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Gastroenterology

ISN'T IT TIME TO EVALUATE COLONOSCOPY INDICATIONS IN YOUNG ADULTS?

KEY WORDS:

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ABSTRACT

The circumstances for which colonoscopy is indicated have been reported by many associations. Colonoscopy, which is an invasive procedure frequently used for diagnosis and treatment, has complications such as bleeding and perforation. The risks of the conoscopic procedure do not change with age, but the chance of finding a serious pathology on colonoscopy is much lower among young people. In light of these information,this study was planned to investigate the necessity of doing a colonoscopyin patients under 30 years of age and to reveal that clear and relative indications may vary with age or whether it should be changedwith age. 5625 colonoscopies, which were peformed in our the endoscopy unit between 01/01/2015 and 01/06/2016, were examined retrospectively. Patients who were asked to undergo colonoscopy with any clinical preliminary diagnosis but had normal colonoscopic findings had an incompatibility between diagnosis and examination (Group 1). Patients who had any clinical diagnosis after colonoscopy had a compatibility between diagnosis and examination(Group 2). A clinical diagnosis was made by colonoscopy in 109 (35.5%) of the patients with a clear indication for colonoscopy and in 90 (45.2%) of the patients with a relative indication for colonoscopy. Making a clinical diagnosis in the patients with a relative indication for colonoscopy was statistically significant (p=0.032).It was found that a clinical diagnosis was made 1.5 (1.042-2.16) times in the patients undergoing colonoscopy for relative indications. Indications for colonoscopy under 30 years should be reassessed. Perhaps even indications for each decade below 30 should be identified.

INTRODUCTION

The circumstancesfor which colonoscopy is indicated have been reported by many associations. The most important indications are as follows [1].

a. Hematochezia, presence of fecal occult blood, investigation of unexplained gastrointestinal tract hemorrhages such as melena in which upper gastrointestinal tract hemorrhagehas been excluded,
b. Evaluation of abnormal findings detected in another imaging method,
c. Unexplained iron deficiency anemia,
d. Diagnosis and follow-up of colonic neoplasia,
e. Chronic diarrhea of unknown origin,
f. Treatment.

Colonoscopy is generally not indicated in thecircumstances such as chronic, stable, irritable bowel syndrome or chronicabdominal pain, acute diarrhea, GI bleeding or melena with a demonstrated upper GIsource [1].

Colonoscopy, which is an invasive procedure frequently used for diagnosis and treatment, has complications such as bleeding and perforation [2], anda systematic review reported that the complication rate of colonoscopy was 0.28% [3].

The risks of the conoscopic procedure do not change with age, but the chance of finding a serious pathology on colonoscopy is much lower among young people [4].It was reported thatthe risk of developing colorectal cancer after 5 years was 1/7000 for a 30-year-old individual, 1/1200 for a40-year-old individual, 1/300 for a 50-year-old individual, and 1/100 for a 60-year-old individual, respectively [5].

In light of these information,this study was planned to investigate the necessity of doing a colonoscopyin patients under 30 years of age and to reveal that clear and relative indications may vary with age or whether it should be changedwith age.

MATERIALS AND METHODS

5625 colonoscopies, which were peformed in the endoscopy unit of İstanbul Training and Research Hospital between 01/01/2015 and 01/06/2016, were examined retrospectively. Patients who had a hereditary colorectal cancer syndrome, who had a previous personal history of cancer or polyps, who had an inflammatory bowel disease,whohadpreviously undergone colonoscopy for any reason, and who underwent suboptimal evaluation due to inadequate bowel cleansingwere excluded from the study.

The age, gender, indications for colonoscopy, symptoms, colonoscopy findings and clinical information regarding colonoscopy of 506 patients included in the study were recorded.Patients who were asked to undergo colonoscopy with any clinical preliminary diagnosis but had normal colonoscopic findingshad an incompatibility between diagnosis and examination (Group 1).Patients who had any clinical diagnosis after colonoscopy had a compatibility between diagnosis and

examination(Group 2).

Patients who had rectal bleeding, iron deficiency anemia and a family history of colorectal cancer were evaluated as having a clear indication for colonoscopy. The reasons other than these were considered as a relative indication for colonoscopy.

