

Original Article

Colonoscopy outcome in North of Iran (Guilan): 2006-2009

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Received June 5, 2012; accepted July 31, 2012; Epub August 22, 2012; Published September 15, 2012

Abstract: Colonoscopy is a procedure that used largely, in assessment, screening & management of lower gastrointestinal disease. Some of these diseases that assessed are colorectal cancer, polyps & inflammatory bowel disease. The goal of this study is determining of frequency of lower GI disease among patient who have elective colonoscopy. This cross-sectional study was conducted retrospective. Samples collected from the census method of colonoscopy patients in Razi hospital, from March 21th in 2006 to March 20th in 2009. Patients' data including age, sex, location and type of lesion found by colonoscopy and pathology diagnosis were collected and at the end necessary information collected into the SPSS software (version 16) for analyzing with the help of statistical tests Chi-square. Significant findings: Of 1398 patients, 683 patients (48/8 %) were male and 715 (51/2 %) were female 494 patients (35/3%) had normal results. Hemorrhoids (22/6 %) and polyps (14/8 %) were the most abundant lesions discovered by colonoscopy. The most common site of lesions among patients with abnormal colonoscopy findings, were anal canal and anus (43/8 %) and rectosigmoid (26%). The findings in both males and females, revealed no statistical differences. Conclusion: Colonoscopic detection of hemorrhoids is a common finding in patient undergone colonoscopy. The most frequent site for lesions which found in anal canal and anus. In addition to, normal findings had a high rate and it indicates that unnecessary colonoscopy have been required by physicians.

Keywords: Colorectal diseases, frequency, polyp, colonoscopy

Introduction

Colonoscopy become more and more popular after sixties of 20 century and used in screening, assessment and management of colorectal diseases [1] and due to its increasing availability, relative safety, low complication rate, it is being commonly performed. Incidence and prevalence of colonic diseases has been calculated in different geographical regions of the world [2, 4].

This procedure is more sensitive than radiologic imaging and can be used for biopsy & total resection of lesion. However, colonoscopy is a difficult skill to master. The procedure is often painful for the patient. Over sedation, perforation, bleeding, and procedure related death remain much feared complications [5, 6]. It widely used to diagnosis of colorectal cancers and adenomatous polyps that can be cancerous if they won't be managed [6, 7]. Recent studies also

showed that using Colonoscopy in screening colorectal cancer is reducing economic costs of disease management [8, 9].

Colorectal cancer is as the most frequent cancer in Europe and the second leading cause of death related to cancer in the United States from one way, and colon is the common location for many other diseases such as diverticulitis, hemorrhoid, IBD, especially ulcerative colitis, benign and malignant polyps from the other way necessitate diagnostic tests like colonoscopy that be gold standard [10, 11]. In this study, we sought to analyze the various outcome of colonoscopy in patients referred to Razi hospital Endoscopy ward in Rasht, the center of guilan province, north of Iran.

Materials and methods

This retrospective cross-sectional review as carried out at the colonoscopy unit, Razi Hospital,

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Rasht, Iran. It included all patients of either gender who underwent colonoscopies for various indications during three year (March 2006 to March 2009). The subjects were gathered with enumeration method. The project was approved by the ethics committee of the faculty of medicine, Guilan University of medical sciences, Iran.

Data was gathered from medical records of patients and by calling their physicians if necessary.

Patients' data including age, sex, location and type of lesion found by colonoscopy and pathology diagnosis were retrieved. Gastroenterology faculty, or fellows under close supervision by the faculty, performed all endoscopic examinations. All colonoscopic abnormalities were noted and biopsied if indicated, and all polyps were biopsied and removed.

All patients were prepared using Miralax (Bisacodyl 5 mg + Sodium docusate 100 mg) 6–10 tabs 12 h before the procedure and 2–3 clear-water enemas. Conscious sedation using 2/5-5 mg Midazolam and 4–8 mg nalophine intravenous was used for all patients. Olympus GIF-CF140 video scopes were used following standard high-level liquid disinfection with Cidex 2.5% (Johnson & Johnson, USA) after cleaning and washing.

SPSS for Windows, version 16 was used for data entry. The quantitative and qualitative data were analyzed by Chi-square and Fisher's exact test respectively. Continuous variables are presented as mean \pm standard deviation (SD); categorical variables are presented as percentages. P-value < 0.05 was as significant.

Result

During the study period, 1447 patients were identified as having a colonoscopy. Out of 1447 patients, 49 (3.4%) were excluded due to missing data and 1398 were included in the further analysis. Among that patient 529 (48.8%) were male and 715 (51.2%) were female. The mean age was 48.91 ± 17.40 years (range 13–95 years); while the most of them are in groups 50 to 60 & 60 to 70 years old.

