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Review of indications and findings of colonoscopy in GIT unit at Al-Imamein Al-Kadhimein teaching hospital

**A graduation research submitted to the department of
medicine at Al-Nahrain University – College of medicine
2018 / 2019**

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April, 2019

Rajab, 1440

Index

Content	Page No.
Abstract	2
Introduction	3
Patients and methods	10
Results	13
Discussion	21
Conclusion	24
References	26

Abstract:

Background: Colonoscopy is a procedure that uses a long, flexible, narrow tube with a light and tiny camera on one end, called a colonoscope, to look inside the rectum and entire colon. Since the introduction of the fiberoptic colonoscope in the early 1970s, colonoscopy has become an established procedure for the diagnosis, evaluation, and treatment of colonic diseases.

Colonoscopic indications are commonly classified as diagnostic (such as bleeding per rectum, evaluation of iron deficiency anemia, abnormal radiographic studies of the colon, colorectal cancer screening, post polypectomy and post cancer resection surveillance, surveillance in inflammatory bowel disease, and in those with suspected masses) or therapeutic (such as polypectomy, decompression of bowel obstruction, hemorrhoidal band ligation.. etc). Contraindications to colonoscopy are either absolute or relative.

We aim in our retrospective study to analyze the commonest indications and findings on colonoscopy among the patients referred to the GIT unit in Al-Imamein Al-Kadhimein teaching hospital.

Materials and methods: The data of 55 patients who presented to the GIT unit at Al-Imamein Al-Kadhimein teaching hospital between May, 2017 and September, 2018 were retrospectively evaluated.

Results: Out of the 50 patients included in this study 32 (64%) were males and 18 (36%) were females. The mean age of the patients was 49 years. Rectal bleeding was the commonest indication for performing colonoscopy, being present in 24 patients (48%). Findings on digital rectal exam were normal in 90% of patients, but revealed external hemorrhoids in 4 (8%), and anal fissures in 1 (2%). Upon performing colonoscopy, the cecum was reached in 50% of the cases. The commonest colonoscopic finding was internal hemorrhoids in 16 patients (32%). The diagnostic yield of the study was 74%.

Conclusion: Rectal bleeding is the commonest indication for performing colonoscopy in Al-Imamein Al-Kadhimein teaching hospital. Internal hemorrhoids are the commonest finding in patients undergoing colonoscopy at Al-Imamein Al-Kadhimein teaching hospital and are the commonest cause of rectal bleeding.

Introduction

Introduction:

The implementation of optical fibers in the medical field allowed a significant technological advance in the direct observation of the digestive tract through flexible endoscopes^[1].

Colonoscopy is a procedure that uses a long, flexible, narrow tube with a light and tiny camera on one end, called a colonoscope, to look inside the rectum and entire colon. During this procedure, the insertion tube of the colonoscope is introduced and guided through the colon from the rectum to the cecum and the terminal ileum. The colonoscope supports insufflation of air from the tip to expand the colon as well as suctioning of air and obstructing fluids such as blood and mucous. Suspicious tissue and polyps can be removed by using the biopsy channel. The procedure is completed with a slow withdrawal of the insertion tube, ensuring all surfaces and folds are examined carefully^[2].

Since the introduction of the fibreoptic colonoscope in the early 1970s, colonoscopy has become an established procedure for the diagnosis, evaluation, and treatment of colonic diseases. Properly performed, colonoscopy is generally safe, accurate, and well tolerated by most patients^[3].

Visualization of the mucosa of the entire large intestine and distal terminal ileum is usually possible at colonoscopy. In patients with chronic diarrhea, biopsy specimens can help diagnose the underlying condition. Polyps can be identified and removed during colonoscopy, thereby reducing the risk of colon cancer. Colonoscopy is the preferred method to evaluate the colon in most adult patients with bowel symptoms, iron deficiency anemia, abnormal radiographic studies of the colon, positive colorectal cancer screening tests, post polypectomy and post cancer resection surveillance, surveillance in inflammatory bowel disease, and in those with suspected masses. The use of colonoscopy has become accepted as the most effective method of screening the colon for neoplasia in patients over the age of 50 years and in younger patients at increased risk^[4].

Indications for colonoscopy:

Colonoscopic indications are commonly classified as diagnostic or therapeutic. These are illustrated in Table 1. The distinction between diagnostic and therapeutic colonoscopy has some value in understanding complication rates, since

complication rates are expected to be higher in therapeutic compared to diagnostic procedures^[5].

Table 1: Diagnostic and therapeutic indications for colonoscopy^[5].

Diagnostic indications

1. Evaluation of an abnormality on barium enema (or virtual colonoscopy) such as a filling defect or stricture
2. Evaluation of unexplained gastrointestinal bleeding
3. Hematochezia in absence of convincing anorectal source
4. Melena after an upper gastrointestinal source has been excluded
5. Presence of fecal occult blood
6. Unexplained iron deficiency anemia
7. Surveillance after removal of adenomas
8. Surveillance after resection of colorectal cancer
9. After identification of adenomas during sigmoidoscopy or for clearing the colon of synchronous neoplasia in patients with colorectal cancer.
10. In patients with ulcerative pancolitis or Crohn's colitis of ≥ 8 years' duration or left-sided colitis ≥ 15 years' duration
11. Colorectal cancer screening
12. Chronic inflammatory bowel disease of the colon, if more precise diagnosis or determination of the extent of activity of disease.
13. Clinically significant diarrhea of unexplained origin
14. Intraoperative identification of a lesion not apparent at surgery (e.g., polypectomy site, location of a bleeding site)

