

# Complications following Colonoscopy Procedure in Khyber Teaching Hospital Peshawar

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## ABSTRACT

**Objective:** To document and evaluate the clinical complication in all patients following diagnostic colonoscopy.

**Study Design:** Single centered, descriptive / cross sectional study

**Place and Duration of Study:** This study was conducted at the Medicine department, Khyber teaching Hospital (KTH), Peshawar from April 2018 to September 2018.

**Materials and Methods:** A total 400 patient was included in this study with mean age of 46±1 years. Formally informed consent was taken and all the demographics information of the patients was recorded before the colonoscopy procedure. Colonoscopy was performed and all clinically observed adverse events like pain, perforation, bleeding, respiratory arrest, tachycardia and death were recorded. All the recorded data was analyzed by using SPSS version 20.0 while the graphs were constructed using graph pad prism version 6.0.

**Results:** Among 400 patients, 240 (60%) were male and 160(40%) were female. Clinical complications were observed in 40(10%) patients, while no clinical complications were noted in the rest 360(90%) patients. Out of these 40 patients who have some sort of complications, 20 patients were male and 20 patients were female. There was no major complication like perforation, cardiac arrhythmias, major respiratory arrest or aspiration and immediate death in any patients. Minor complications like Pain, tachycardia (palpitation) and minor bleeding were observed in 20, 10 and 10 of the patients, respectively. The age and possibly gender difference does not contribute any significant contribution in the development of these complications.

**Conclusion:** All these results clearly indicate, "That lower GI endoscopy (Colonoscopy) is a very safe procedure in indicated patients, proper preparation of the patient and properly performed either directly or in the supervision of a senior endoscopist".

**Key Words:** Colonoscopy, lower GI tract and major complications

**Citation of articles:** Jamaluddin, Nizamuddin, Iqbal W, Shah A, Khan M, Naz S. Complications following Colonoscopy Procedure in Khyber Teaching Hospital Peshawar. Med Forum 2019;30(2):75-77.

## INTRODUCTION

Lower GI endoscopy, also called colonoscopy is a common procedure performed in both indoor and outdoor settings. It is performed in a number of specialties like gastrohepatology, internal medicine and general surgical departments<sup>1</sup>. It is usually requested for a number of different clinical diagnostic and some interventional/therapeutic procedures<sup>2</sup>. So far "the most common diagnostic indications for colonoscopy are long standing constipation, diarrhea, weight loss,

melaena, bleeding per rectum, loss of appetite and follow-up cases for treated cases with carcinoma of the large gut". The most common therapeutic indications are removal of polyps<sup>3</sup>.

Colonoscopy is a safe procedure, if performed in a well-dedicated setup by skilled and experienced hands. Preparations of the patients before the procedure do matter a lot. Mostly, "complications are usually seen in patients where indications are weak and patient is not properly evaluated or prepared before the procedure". The skills of the endoscopist are also considered as the most important factor in the development of different complications<sup>4</sup>.

Commonly, some of the complications like generalized phobia, pain, tachycardia (palpitation) and small amount of bleeding can be seen without any threat to life of the patient<sup>4</sup>. But more serious complications including cardio-respiratory arrest and cardiac arrhythmias, perforation of the gut, heavy bleeding and finally death are least common in all these procedure and are rarely seen<sup>5</sup>. It has also been observed that these complications are common in those patients who have some other major concomitant disease like hypertension, COPD, ischaemic heart disease and bleeding disorders. It can also be seen in non-

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Received: November, 2018

Accepted: December, 2018

Printed: February, 2019

cooperative and emotionally labile patients<sup>6</sup>. Keeping in mind the safety profile of this procedure, it is considered as one of the safest invasive procedure.

Many studies at international level have shown different result regarding the minor and major complications. But luckily, major complication like death is not yet reported. In spite of such an important invasive procedure, there is very little data at national level about this procedure and their complications. To fill this gape, this small effort is made in the form of this study. It was basically done to document all the possible complications relating to this procedure and properly present it in a professional manner.

**MATERIALS AND METHODS**

Single centered, descriptive and cross sectional study, which was conducted in the medicine department, MTI Khyber Teaching Hospital, Peshawar. The duration of study was 06 months, starting from April 2018 to September 2018. A total of 400 patients, undergoing colonoscopy were enrolled for this study by non-probability purposive sampling. The age group of 30 and above years, including 60% male and 40% female patients were included. In order to exclude all confounders, patients having known major bleeding disorders, cardiac arrhythmias and other respiratory diseases (COPD, Asthma) were excluded from the study.

**Data Collection Procedure:** First informed consent was taken. A total 400 patients who were subjected to colonoscopy procedure, both from outdoor department and indoor department of Khyber Teaching Hospital Peshawar were formally included in this study. With the approval of hospital ethical board, “applying exclusion and inclusion criteria, consecutive manner was used to collect the samples”. In every patient, all the possible complications, which were observed, were recorded separately in detail.