The most common findings in colonoscopy were hemorrhoids (315 cases) and polyps (207 cases) that were be 22.6 and 14.8 of all of them. Other findings include exudative-

Table 1. Distribution of colonoscopy finding

Colonoscopy finding	Number	%
Normal	494	35.3
Hemorrhoids	315	22.6
Polyps	207	14.8
Infiltrative-exudative wounds	123	8.8
Tumoral lesion	72	5.2
Diverticulosis	59	4.2
Fissure	44	3.2
Inflammation. Erythema	35	2.5
Vascular lesion	33	2.4
Others	11	0.8
Rectal prolaps	5	0.3
Total	1398	100

infiltrative & inflammatory wounds, tumoral lesions and others (abscess, volvulus and extra luminal masses). In some of patients, more than one disorder have be seen for example 11.2% of them have polyps and hemorrhoids and there were 7.2% polyps and diverticulitis, 5.1% hemorrhoids and Fisher, 2.8% hemorrhoids & exudative-infiltrative wounds and 2.18% hemorrhoids and vascular lesions.

Four most frequent findings in colonoscopy report were normal findings, hemorrhoids, polyps, and Infiltrative-exudative wounds (**Table 1**). Among patient who reported hemorrhoids in pathology, (178) 56.7% were grade 2, (89) 28.2% grade 1 and (48) 15.1% grade 3. In patients who have polyps, they were mostly found in Rectosigmoid (41.1%), transverse colon (16.1%) and descending colon (15.4%). 131 (67.5 %) of polyps smaller than 1 cm. It should be said that adenomatous (148, 76.3%), hyperplastic (38, 19.6%) and inflammatory (8, 4.1%) polyps have the most frequency. Among IBD patients 69.3 % have ulcerative colitis & 29.3 % of them have crohns (**Table 2**).

In 40 to 50 & 60 to 70 years old patient, polyps were seen more than the other age groups (24.1% and 21.2%), while most adenocarcinomas were in more than 70 (43.3%) and 60 to 70 (22.7%) years old (**Table 3**).

Results showed that frequency of hemorrhoids (56.5% Vs 46.5%), fisher (61.4% Vs 38.6%), vascular lesions (69.7% Vs 30.3%) & prolaps (60% Vs 40%) were more than in female and polyps (51.7% Vs 48.3%), tumoral lesions (68% Vs 32%) & exudative-infiltrative wounds (52.8%

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Table 2. Distribution of location of lesion

Location of lesion	Number	%
Anal canal and anus	407	43.8
Rectosigmoid colon	230	26
Descending colon	75	8.5
Transverse colon	69	7.8
Ascending colon	57	6.4
Total colon	66	7.5
total	904	100

Vs 47.2%) seen in colonoscopy were more in male. However Chi Square statistical analysis, there were no significant relation between sex and colonoscopy findings.

Discussion

Colonoscopy as a acceptable and advocatable procedure in all guidelines was advised for screening in patient older than 50 and also was used for colon neoplasm's like Familial Adenomatous Polyposis, Hereditary non-polypoid colon cancer and occult or gross blood in the stool in under 50 [12, 14]. Other colonoscopic indications are GI bleeding, Abdominal pain, Anemia, Radiologic abnormality, Evaluation and follow-up of inflammatory bowel disease, Differentiating diverticular disease and malignancy, Follow-up of patient with prior colon surgery, reduction of volvulus, decompression of dilated colon (Ogilvie's syndrome), Confirmation of lesion location at the time of laparotomy and during laparoscopic procedures [15].

In the current study most of the patients were female while Agah et al [16] have found that frequency of male in patients who undergone colonoscopy is more than female. In Imperiale et al and in Betes et al study most of patients were male [17, 18].

Most patients (36.5%) are between 40-60 years old, less of them are in the age group of more than 80 years and younger than 20 years (3.4% and 5.8%, respectively). In Bowles, et al study, also, age range was 16-95 years, that 14.1% of them were more than 75 years old [5].

In the present study normal colonoscopy finding showed the highest frequency (35.3%) that is in comparison with other studies like Fani et al study was (30.4%) [19] and Wong survey was (21.5%) [20].

These negative results were as valuable as the positive observations, providing relief to both the patient and his/her physician [21]. However our results were more similar to Amjad et al [1] and Bowels et al [5] studies that normal colonoscopies were 38% and 42/1%. In our study, hemorrhoids and polyps were the most common abnormal findings. While in Fani study respectively these rates were 20% and 9.65% [19].