Therapeutic indications

1. Treatment of bleeding from such lesions as vascular malformation, ulceration, neoplasia, and polypectomy site (e.g., electrocoagulation, heater probe, laser or injection therapy)
2. Foreign body removal
3. Excision of colonic polyp
4. Decompression of acute nontoxic megacolon or sigmoid volvulus

5. Balloon dilation of stenotic lesions (e.g., anastomotic strictures)
6. Palliative treatment of stenosing or bleeding neoplasms (e.g., laser, electrocoagulation, stenting) Marking a neoplasm for localization

Specific indications:

1- Bleeding indications

Of all the indications for colonoscopy, the highest yield for neoplasia is associated with bleeding indications. A positive fecal occult blood test is perhaps the single best indication for colonoscopy^[6-8].

All persons with positive fecal occult blood tests and all persons aged 50 years and older with any lower gastrointestinal bleeding should undergo initial colonoscopy. A cost analysis of approaches to bleeding showed that even persons in their 20s and 30s with rectal bleeding should undergo at least initial distal colon visualization and if no source is identified, should proceed to full colon evaluation^[9].

2- Abdominal pain and constipation

The indication for colonoscopy in patients with irritable bowel syndrome (IBS) depends on the patient's age. Colonoscopy is justified in patients with symptoms of IBS aged 50 or older. When colorectal cancer is the cause of abdominal pain and constipation, the disease is often at a late stage. In general, isolated abdominal pain with or without constipation is a poor indication for colonoscopy, except to the extent that these symptoms help to convince patients to undergo screening that may be indicated on the basis of age or family history^[10].

3- Chronic diarrhea

Chronic diarrhea is defined as the passage of abnormally liquid or unformed stool at an increased frequency or a stool weight of more than 200 g/d for > 4 wks.^[11]

Colonoscopy is often performed in patients with chronic watery diarrhea, to exclude collagenous or lymphocytic colitis. In this case, random biopsies should be performed even if the mucosa appears normal. The optimal number and location of biopsy specimens are not established. If chronic diarrhea is accompanied by

abdominal pain, full colonoscopy should be performed to include intubation of the terminal ileum to exclude Crohn's disease^[12].

4- Abnormal imaging studies:

Filling defects and strictures identified on barium enema are generally an indication for colonoscopy. Routine abdominopelvic computed tomography (CT) scans sometimes identify areas of colonic thickening, believed to represent tumor or inflammation, and this is also an indication for colonoscopy. However, the false-positive rate is high. Patients in whom positron emission tomography (PET) scans are positive for colonic lesions should be evaluated by colonoscopy since PET scans have reasonable specificity for colorectal cancer and large polyps^[13].

5- Established ulcerative colitis:

Colonoscopy can be used to evaluate the extent and severity of ulcerative colitis, which can guide medical therapy and determine where to begin surveillance colonoscopies for cancer. Intubation and biopsy of the terminal ileum can be useful in distinguishing ulcerative colitis from Crohn's disease, which may be critical in decisions about whether to proceed with surgery or the type of operation that is to be performed. Colonoscopy can also assess disease activity when patients present with symptoms that are not clearly attributable to ulcerative colitis.

6- Post polypectomy surveillance:

Post polypectomy surveillance accounts for 25% of colonoscopies performed in the US^[14].

Patients with only one or two small (< 1 cm) tubular adenomas may have their first follow-up examination in 5 –10 years depending on the judgment of the physician. The guidelines call for a 3-year examination in patients with 3 –10 adenomas or with adenomas that are \geq 1 cm and contain high-grade dysplasia or villous elements. Patients with more than 10 adenomas should be examined at a shorter (< 3 years) interval depending on the judgment of the physician, and patients with large sessile adenomas require additional follow-ups at 3 to 6 month intervals until it is established that the polypectomy site is cleared of adenoma^[15].

7- Screening for colorectal cancer:

The greatest expansion in the use of, and indications for, colonoscopy has come through its endorsement as a screening measure in persons with average risk for colorectal carcinoma. Several factors need to be accounted for when considering CRC screening in patients, including patient's age and life expectancy, comorbidities, risk of colon neoplasia, and patient's preference^[16].

8- Miscellaneous indications:

The use of colonoscopy for therapeutic indications has expanded and its use has particularly increased for palliation of cancer. Colonoscopy is used for decompression of colonic pseudo obstruction primarily when neostigmine is contraindicated or when patients fail to respond to neostigmine.

Hemorrhoidal band ligation for symptomatic internal hemorrhoids that conservative management has failed to cure can also be performed effectively and safely during sigmoidoscopy or colonoscopy^[17].

Contraindications to colonoscopy:

Contraindications to colonoscopy can be classified as absolute and relative^[5]. These are illustrated in table 2.

1. Absolute contraindications:

Absolute contraindications include a competent patient who is unwilling to give consent, and an uncooperative patient in whom consent has been given but in whom adequate sedation cannot be achieved. In addition, toxic megacolon, fulminant colitis, and a known free colonic perforation are usually included in this list of contraindications.