**Data Analysis:** In this study, all the documented information were formally presented in frequency and its value are shown as percentages. For analysis, SPSS version 20 was used. Applying Chi-Square test, the possible association between categorical values was assessed. Using the simple Odds ratio (OR), with 95% confidence interval was determined to find the possible risk for complication. The graphs were constructed using graph-pad prism version 6.0.

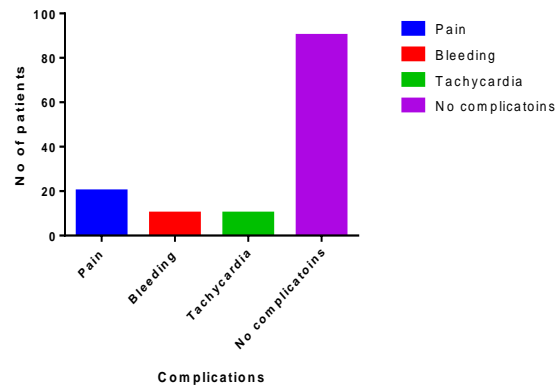
**RESULTS**

In all 400 patients, “there was 240 (60%) male and 160 (40%) female, having mean age of 46±1 years”. At the end of colonoscopy procedure, colonoscopy related all sort of complications, including both minor and major were observed in 40 (10%) patients. In all these 40 patients, no life threatening complication like gut perforation, major cardio-respiratory arrest and finally death was noted in any patients. Pain, tachycardia (palpitation) and small amount of bleeding were observed in 20, 10 and 10 patients respectively as

shown in table number 01 and is graphically presented in figure 1.

**Table No. 1: Observed Colonoscopy related complications**

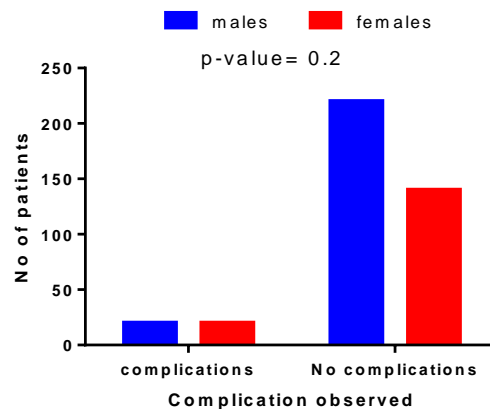
Complications	Numbers (%)
Pain	20 (5)
Bleeding	10 (2.5)
Tachycardia	10 (2.5)
No Complications	360 (90)
<b>Total</b>	<b>400</b>



**Figure No.1: Minor complications observed during colonoscopy**

**Table No.2: Association of Colonoscopy related complications based of gender.**

	Complications		X <sup>2</sup>	p-value	Odds ratio (95CI)
	Yes	No			
Males	20	220	1.41	0.2	0.6 (0.33-1.2)
Females	20	140			
Total	40	360			



**Figure No.2: Complications observed between males/females**

Similarly, the test for association was not successful because the data were skewed more towards negative results (complications were not present in 90% of patients). Chi-square was done to determine any possible statistical association between males and

females but results shows no significant difference between males and females (p-value=0.2) with Odds ratio and 95% CI= 0.6- 0.33-1.2 respectively. The result is shown in table 2 and graphically represented in figure 2.

## DISCUSSION

Colonoscopy is one of the most commonly advised procedures that are nowadays performed in many medical and surgical specialties. Traditionally, gastrohepatology department were performing it, but nowadays, a huge number of trained worthy physicians and skilled surgeon can also perform it, both for clinical diagnosis and some therapeutic intervention. The prevalence of major complications arises with colonoscopy is very low and it can be considered as one of the safest procedure for the diagnosis and possible intervention in many problems with minimal adverse events<sup>7</sup>.

There are many complications, which can occur during Colonoscopy<sup>6,8,9</sup>, but in our study we have observed some minor complications and there was no major clinical complications. The finding of our study was similar to the finding of another study. Our findings were similar to a published study, which was reported by Bashiru Ismaila et al from Nigeria in the form of prospective two years audit conducted in 2012. In a total of 68cases who were subjected to lower GI colonoscopy and Sigmoidoscopy, no major complications were observed even in a single case<sup>10</sup>. Similarly, a study published in 2010 followed all the patients for a period of 30 days after colonoscopy revealed no major complication<sup>11</sup>. A systemic review and meta-analysis published in 2016<sup>12</sup>, also reported no major complications observed during colonoscopy, in fact the complications related to colonoscopy is declining. Our study is also indicated that only minor complications were found in our study which may be reduced further if the patient is counselled properly and the procedure is performed by experienced consultant.

## CONCLUSION

These finding clearly show “that colonoscopy is completely a safe procedure and the frequency of both major and minor complications is extremely rare, if it is performed by an experienced fellow in a well prepared and properly investigated patient”. However, multicenter studies is needed in this regards, so that we can get clearer and complete picture.

### Author’s Contribution:

Concept & Design of Study:	Jamaluddin
Drafting:	Akbar Shah
Data Analysis:	Waheed Iqbal
Revisiting Critically:	Manzoor khan,

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Final Approval of version: Shafaq Naz, Jamaluddin

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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