In a study done at King Hussein Medical Center in Jordan, the most common abnormal findings were colonic cancer in 29%, colonic polyps in 24%, and IBD in 16% [22]. In another study was done by Amjad et al [1] IBD (19.3%), tumors (12.2%) and hemorrhoids (10.7%) were the most abnormal outcome. The difference may be

Table 3. Distribution of colonoscopy outcome among age group

Colonoscopy outcome	Age groups					Total
	<20 yrs	20-40 yrs	40-60 yrs	60-80 yrs	>80 yrs	
Normal	24(4.9)	185(37.4)	183(39.1)	93(16.8)	9(1.8)	494
Hemorrhoids	16(5)	95(30.1)	132(42.1)	65(20.6)	7(2.2)	315
Polyps	8(3.8)	28(13.5)	85(41.2)	74(35.7)	12(5.8)	207
Diverticulosis	1(1.7)	4(6.8)	23(39)	28(47.5)	3(5)	59
Exudative-infiltrative lesion	18(14.6)	51(41.5)	29(23.6)	25(20.3)	0	123
Inflammation-erythema	0	9(25.7)	16(45.7)	10(28.6)	0	35
Vascular lesion	4(12.1)	6(18.2)	12(36.4)	11(33.3)	0	33
Tumoral lesion	0	15(20.8)	12(16.7)	31(43.1)	14(19.4)	72
Fissure	10(22.7)	17(38.6)	14(31.8)	3(6.9)	0	44
Rectal prolaps	0	0	1(20)	3(60)	1(20)	5
Others	0	2(18.2)	4(36.3)	3(27.3)	2(18.2)	11
total	81(5.8)	412(29.5)	511(36.5)	346(24.8)	48(3.4)	1398

explained by the changeable incidence and prevalence of diseases in different countries and type of sample selection in their study.

The prevalence of tumoral lesions and ulcers (8.8% & 5.2%, respectively), as well as, relative diseases (IBD, Colorectal cancer) that had been found in our study are comparable with other results obtained by Fani study (IBD: 10.9%, Colon cancer: 4.3%) [19], and Agah, et al study tumoral lesions in 4.8% of patients were seen [16].

In the current study, all types of diagnosed colorectal cancers in examined patients was the type of adenocarcinoma that closely match with similar studies have been done Rectosigmoid was the common origin for all lesions except the Diverticulitis ($p < 0.001$). Abdollahi et al [23] showed that the most prevalence of CRC in rectum (41%) and sigmoid (21%). In this study, most patients with tumoral lesions (43.1%) are between 60 - 80 years, and 68% of them are men.

There are limitations of the current study; being a retrospective design, the histology was verified by different pathologists and completeness of the colonoscopies (how well the bowel was prepared) could not be verified.

Conclusion

Colonoscopic detection of hemorrhoids is a common finding in patient undergone colonoscopy. The most frequent site for lesions which found in anal canal and anus. In addition to, normal findings had a high rate and it indicates that unnecessary colonoscopy have been required by physicians. Although colonoscopy seems to be unnecessary in some, but colonoscopy for colon cancer screening and early prevention is essential.

Financial support

This research was supported by the Gastrointestinal & Liver Diseases Research Center (GLDRC), Guilan University (Medical Sciences), Rasht, Iran.

Acknowledgement

We would like to thank Endoscopy and colonoscopy ward staff of Razi Hospital who assisted

us in this study. The authors declare that they have no Conflict of Interests.

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References

- [1] Amjad S, Ammara A, Sobia Z and Arooj E. Colonoscopy: Analysis of Indications and Diagnoses at a Specialist Unit. *Ann Pak Inst Med Sci* 2010; 6: 15-19.
- [2] Juillerat P, Peytremann-Bridevaux I, Vader JP, Arditi C, Schusselé Fillietaz S, Dubois RW, Gonnvers JJ, Froehlich, Burnand B and Pittet V. Presentation of methodology, general results and analysis of complications. *Endoscopy* 2009; 41: 240-246.
- [3] Nahas SC, Marques CF, Araújo SA, Aisaka AA, Nahas CS, Pinto RA and Kiss DR. Colonoscopy as a diagnostic and therapeutic method. *Arq Gastroenterol* 2005; 42: 77-82.
- [4] Wong RF, Khosla R, Moore JH and Kuwada SK. Consider colonoscopy for young patients with hematochezia. *The Journal of Family Practice* 2004; 53: 879-884.
- [5] Bowles C, Leicester R, Swarbrick CE, Williams CB and Epstein O. A prospective study of colonoscopy practice in the UK today: are we adequately prepared for national colorectal cancer screening tomorrow? *Gut* 2004; 53: 277-283.
- [6] Nahas SC, Alves PR, Araujo SE, Silva e Souza Júnior AH, da Sobrado Júnior CW, Nahas CS, Haber-Gama A and Pinotti HW. Colonoscopy as a diagnostic and therapeutic method in large intestine diseases. Results of 1715 exams. *Rev Hosp Clin Fac Med Sao Paulo* 1998; 53: 117-121.
- [7] Zerey M, Paton BL, Khan PD, Lincourt AE, Kercher KW, Greene FL and Heniford BT. Colonoscopy in the very elderly: a review of 157 cases. *Surg Endosc* 2007; 21: 1806-1809.
- [8] Sonnenberg A, Delco F and Inadomi JM. Cost-Effectiveness of Colonoscopy in Screening for Colorectal Cancer. *Annals of Internal Medicine* 2000; 133: 573-584.
- [9] Bersani G, Rossi A, Ricci G, Pollino V, DeFabritiis G, Suzzi A and Alvisi V. Do ASGE guidelines for the appropriate use of colonoscopy enhance the probability of finding relevant pathologies in an open access service? *Digestive and Liver Disease* 2005; 37: 609-614.
- [10] Regula J, Rupinski M, Kraszewska E, Polkowski M, Pachlewski J, Orlowska J, Nowacki MP and Butruk E. Colonoscopy in Colorectal-Cancer Screening for detection of Advanced neoplasia. *The new england journal of medicine* 2006;