2. Relative contraindications:

Relative contraindications are those situations in which risk is substantially increased. It may be appropriate to proceed if the information that may be acquired or a treatment that can be given is critical to the welfare of the patient. Relative contraindications include acute diverticulitis, very large abdominal aortic aneurysms (particularly if they are symptomatic), patients who are immediately postoperative, and patients who have suffered recent myocardial infarction, pulmonary embolism, or are currently hemodynamically unstable. Severe

coagulopathies constitute a relative contraindication also, particularly for therapeutic procedures. Colonoscopy can generally be performed safely during pregnancy but should be deferred in most instances if the indication does not require immediate resolution. In general, colonoscopy is contraindicated when the risks to the patient's health or life outweigh the potential benefits of colonoscopy.

Table 2: Contraindications to **colonoscopy**^[5].

Absolute

1. Competent patient who refuses to consent
2. Consented patient who is unable to cooperate and cannot be adequately sedated
3. Known perforated viscus communicating freely with the peritoneal cavity
4. Toxic megacolon
5. Fulminant colitis

Relative

1. Acute diverticulitis (diagnosis established)
2. Hemodynamic instability
3. Recent myocardial infarction or pulmonary embolism
4. Immediate postoperative stage
5. Very large and/or symptomatic abdominal aortic aneurysm
6. Pregnancy

Aim of the study:

We aim in our retrospective study to analyze the commonest indications and findings on colonoscopy among the patients referred to the GIT unit in Al-Imamein Al-Kadhimein teaching hospital.

Patients and methods

Patients and methods:

Study design: retrospective study

Patients: We reviewed the data of patients who underwent colonoscopy in the GIT unit at Al-Imamein Al-Kadhimein teaching hospital between May, 2017 and September, 2018 and retrospectively analyzed the data of 50 patients. Standardized hospital sheets (both written and computerized) were used to collect information, such as patient demographics, the presenting complaint and the main indication for the procedure.

Methods: The referring Physicians performed digital rectal exam on all patients. As a pre-procedural preparation, three days prior to the procedure patients were instructed to adhere to a “soft diet no fibers with maximum fluid intake. The fluids should be clear on the last day”. Patients were also given two sachets of “PicoPrep” purgative. 2 hours before the procedure; do not eat or drink anything. Intravenous Pethidine; dose 50-100 mg. was used as an analgesic and all the patients were attached to a PO2 monitor. Pentax Video scope (I scan) and Olympus video scope were used to perform all the procedures. Four certified colonoscopists performed the procedures.

After completing the procedure, the patients were moved to a recovery room and monitored for pain, level of consciousness, signs of perforation, respiratory distress, and hemodynamic stability. The average duration of the procedures was 20 minutes.

Results

Results:

50 patients were included in this study. The distribution of the patients according to gender was 32 (64%) males, & 18 (36%) females as shown in figure 1.

