patients, and 303 *Helicobacter pylori* negative patients. The percentage of *Helicobacter pylori* positive was 36.9% in control group. Through SPSS software analysis, the infection rate of *Helicobacter pylori* was higher in polyp group, and there was significant difference. The results shown in Table 2.

The relationship among *Helicobacter pylori* infection, eradication treatment and recurrence of colonic polyp

Through SPSS software analysis, the recurrence rate of *Helicobacter pylori* positive patients were more higher than *Helicobacter pylori* negative

patients. The recurrence rate of *Helicobacter pylori* eradication group was lower than *Helicobacter pylori* no eradication group, and there was significant difference. The results shown in Table 3.

The impact factor of the recurrence of colonic polyp

Through SPSS software analysis, the impact factor of the recurrence of colonic polyp include *Helicobacter pylori* infection, pathological type of polyp and the number of polyps. There was significant difference. The recurrence rate of *Helicobacter pylori* positive, adenomatous polyps and multiple polyps were more higher. The results were shown in Table 4.

Table 1: The comparison of sex and age aspects between two groups

	Control group	Polyp group	Chi square	P value
Sex				
Male	205	215	0	0.994
Female	210	220		
Age				
>60 years	213	220	0.048	0.827
≤ 60 years	202	215		

Table 2: The *Helicobacter pylori* infection in two groups

	<i>Helicobacter pylori</i> positive	<i>Helicobacter pylori</i> negative	Chi square	P value
Control group	112	303	27.191	0
Polyp group	192	243		

Table 3: The relationship among *Helicobacter pylori* infection, eradication treatment and recurrence of colonic polyp

	Recurrence	Chi square	P value
HP infection			
Positive	158	26.552	0
Negative	185		
HP positive			
Eradication	75	13.034	0
No eradication	95		

Table 4: The impact factor of the recurrence of colonic polyp

	Recurrence	No recurrence	Chi square	P value
Sex male	205	215	0.286	0.593
Female	202	228		
Age ≤ 60 years	125	282	1.726	0.189
>60years	118	325		
Polyp size				
Diameter<1 cm	210	250	0.27	0.603
Diameter ≥ 1 cm	185	205		
<i>Helicobacter pylori</i>				
Positive	202	102	83.5	0
Negative	185	361		
Polyp site				
Ileocecus	62	77	0.701	0.983
Colon ascendens	53	68		
Colon transversum	75	86		
Colon descendens	65	72		
Colon sigmoideum	78	85		
Rectum	60	69		

Pathological type				
Inflammation polyp	92	150	6.913	0.032
Hyperplasia polyp	120	176		
Adenomatous polyp	152	162		
Number of polyps				
Single	182	268	28.394	0
Multiple	235	165		

DISCUSSION

With the popularization of colonoscopy, the detection rate of colorectal polyps increased gradually. The colonic polyps are precancerous lesions of colon carcinoma. The canceration rate of colonic polyps range from 1.4% to 9.2% (Azeem S, *et al.*, 2015). More than 80% of colonic cancers developed from colonic adenomas. The colonic adenomas have cancerous tendency. The incidence of colonic cancer decreased more than 75% after adenomatous polyp resection (Fu C and Peng T, 2015). Research shows that *Helicobacter pylori* infection have relationship with the development of colonic polyp (Kim TJ, *et al.*, 2017; Lee JY, *et al.*, 2016).

The infection rate of *Helicobacter pylori* in polyp group was higher in this study. The positive rate of *Helicobacter pylori* was 44.1% in polyp group, and 36.9% in control group, there was significant difference between polyp group and control group. Research shows that *Helicobacter pylori* infection have relationship with the recurrence of colonic polyp (Kim TJ, *et al.*, 2017; Lin Y, *et al.*, 2015). *Helicobacter pylori* eradication significantly reduces the risk of colonic polyp recurrence. This study found that the impact factor of colonic polyp recurrence include *Helicobacter pylori* infection, pathological types of polyp and polyp number. The colonic polyp recurrence rate of *Helicobacter pylori* positive patients was 66.4%, the *Helicobacter pylori* negative patients was 33.9%, inflammation polyp was 38%, hyperplasia polyp was 40.5%, adenoma polyp was 48.4%, single polyp was 40.4%, and multiple polyp was 58.7%. The recurrence rate of colonic polyp were more higher in *Helicobacter pylori* positive, adenoma polyp and multiple polyp group. In addition, the *Helicobacter pylori* eradication therapy drugs include amoxicillin, clarithromycin, proton pump inhibitor and colloidal bismuth pectin in our study (Zuniga R, *et al.*, 2015). Compared with *Helicobacter pylori* no eradication group, the recurrence rate of *Helicobacter pylori* eradication group was 31.6%, *Helicobacter pylori* no eradication group was 40.1%. It is indicated that the recurrence rate of *Helicobacter pylori* eradication group was more lower than *Helicobacter pylori* no eradication group. This shows that *Helicobacter pylori* eradication can significantly decrease the recurrent risk of colonic polyp, which indicated that *Helicobacter pylori* eradication may be the effective approaches to prevent the recurrence of colonic polyp (Zhan T, *et al.*, 2016; Inoue I, *et al.*, 2013).

CONCLUSION

The *Helicobacter pylori* infection rate of colonic polyp group were more higher. The impact factor of colonic polyp recurrence include *Helicobacter pylori* infection, pathological types of polyp and polyp number. The recurrence rate of colon polyp were more higher in *Helicobacter pylori* positive, adenoma polyp and multiple polyp group. Therefore, endoscopic treatment in time and *Helicobacter pylori* eradication can decrease the recurrent risk of colon polyp.

DECLARATIONS

Ethics approval and consent to participate

The clinical research was established, according to the ethical guidelines of the Helsinki Declaration and was approved by the Human Ethics Committee of Xuancheng People's Hospital. Written informed consent was obtained from individual or guardian participants.

Availability of data and material

All data generated or analysed during this study are included in this published article.

Authors' contributions

Guangming Wang performed the data collection of colon polyp. Zheng Zhou analyzed and interpreted the patient data regarding the impact factor of colon polyp, and was a major contributor in writing the manuscript. All authors read and approved the final manuscript.

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