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- 355: 1863-1872.
- [11] Roerts S Bresalier. Malignant neoplasms of the large intestine. Mark Feldman, et al. Sleisenger, Fordtrans. Gastrointestinal and Liver Diseases. Saunders Elsevier. 8th edition, 2006, 2759-2764.
- [12] Smoot DT, Collins J, Dunlap S, Ali-Ibrahim A, Nouraei M, Lee EL and Ashktorab H. Outcome of Colonoscopy in Elderly African-American Patients. *Dig Dis Sci* 2009; 54: 2484-2487.
- [13] Mehran A, Jaffe P, Efron J, Vernava A and Liberman A. Screening colonoscopy in the asymptomatic 50- to 59-year-old Population. *Surg Endosc* 2003; 17: 1974-1977.
- [14] Kim DH, Lee SY, Choi KS, Lee HJ, Park SC, Kim J, Han CJ and Kim YC. The Usefulness of Colonoscopy as a Screening Test for Detecting Colorectal Polyps. *Hepato Gastroenterology* 2007; 54: 2240-2242.
- [15] Huang EH and Marks JM. The diagnostic and therapeutic roles of colonoscopy. *Surg Endosc* 2001; 15: 1373-1380.
- [16] Agah Sh. The Frequency of colorectal polyps and tumors at colonoscopy performed in Tehran, Shariati Hospital from December 2000-2002. *Iran Medical Sciences* 1387; 60: 13-18.
- [17] Imperiale T, Wagner D, Ching L, Larkin GN, Rogge JD and Ransohoff DF. Results of screening colonoscopy among persons 40 to 49 years of age. *NEngl J Med* 2002; 346: 1781-1785.
- [18] Betés M, Muñoz-Navas MA, Duque JM, Angós R, Macías E, Súbtil JC, Herraiz M, De La Riva S, Delgado-Rodríguez M and Martínez-González MA. Use of Colonoscopy as a Primary Screening Test for Colorectal Cancer in Average Risk People. *Am J Gastroenterol* 2003; 98: 2648-2654.
- [19] Fani A. The assessment of frequency and causes of rectorrhagi in adult patients admitted to the faculty clinic members from September 2000 - 2001, Quarterly Rahavard danesh, The journal of Arak University of Medical Sciences 1381; 5: 29-33.
- [20] Wong RF, Khosla R, Moore JH and Kuwada SK. Consider colonoscopy for young patients with hematochezia. *The Journal of Family Practice* 2004; 53: 879-884.
- [21] Thiis-Evensen E, Seip B, Vatn MH and Hoff GS. Impact of a colonoscopic screening examination for colorectal cancer on later utilization of distal GI endoscopies. *Gastrointest Endosc* 2006; 64: 948-954.
- [22] Ghazzawi I, Ajlouni Y, Smadi B, Nassan W, Mryyat Z, Talafeeh A, Harfushi K, Obeidat W, Oweis S, Lina Hamtini L, Qtaish I, Al Khafaji F and Majaly Z. Colonoscopy at King Hussein Medical Center; indications, effectiveness, safety and outcome. *Jord Roy Med Serv* 2010; 17: 15-20.
- [23] Abdolahi A and Feyzollah M. The prevalence of colorectal tumors in patients referred to the two centers in Tehran from 2004 to 2007 quarterly medicine of Azad Islamic university 2008; 55: 65-72.