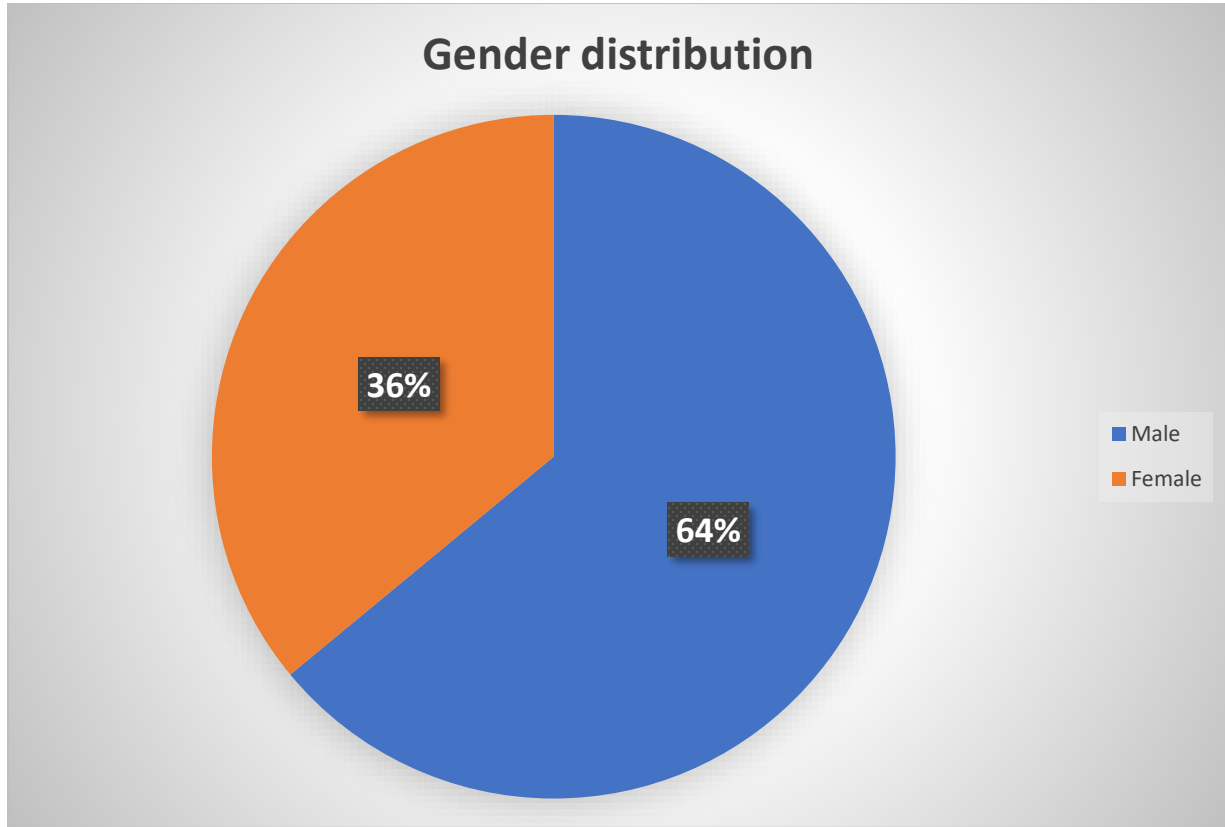


Figure 1: Distribution of the patients by gender

Figure 2 shows the distribution of the patients according to the age group. The mean age in our study was 49 years. Those aged between 51-60 years composed 22% of the study sample, followed by the age group 31-40 years (20%), the age group 41-50 years (14%), the age group 11-20 years (14%), the age group 61-70 years (10%), the age group 71-80 years (8%), the age group 21-30 years (8%), and lastly the age group 81-90 years composing only (4%).

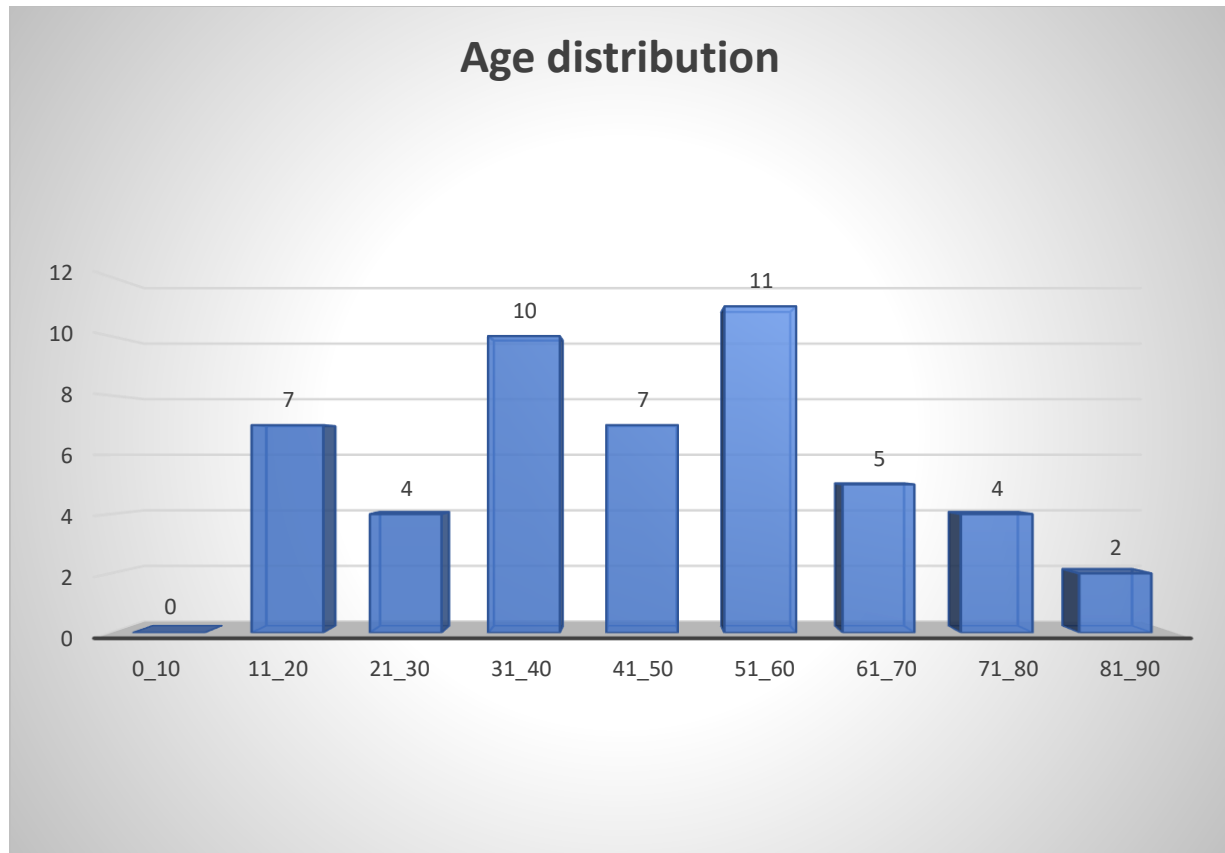


Figure 2: Distribution of the patients by age group

The indications for performing colonoscopy among the patients in the study sample are shown in figure 3. Bleeding per rectum was the commonest indication comprising around (48%) of the study sample. It was followed by abdominal pain (10%), constipation (16%), a follow up of ulcerative colitis (6%), screening for CA colon (4%), suspicion of intestinal obstruction (4%), and finally chronic diarrhea (4%)