Statistical Analysis

The data of the study was analyzed using the SPSS 22.0 (IBM Corporation, Armonk, New York, United States) program. The normal distribution of the data was evaluated by the Shapiro-Wilk test.Homogeneity of variances was evaluated by the Levene's test. The independent-samples t-testwas used together with bootstrap results in comparing two independent groups according to the quantitative data.The Pearson's chi-square test was performed with the Monte Carlo simulation technique in comparing the categorical variables with each other. Column ratios were compared with each other and were expressed according to the Bonferroni-corrected p-values. The odds ratio was used to determine the most significant categorical risk factor. The logistic regression test was performed by the Backward method to determine the cause-effect relationship of categorical response variables with explanatory variables in binary (diatomic) categories. The quantitative variables were shown as mean ± SD (standard deviation), and the categorical variables were shown as n (%).The variables were examined at a 95% confidence level, and $p<0.05$ was considered statistically significant.

RESULTS

307 patients had normal colonoscopic findings and were included in Group 1. 199 patients had any clinical diagnosis by colonoscopy and were included in Group 2. The mean age of Group 1 was 24.50±3.76 years (range 16-30).The mean age of Group 2was 25.09±3.92 years(range 15-30). There was no statistically significant difference in mean age between the groups. There were 160 (52.1%) men in Group 1 and 110 (55.3%) men in Group 2. There was no statistically significant difference in gender distribution between the groups.

A clinical diagnosis was made by colonoscopy in 109 (35.5%) of the patients with a clear indication for colonoscopy and in 90 (45.2%) of the patients with a relative indication for colonoscopy. Making a clinical diagnosis in the patients with a relative indication for colonoscopy was statistically significant (p=0.032).It was found that a clinical diagnosis was made1.5 (1.042-2.16) times in the patients undergoing colonoscopy for relative indications.

The most common reason for colonoscopy was rectal bleeding, which was detected in 127 (25.1%) of the patients. A clinical diagnosis was made by colonoscopy in 73 (57.5%) of these patients.The second most common reason for colonoscopy was abdominal pain and swelling, which were detected in102 (20.2%) of the patients. 81 (79.4%) of these patients had normal colonoscopic findings. A clinical diagnosis was made by colonoscopyin 43 (66.2%) of the patients with rectal pain, itching and discharge. The colonoscopic findings were normal in 81 (79.4%) of the patients with constipation, 29 (82.9%) of the patients with iron deficiency, and all 10 patients with weight loss. In the statistical analysis, there was a significant incompatibility between diagnosis and examination for colonoscopies performed due to abdominal pain, swelling, constipation, weight loss, and iron deficiency anemia ($p<0.001$for all).There was a significant compatibility between diagnosis and examination for colonoscopies performed due to rectal pain, itching and discharge and rectal bleeding($p<0.001$). No statistically significant difference was found in terms of compatibility between diagnosis and examination for colonoscopies performed due to other reasons (Table 1).

The most common diagnosis was hemorrhoidal disease, which was detected in 65 (12.8%)patients. The second most common diagnosis was anal fissure, which was detected in 49 (9.7%)patients. 18 (3.5%) patients had polyps and 9 (1.8%) patients had cancer (Table 2).

There were 131 patients having hemorrhoidal disease, anal fissure, anal fistula, and anal condyloma, which are benign diseases of the perianal region. These patients constituted 65.8% of Group 2.

None of our patients had any serious side effects, and transient minor symptoms could not be reached.

DISCUSSION

Endoscopy is a valuable tool that holds a very important place in the diagnosis and treatment of gastrointestinal system diseases.Today, most of the 2nd and 3rd step health centers have an endoscopy unit.However, colonoscopy should be performed by specialists who have acquired skills in endoscopy. Therefore, the equipment needed for the process, auxiliary personnel and area of sufficient size are some of the reasons that increase the cost of this process.In addition, a significant time is required for each process. When planning a colonoscopy for patients,all these should be taken into account with clear and relative indications.

Although it has been reported that one third of the patients have transient minor symptoms after colonoscopy,serious adverse events are rare [6]. A systematic review containing 57,742 colonoscopies for risk screening showed that the rate of adverse events was 2.8 per 1000 colonoscopies [3].

In our study, none of our patients had any serious side effects, and transient minor symptoms could not be reached. Some studies reported that 7% of patients may have colonoscopy-related pain requiring hospital admission and that this rate may be higher in those with inflammatory bowel disease [4,7].We think that mild adverse events, especially abdominal pain, are overlooked in patients undergoing colonoscopy.

It was reported thatthe risk of developing colorectal cancer after 5 years was 1/7000 for a 30-year-old individual, 1/1200 for a40-year-old individual, 1/300 for a 50-year-old individual, and 1/100 for a 60-year-old individual, respectively [5]. Our study found that307 (60.7%) patients under 30 years of age who had a low risk of malignancy had normal colonoscopic findings. Benign diseases of the perianal region that can be diagnosed by rectoscopy were detected in 131 (65.8%) of patients with any clinical diagnosis on colonoscopy.