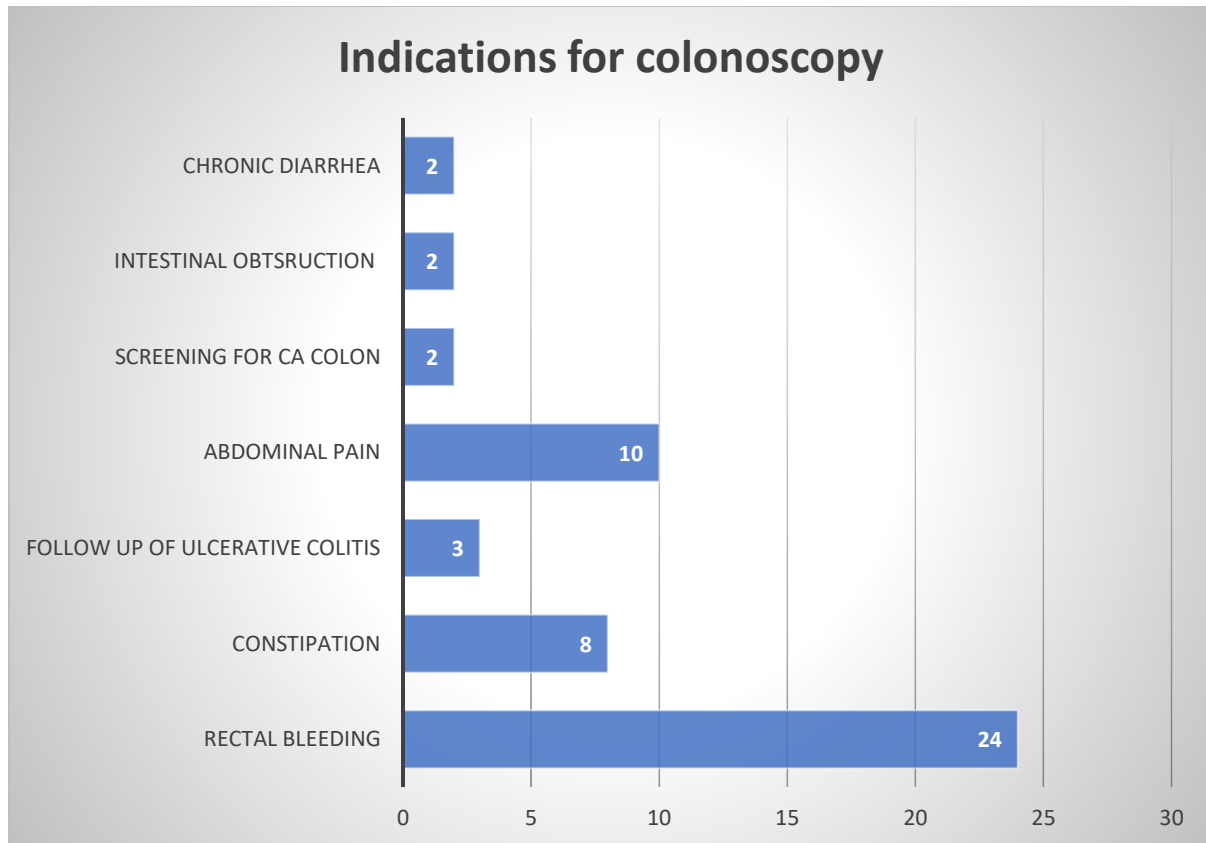


Figure 3: Indications among the sample patients for performing colonoscopy

Among the patients who underwent digital rectal examination before performing colonoscopy, 90% were shown to have no findings on examination, (8%) had external hemorrhoids, and (2%) had anal fissures. Figure 4 shows these results.

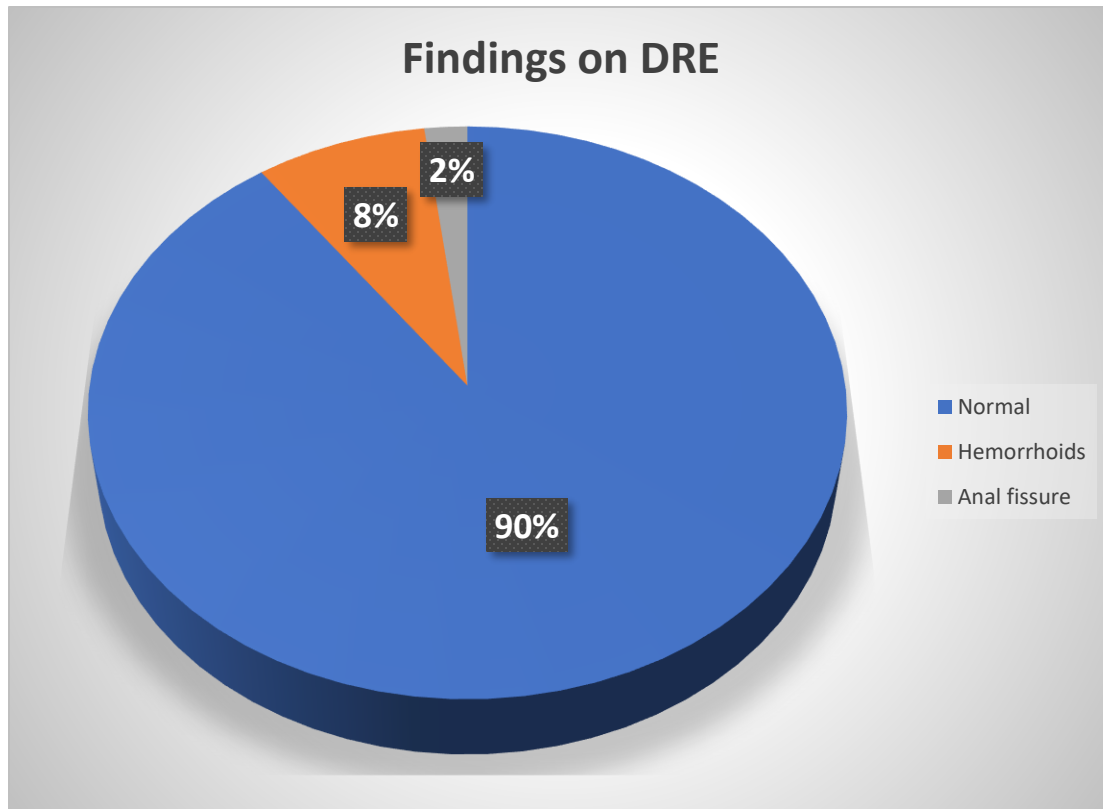


Figure 4: Percentage of the findings on digital rectal exam among the patients in the study sample

The level of the gastrointestinal tract which was reached by colonoscopy was the cecum in 25 patients (50%), followed by the descending colon in 9 patients (18%), and less commonly the transverse colon in 5 patients (10%), the splenic flexure in 4 patients (8%), the sigmoid colon in 4 patients (8%) and the hepatic flexure in 3 patients (6%). These results are illustrated in figure 5.

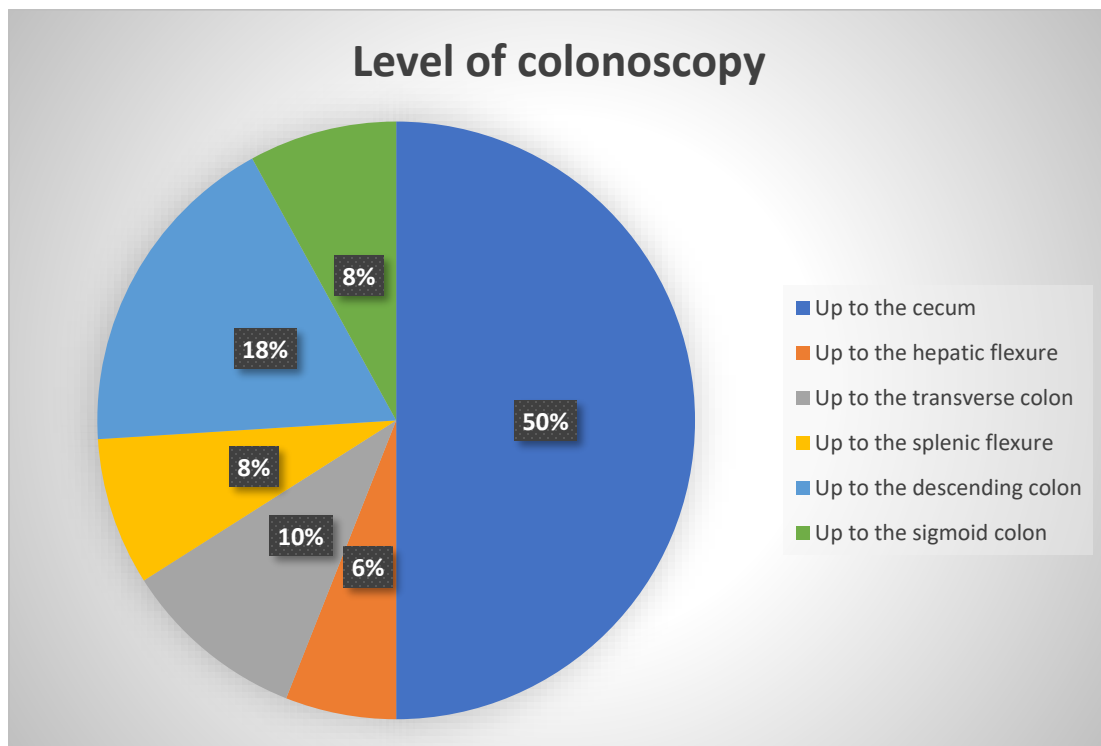


Figure 5: The levels that were reached by colonoscopy in the study sample

The colonoscopic findings of the patients in the study sample are shown in figure 6. Internal hemorrhoids were the most common finding composing around (32%) of the study sample. The remaining findings were as the following: sessile polyp (12%), ulcerative colitis (6%), proctosigmoiditis (6%), a rectal mass (6%), anal fissure (2%) and Crohn's disease (2%). Normal endoscopy was found in 26% of the patients. The overall diagnostic yield was 74% (figure 7).