A clinical diagnosis was made by colonoscopy in 109 (35.5%) of the patients with a clear indication for colonoscopy and in 90 (45.2%) of the patients with a relative indication for colonoscopy.Making a clinical diagnosis in the patients with a relative indication for colonoscopy was statistically significant (p=0.032). It was found that a clinical diagnosis was made1.5 (1.042-2.16) times in the patients undergoing colonoscopy for relative indications.We think that this result is due to that clear indications for colonoscopy have been determined to mostly identify malignant diseases while the groups of our study consisted of the patients under the age of 30 years who had a low risk of malignancy.

In contradiction with our results, in a study involving 100 women under 30 years of age,while all 38 patients with a relative indication for colonoscopy had normal colonoscopic findings,42 (58%) of 72 patients with a clear indication for colonoscopyhad any clinical diagnosis by colonoscopy.Making a clinical diagnosis in the patients with a clear indication for colonoscopy was statistically significant ($p<0.001$). The authors have argued that this is likely to be so, due to the fact that many patients were referred for clinically accepted, clear indication(s) [4].This study emphasized thatreducing colonoscopy ratesin patients with relative indicationswould facilitate access to colonoscopy in patients who need it more.In our study, the number of patients was 506, and the findings were different.However, we can say that we reached similar result.In our study, 45.2% of the patients with relative indications had positive colonoscopy findings, and these findings may be detected by rectosigmoidoscopy, a less invasive procedure.There was no evidence of complications related to colonoscopy in our patients. However, the rates of minor and major complications of colonoscopy were noted in the literature [2]. Whenit is assumed that complications may develop at these rates, we believe thatreducing colonoscopy rates or use of

rectosigmoidoscopy instead of colonoscopy would contribute to reducing cost and complication rates. We also think that patients with high medical needswill be able to access colonoscopy more easily thanks to extra labor and time to be achieved.Based on these results,we can say that clear and relative indications of colonoscopy should be redetermined according to patients' age.

There are some limitations in our study. Our study wasa retrospective study, and complications were not reached.

Table 1.

		Group 1 n (Row %) / (Column %) 307		Group 2 n (Row %) / (Column %) 199		Total n (Row %) / (Column %) 506	p
Gender							
	Female	147(62.3) / (47.9)		89(37.7) / (44.7)		236(100) / (46.6)	0.523
	Male	160(59.3) / (52.1)		110(40.7) / (55.3)		270(100) / (53.4)	
Indication/Relative indication							
	Indication	198(64.5) / (64.5)		109(35.5) / (54.8)		307(100) / (60.7)	0.032
Complaints							
	Abdominal pain, swelling	81(79.4) / (26.4)		21(20.6) / (10.6)		102(100) / (20.2)	<0.001
	Constipation	50(79.4) / (16.3)		13(20.6) / (6.5)		63(100) / (12.5)	
	Rectal pain, itching and discharge	22(33.8) / (7.2)		43(66.2) / (21.6)		65(100) / (12.8)	
	Weight loss	10(100) / (3.3)		0(0) / (0)		10(100) / (2)	
	Rectal bleeding	54(42.5) / (17.6)		73(57.5) / (36.7)		127(100) / (25.1)	
	Iron deficiency	29(82.9) / (9.4)		6(17.1) / (3)		35(100) / (6.9)	
	Chronic diarrhea	29(50) / (9.4)		29(50) / (14.6)		58(100) / (11.5)	
	Change in bowel habits	3(60) / (1)		2(40) / (1)		5(100) / (1)	
	Incontinence	2(66.7) / (0.7)		1(33.3) / (0.5)		3(100) / (0.6)	
	Intestinal tuberculosis?	1(100) / (0.3)		0(0) / (0)		1(100) / (0.2)	
	Anemia	12(66.7) / (3.9)		6(33.3) / (3)		18(100) / (3.6)	
	Family history of colon cancer	14(73.7) / (4.6)		5(26.3) / (2.5)		19(100) / (3.8)	

Independent Test(Bootstrap) - Pearson chi Square test(Monte Carlo) - * Odss Ratio (%95 Confidence interval) / SD.: Standard deviation - Max.:Maximum - Min.: Minimum

Table 2. Colonoscopic Findings

Diagnosis	N	%
Normal colonoscopic findings	307	60.7
Hemorrhoidal disease	65	12.8
Anal fissure	49	9.7
Inflammatory bowel diseases	29	5.7
Polyp	18	3.5
Anal fistula	12	2.4
Non-specific inflammation	11	2.2
Cancer	9	1.8
Anal condyloma	5	1
A-V malformation	1	0.2
Total	506	100

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