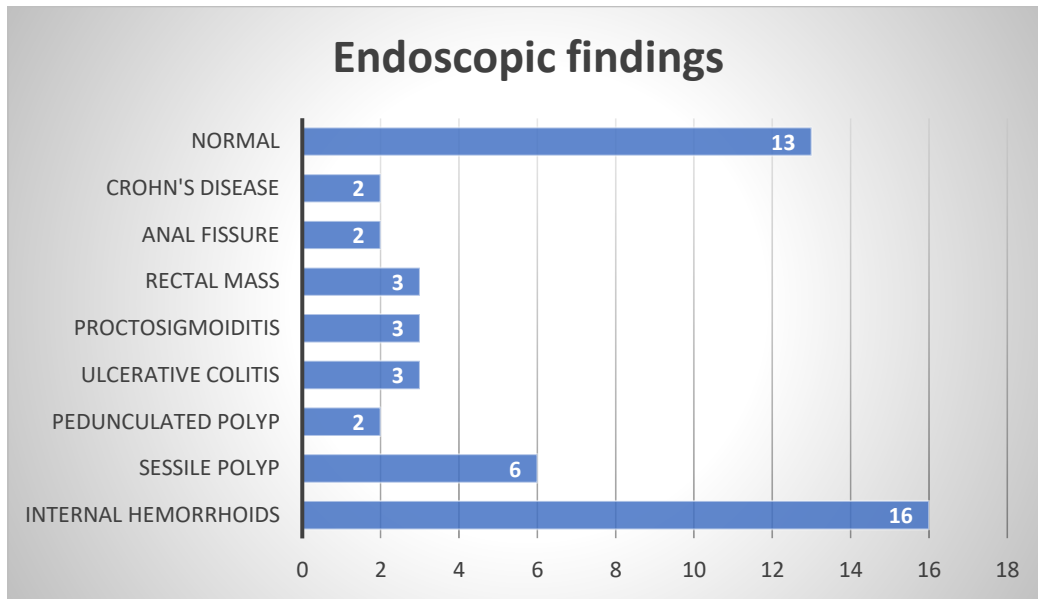


Figure 6: Colonoscopic findings among the patients

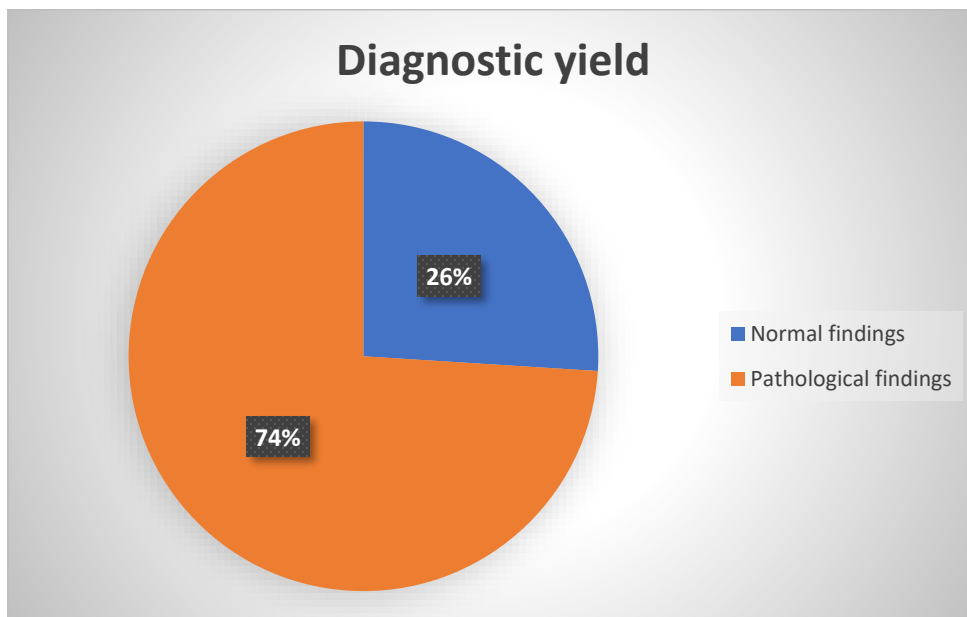


Figure 7: Diagnostic yield of the study

Among the patients who presented with rectal bleeding, the commonest colonoscopic finding was internal hemorrhoids 11 (45.83%), followed by sessile polyps 3 (12.5%), pedunculated polyps 2 (8.3%), anal fissure 2 (8.3%), rectal mass 2 (8.3%), colitis 1 (4.16%). Normal findings were seen in 2 of the patients (8.3%). These results are illustrated in figure 8.

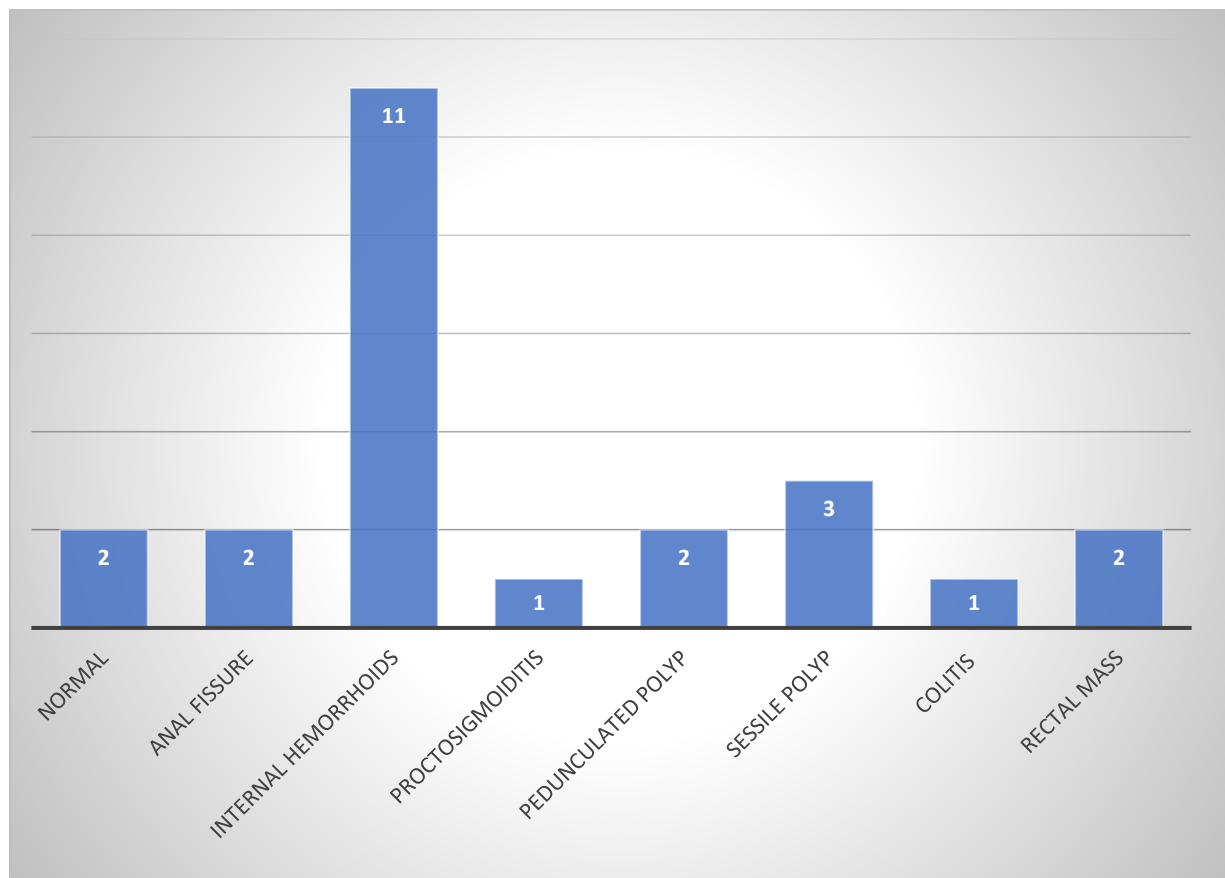


Figure 8: Colonoscopic findings in patients presenting with rectal bleeding

Discussion

Discussion:

Colonoscopy is accepted nowadays as the gold standard in macroscopic assessment of the colon. In addition, it is used routinely for biopsy or polypectomy, for diagnosis and treatment of gastrointestinal bleeding, for extraction of foreign bodies and decompression of sigmoid volvulus^[18]. The main purpose of our study was to reveal the indications and diagnostic outcomes of colonoscopy and compare that with the published experiences.

In our study the overall diagnostic yield was 74%. This result is similar to the findings reported from Egypt^[19] (71.8%) and Nigeria^[20] (79.6%) but much higher than the diagnostic yield of 21% described from Kuwait^[21]. The large difference in these findings may be due to institutional selection criteria and the differences in the spectrum of colonic diseases in different communities.

The concept of colonoscopy success has been characterized as the visualization of the cecum. It is stated in the literature that the rate of accessing the cecum should be around 95% in academic centers^[22]. In our study, the success rate of 50% was well below the standard rate. The inadequate bowel cleansing and patient compliance seem to be responsible for the low success rate in our study. Other reasons that play a role in this failure can be summarized as the patient's general status, gender, abdominal adhesions due to previous surgeries, radiation therapy, drugs used for sedation, the feature of the selected device, looping during colonoscopy, colonoscopy device technology, and the collaboration and experience of the team^[23].

The indications for colonoscopy in this study were similar to other centers in Egypt^[19] and Nigeria^[20], the commonest indication being rectal bleeding (48%). The majority of the patients and their referring physicians were concerned about the possibility of cancer. Colorectal cancer is one of the most common cancers worldwide and its incidence is reported to be increasing in resource limited countries, probably due to the acquisition of a western lifestyle. Apart from direct visualization of cancerous lesions and biopsy of the specimen, current research has shown that most colon cancers arise from neoplastic polyps within the colon and that if these polyps are found early and removed, colon cancer can be prevented. There is a global movement to screen patients at risk of developing colonic cancer with wide acceptance among physicians for colonoscopy as a reference standard tool^[24]. As colorectal cancer screening programs for average risk patients are not

implemented in our community the role of colonoscopy in detection of cancer and polyps in the colon is specifically indicated.

The colonoscopy findings in our study were similar to the findings of two studies conducted in Nigeria^[20,25] with internal hemorrhoids being the commonest finding (32%).

In this study the commonest cause of rectal bleeding was internal hemorrhoids (45.83%). This result was similar to other results obtained in Nigeria^[26] and Hong Kong^[27] where internal hemorrhoids accounted for 53.1% & 58.1% of the findings respectively. Also, the results showed a high diagnostic yield for colonoscopy in patients with rectal bleeding (91.66%). This high rate of pathology may be partly caused by selection of cases for referral by the referring doctor.

Conclusion

Conclusion:

Colonoscopy is a cheap, safe and effective method of investigation lower gastrointestinal abnormalities. When the indication is based on the symptom, the diagnostic yield can be as high as 74%. Rectal bleeding is the commonest indication for performing colonoscopy in Al-Imamein Al-Kadhimein teaching hospital. Internal hemorrhoids are the commonest finding in patients undergoing colonoscopy at Al-Imamein Al-Kadhimein teaching hospital and are the commonest cause of rectal bleeding.

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